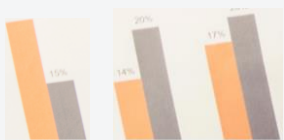
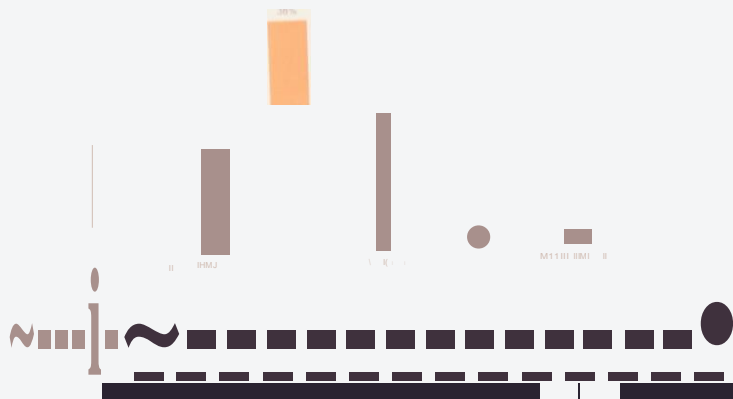
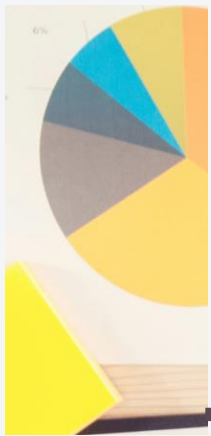


Modern Concept of Management



Modern Concepts of Management

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Contents

Awareness Among the Students Towards Ethical Consumerism	1-6	Dr. Arshan Kler
Significance of Training & Development in Organizational Development.....	7-10	Dr. Palki Sharma
A Creative Approach to Distributed System Mobility	11-24	Mr. Sachin Sudan
Consumer Perceptions Towards Organic Food.....	25-28	Dr. Bhavna Sharma
A Study on Mutual Funds in India.....	29-34	Dr. Komal Bhardwaj
Examine the Growth Rate of Punjab State Before and After Liberalization Period and Health Scenario During this Period.....	35-38	Dr. Jaskirat
Challenges and Benefits of Online Marketing	39-43	Mr. Gurjeet Singh
Overview on Business Cycles.....	44-49	Ms. Anisha
Challenges and Opportunities in the Field of Rural Marketing with Reference to Punjab.....	50-56	Mr. Deepak Saroha
An Introduction to Blockchain	57-65	Dr. Komal Bhardwaj
Financial Management and Planning in the Organizations.....	66-69	Mr. Anchit Jhamb & Ms. Shweta Wadhwa
Business Ethics.....	70-73	Dr. Navalpreet Kaur
E- Commerce Concept and It's Models	74-78	Dr. Rohit Markan
Yield Management.....	79-82	Mr. Jivtesh Singh Bamrah

Indicators to Measure Digital Economy.....	83-88	Ms. Kritika
Production and Operations Management: A Modern Development	89-93	Ms. Shweta Wadhwa & Mr. Anchit Jhamb
Strategies for Financial Reorganization	94-97	Ms. Nikita Dhawan
Strategies for Managing Stress in the Workplace	98-103	Dr. Rajinder Kaur Bhogal
Effect of Amazon on Customers for Various Brands	104-108	Ms. Shweta Wadhwa & Mr. Anchit Jhamb
Management approaches in different Cultural Places	109-110	Ms. Aayushi Mithu ,Mr Rajesh Chamoli and Mr Jaydeep Dobhal
Consumer behavior changes in Critical times.....	111-112	Ms.Aayushi Mithu
Trade Impact on Economic Growth	113-114	Ms. Aayushi Mithu
Youth Unemployment - Historical Variation	115-117	Ms. Aayushi Mithu
Education Expenditure and Average Income Correlation.....	118-119	Ms. Aayushi Mithu
Unleashing Creativity : Exploring the boundless possibilities of photoshop.....	120-125	Mr. Akash Kumar
Unleashing The Visual Symphony : The Evolution and Future of Motion Graphics	126-129	Mr. Akash Kumar
Why is preproduction important in film making ?.....	130-139	Mr. Akash Kumar
Exploring the world of 3D Modelling from creation to animation and beyond.....	140-144	Mr. Akash Kumar
Virtual Reality and Augmented Reality in Multimedia	145-149	Ms Bhavna
Anticipation Secondary Motion	150-155	Ms Bhavna

Legal and Ethical Consideration in Human Resource Management.....	156-162
Dr Suprina Sharma & Dr Rajinder kaur	
The Relationship between Organisational Culture and Employee Satisfaction and Engagement	163-170
Dr Suprina Sharma & Mr Deepak Saroha	
The Impact of Strong Organizational Culture on Attracting and Retaining Top Talent.....	171-177
Dr Suprina Sharma & Mr Deepak Saroha	
The effects of cultural alignment between employees and organizational values on job Satisfication and commitment.....	178-185
Dr Suprina Sharma & Dr Rajinder Kaur	
Workplace Flexibility and Remote Work: Implications for HR Practices in India.....	186-193
Dr Suprina Sharma & Mr Deepak Saroha	
Employer Branding and its Influence on Talent Acquisition in the Indian Job Market.....	194-198
Dr Suprina Sharma & Mr Deepak Saroha	
The Role of HR in Nurturing Leadership and Succession Planning in Indian Companies: Building a Path to Sustainable Success.....	199-203
Dr Suprina Sharma & Mr Deepak Saroha	
The Influence of Subcultures within an Organization on Overall Organizational Effectiveness: A Review of Research.....	204-210
Dr Suprina Sharma & Mr Deepak Saroha	
The Role of Organizational Justice in Shaping Employee Perceptions of Fairness and Trust	211-216
Dr Suprina Sharma & Ms Anjali	

The Role of Diversity and Inclusion in Promoting Innovation and Creativity in the Workplace.	217-223
	Dr Suprina Sharma & Ms Anjali
A Comparative Study on Financial Analysis on SBI and HDFC bank	224-225
	Ms. Shikha Puri
A study on E-Recruitment.....	226-229
	Ms. Shikha Puri
Marketing (Student satisfaction).....	230-232
	Ms. Shikha Puri
The Role of Effective Communication in cross functional team collaboration.....	233-235
	Mr Deepak Saroha
Effective Strategies for Managing Diversity in the Workplace.....	236-238
	Mr Deepak Saroha
The Role of Human Resource Management in Promoting Work-Life Balance.....	239-241
	Mr Deepak Saroha
Training Program in IT Company.....	242-248
	Mr Deepak Saroha
A comparative study on work life balance.....	249-255
	Mr Deepak Saroha
A Brief Introduction about Cultivation of Brullels Sprout in Punjab Region.....	256-260
	Ms. Diksha Thakur
Understanding Hair and Fur Simulation.....	261-264
	Mr Dinesh Bhatia

Understanding the substance painter.....	265-269	Mr Dinesh Bhatia
Unleashing Creativity with 3D Motion graphics.....	270-274	Mr Dinesh Bhatia
The Impact of Hope , optimism and Resilience in organization	275-278	Dr Bhavna Sharma & Mr. Santosh Mishra
The Impact of Mobile Application marketin: A Comprehensive Analysis.....	279-282	Dr Bhavna Sharma
The Impact of the Internet on Learning.....	283-2286	Dr Bhavna Sharma
The Social Psychology of Creativity	287-288	Dr Bhavna Sharma
The impact of Online Classes on Student Growth....	289-291	Dr Bhavna Sharma
Theories and Frameworks for Online Education.....	292-295	Dr Bhavna Sharma
Wisdom, Intelligence and Creativity Synthesized- A Comprehensive Analysis.....	296-300	Dr Bhavna Sharma & Mr. Ashok Kumar Yadav
Work Stress and Health in a Globalised Economy.....	301-303	Dr Bhavna Sharma
Working Women and Work Pressure.....	304-306	Dr Bhavna Sharma
Role of Microbiology in Forensic Science.....	307-312	Dr. Neha Baryah & Mr. Suraj Singh
Relationship of Mental Disorder and Forensic Psychology.....	313-319	Dr. Neha Baryah
A Study on Job Analysis in Organisation.....	320-323	Dr. Palki Sharma & Mr.S.K. Mishra

Benefits of Customer Relationship Management (CRM) in an Organisation.....	324-331
	Dr. Palki Sharma
Customer Satisfaction and Retention in PAYTM.....	332-334
	Dr. Palki Sharma
Understanding Consumer buying behaviour.....	335-337
	Mr. Vikas, Dr. Rohit Markan, Dr. Santosh Kumar Mishra & Dr. Suraj Singh
Competitive and Demand Analysis of Snack Brands	338-341
	Mr. Vikas, Dr. Rohit Markan
Leadership development in a Digital Era- Navigating the Evoving Landscape.....	342-344
	Mr. Vikas & Mr. Anshul Pardeshi
Optimizing the Marketing mix- Strategies for Product, Price, Place & Promotion.....	345-348
	Mr. Vikas & Mr. Anshul Pardeshi
Remote work and Virtual teams- The impact on HRM Pratices	349-352
	Mr. Vikas & Mr. Anshul Pardeshi
Talent Acquisition Strategies in a Competitive Job Market- Navigating the Challenges.....	353-356
	Mr. Vikas & Mr. Anshul Pardeshi
Corporate Social responsibility (CSR) in Marketing Strategy- Enhancing Brand Value and Consumer Engagement	357-360
	Mr. Vikas & Mr. Anshul Pardeshi
Performance Analysis of AODV, DSR, OLSR routing protocol in adhoc networks	361-371
	Mr. Deepak Singh Kakri, Mr. Lakhan Singh, Ms. Aayushi Mithu
Smart Garden Monitoring System Using internet of things.....	372-377
	Mr. Shivam Pandey, Ms. Tanya Chandra, Mr. M.K. Pandey, Mr. S. S. Rauthan & Ms. Aayushi
An Analysis of (STAAS) soft testing as a Service model in Cloud Computing.....	378-382
	Mr. Santosh Mishra, Mr. Suraj Sinha & Dr. Bhavna Sharma
Review and Analysis of Energy Efficient allocation policy for virtual machine in cloud computing	383-386
	Mr. S.K. Mishra, Mr. Suraj Sinha & Ms. Bhavna Thakur
Student's routine analysis using Machine Learning tools.....	387-391
	Mr. S.K. Mishra, Mr. Suraj Sinha & Dr Suprina Sharma

Methods for Quick and Efficient Division in Verilog Code Using Vedic Mathematics.....	392-403
Ms Surabhi Chauhan , Ms Neelima Singh,Mr Madan Pal Singh , Mr Ashok Kumar Yadav	
Solar Tracker : Efficient use of Solar panels	404-412
Dr Rajinder Kaur, Mr Rajesh Chamoli, Mr. Jaydeep Dobhal & Mr. Rajendra Prajapati	
Research on UHVDC System withy high renewable energy integration for power grid ...	413-416
Mr. Vivek Kumar yadav , Dr Palki , Ms Madhuri Aggarwal	
Investigating the effects of Workplace Diversity on creativity and innovation	417-419
Ms. Komal	
Exploring the Impact of Work life balance initiatives on Employee wellbeing and productivity	420-422
Ms. Komal	
The influence of Organizational justice on employer satisfifaction and commitment.....	423-426
Ms. Komal	
Exploring the role of organizational ethics in shaping employee behavior and decision making	427-428
Ms. Komal	
The Role of Emotional Intelligence in Effective Team dynamics and organizational Success	429 -430
Ms. Komal ,Ms Surabhi Chauhan	
Potential Trends of Corporate Social Responsibility in 2020's for sustainable future.....	431-434
Ms. Komal ,Ms Surabhi Chauhan	
Emergence of total qulity management in health care.....	435-438
Ms. Komal ,Ms Surabhi Chauhan	
Cognitive , Social amd Emotional Implications of Technology on Humans.....	439-442
Ms. Komal	
Fusarium wilt in Cucurbits : prevention and control.....	443-451
Ms. Neha Sharma	
Role of insects pathogenic bacteria in biological control and their mode of action	452-461
Ms. Neha Sharma	
Mass Production of green lacewing chrysoperia carnea (coccinelid: chrysopidae).....	462-465

	Ms.Neha Sharma
Method of mass production and ladybird beetle.....	466-468
	Ms. Neha Sharma
The Relationship between Emotional intelligence and work life balance in IT Sector.....	469-471
	Ms. Pooja Rani , Ms Neelima Singh
Traning and development: A Comprehensive Study.....	472-474
	Ms. Pooja Rani
Value Added tax and Goods and services tax : A comprehensive study	475-476
	Ms Pooja Rani
A study on Market Research and outlets mapping in fun flips.....	477-478
	Ms. Simranjeet Kaur
A study on Employee Health management.....	479-481
	Ms. Simranjeet Kaur
Working Capital Management in Manmandir milk and agro products pvt ltd	482-484
	Ms. Pooja Rani
A study on Edutech startups and business.....	485-486
	Ms.. Simranjeet Kaur
Breeding for Durable Rust resistance in wheat.....	487-493
	Mr. Sagar Kumar
Organic Farming in Fruit production	494-515
	Mr sagar Kuamr
A Study on Human Resoucre and General Management	516-518
	Ms. Simranjeet kaur
Fashion influence of Bollywood on Society.....	519-535
	Ms.Suman Sharma , Ms Sarika , Ms Radhika Sidhana
Social Movements and Inequality in Indian Economy.....	536-539
	Ms.Suman Sharma , Ms Jagriti, MS Bhavana Thakur
The McBride Commission and UNESCO : Addressing Communication problems, Unequal Developments and Third world concerns	540-542
	Ms.Suman Sharma & Mr Akash
Exploring the different types of Communications	543-546

Ms.Suman Sharma , Ms Shilpa Aggarwal, Ms Bhavana Thakur

Review on Chewable Tablets..... 547-556

Mr Sunil Kuamr

India's Agro based Entrepreneurship : Scope and Limitations 557-561

Ms.Suruchi & Ms Pooja

Costumer satisfaction towards the service of Indusind Bank 562-564

Ms .Shweta Wadhwa

An assessment of Job Satisfaction 565-566

Ms Shweta Wadhwa & Dr Avneet Kaur

Competitive and Demand analysis of the branded snacks..... 567-568

Ms.Shweta Wadhwa & Dr Avneet Kaur

Recuritment and selection in talent serve..... 569-571

Ms.Shweta Wadhwa & Dr Avneet Kaur

Student satisfaction on talent serve 572-573

Ms.Shweta Wadhwa & Dr Navalpreet kaur

Digitalo marketing : Boom or Ban..... 574-575

Ms.Shweta Wadhwa & Dr Navalpreet kaur

Ratio analysis as fundamental analysis 574-576

Ms.Shweta Wadhwa & Dr Arshan kler

Recruitment and selection process in infosis 577-578

Ms.Shweta Wadhwa & Dr Arshan kler

Integrated farming system 579-581

Dr V Reeta , Ms Neha Sharma

Overview of life cycles , looses and integrated management strategy	582-586
	Mr Vikas chauhan & Ms Neha sharma
Marker Aided Selection(MAS) : A Mini Review.....	587-596
	Mr Vishal Gandhi,Ms Neha Sharma andMr Vikas Chauhan
Recognition of Pathogen by plants : A Review.....	597-600
	Mr Vishal Gandhi,Ms Neha Sharma andMr Vikas Chauhan

Awareness Among the Students Towards Ethical Consumerism

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Abstract

Consumerism is a social and economic order based on fostering a desire to purchase goods and services in ever greater amounts. The rise in ethical consumerism and green brands that identify themselves as ethical, has led to a rise in ethic-based decisions in the mass market, enabled by increased understanding and information about businesses practices. The term ethical consumerism may refer to the wider movement within marketing, which means that large corporations wish to be seen as working ethically and improving the ethical standards of their industry. The rise in popularity of ethical consumerism over the last two decades can be linked to the rise of CSR. The current Study is an endeavour to investigate awareness of Indian College understudies towards ethical consumerism.

Keywords: Ethics, Consumer, Ethical Consumerism, Corporate Social Responsibility, Green Products.

Introduction

In response to this growth, a new form of consumerism has arisen – ethical consumerism. There are some people that not only consider the price and quality of their purchases, but also where it came from, its environmental impact, workers’ rights and if animals were mistreated or neglected. Ethical consumers hope that their purchases can be more meaningful, and may also make ethical consumption choices because ethical issues have become an important part of their self-identity (Shaw et al. 2000, 879-894).

Ethical consumers make their purchasing decision based on their ethical obligation (Shaw et al. 2003, 1485-1498). Moreover, purchases are a subjective behaviour that reflect people’s philosophy and depend on personal value, so it’s common that they make ethical decisions according to their personal beliefs about what is right or wrong (Kurland 1995, 297-313). These purchases are reflected when people choose products, they consider to be ethical because of certain label

A fair-trade label is a good example, indicating that the product was delivered from a developing country where workers right and welfare are taken into consideration. The members of this ethical consumption movement reflect their values and beliefs by what they choose to purchase or not purchase. The increasing concern that peoples have regarding environmental and social concerns motivates them to display this concern through their purchasing decisions. Accordingly, an increasing number of individuals seek to act beyond their own immediate interests as a consumer and consider the impact of their choices on wider society (Shaw et al. 2006, 1049-1067).

Considering the growing trend in ethical consumerism and it becoming a major driver of a diverse range of ethical approaches in how organizations are operating and performing. The growth of ethical purchasing behaviour is not just a spontaneous maturing of individual consumer awareness, but is also a phenomenon deliberately driven by pressure groups seeking to achieve a variety of specific campaign goals (Harrison et al. 2005, 55). Alternative approaches such as fair-trade, conservation-driven, animal welfare purchases, and the availability of organic produce began as market niches but today are making their presence felt in mainstream markets.

Review of Literature

The idea of 'ethical consumerism' has requested a lot of consideration from enterprises across the business range. Browne et al (2000) portray moral industrialism as "buying choices that are made with thought for moral elements of how items are created". The Co-operative Bank (2003) characterizes it all the more extensively as "the decision of an item or administration . . . which upholds a specific moral issue - be it common freedoms, the climate or creature government assistance."

Newham and Shaw (2007) in their survey of moral commercialization recognized various strands of examination on moral and green utilization: the ascent of moral commercialization and scholastic premium in it; showcasing to moral purchasers; utilization profound quality and maintainability; the making of chances for moral commercialization; scholarly conversation on the varying qualities of moral and exploitative utilization; and moral utilization objective activity or cognizant individual ventures frequently depicted as "looking for a superior world" (Low and Davenport, 2007).

For various years, researchers have contended that a profoundly principled gathering of mindful and moral shoppers has arisen (e.g., Strong, 1996; Shaw and Clarke, 1998). They are boycotting genuine creature fur items, or items that include the utilization of creatures in item testing. They are likewise inspecting a company's record on recruiting and advancing

minorities and ladies (Roberts, 1996,). Cowe and Williams (2000,) attest that, „„shoppers are exceptionally mindful of moral issues and many are prepared to put their cash where their ethics are“““. Accordingly, there is a rising assemblage of proof to propose that customers take their ethics, notwithstanding their wallets, when they visit the high road (Thogersen, 1999).

Discussion

Useful Ways to Inform Ethical Consumers:

The above figure is meant to get an idea of the process of decision making for ethical consumers to become informed in their purchasing decisions. Some more details on different aspects that inform consumers are followed.

Tools, Labels, and Certifications:

Visible labels and certifications are excellent ways for ethical consumers to make instant purchasing decisions; often consumers make decisions according to certain types of labels or certifications like fair-trade, organic, green, ecological, etc.

Media and Online Information:

Advertising and promotions from media and websites can have a high influence level in the decision-making process. Since the development of internet, people rely more and more on the web for information and news, for both their professional and personal life. Sometimes this reliance can be a negative and inaccurate way for people to base decisions as accuracy is not always ensured and people can become overloaded with information and mistakenly ignore some important facts.

Market Trends:

Market trends or fashion have a large influence on consumers purchasing decisions, mainly people are just following the trends and trying to keep up with the latest trends. If used properly, the market demands can play an important role as an information source for not only ethical consumers but also business and organizations to adapt to these changes. When there is a demand for products, consumers will follow this trend and companies will fulfill the demands.

Social Norms:

Social norms include two aspects: communities and family. We all live in our own community and connect through various relationships. It is not surprising to find that people who come from the same background or culture have similar purchasing behaviour, and

tastes, they share many common characteristics. People that socialize within in one community affect each other's social norms. If there is one consumer that communicates ethical purchasing habits in one community, others from the same community may be more inclined to make similar ethical purchasing decisions. Family can be responsible for creating not only one's values and beliefs but also in how they portray those through (ethical) purchasing habits. Family can have a great influence in changing habits since the trust level within families is usually high.

Government:

Policies are no doubt the most powerful factor for assisting in the creation of tools for ethical consumers. Policies have a great influence on the daily life of consumers and also can change the behaviour of business directly.

Communication and Marketing from Business:

Business itself can also be a useful information source for ethical consumers. What information they provide and what they serve can be inspiring for consumers. Businesses are not only following the market trends, but in this case, business can use their own power to inform consumers in ethical consumption through promoting these products/services. Additionally, employees within these businesses are also consumers and if they share the vision of their employer, they are more likely to assist in spreading the word.

In conclusion, ethical consumers mean well but are not informed enough to make truly ethical and sustainable purchasing decisions. The intent to do „good“ is apparent in ethical consumers, however, because there are many single labelled products that mainly focus on one ethical issue, there is room for this good intent to back fire. An example of this is bio plastic made from corn. Although this is biodegradable and made from a renewable resource, the amount of agricultural land required is great and farming practices can lead to degradation of land and contribute to the use of chemical pesticides.

Four Types of Ethical Buying

Ethical consumerism is just as much about supporting the 'good' companies and products as it is withdrawing our support from the 'bad' ones.

Positive Buying: This means favouring particular ethical products, such as energy saving light bulbs. A large number of standards and labels have been introduced to promote positive buying such as Fair trade, organic, free-range poultry, grass-fed beef, dolphin-safe

fish, recycled, Rainforest Alliance certified, Forest Stewardship Council (certified sustainably sourced wood), the Humane Cosmetics Standard.

Negative Purchasing or Boycott: This means avoiding products that you disapprove of, such as battery eggs or gas-guzzling cars. Basically, the opposite of positive buying.

Company-Based Purchasing: This means targeting a business as a whole and avoiding all the products made by one company. For example, the Nestle boycott has targeted all its brands and subsidiaries in a bid to get the company to change the way it markets its baby milk formula across the world.

Fully-Screened Approach: This means looking both at companies and at products and evaluating which product is the most ethical overall.

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Significance of Training & Development in Organizational Development

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Abstract: The field of training and development is concerned with organizational activities which aim at enhancing individual and group performance in an organizational setting. While development is the process of preparing individuals for future roles and responsibilities, training is the process of preparing employees for their current positions. It carries out an analysis that the goal of training and development is to creative learning organizations that make sure that employees can perform their jobs effectively through value addition, gain a competitive advantage, and seek self-growth: this measurable performance resulting from good training and development shall enhance organization development. The organizations' ongoing processes are what aid in the development of abilities, knowledge, and skills. Training and development improves staff performance. . The study came to the conclusion that ongoing training and development are necessary, taking into account factors such as competition, market dynamics, customer happiness, and net promoter score.

Keywords: Training and development, Goal, Organizational Development.

Introduction:

Training is a technique for enhancing a person's productivity and effectiveness at work by enhancing and updating their professional knowledge, developing skills relevant to their position, and nurturing appropriate behavior and attitudes toward their work and other people. In some ways, formal education is explicitly training. While training is largely designed to promote understanding, encourage attitude, and impart skills related to a particular vocation, education is primarily concerned with knowledge improvement. It is the nerve that must contribute to improving employees' quality of work life and growing the company. In most firms, training and development are essential components of enlightening employee performance. The study's goal is to determine how training and development affect employee performance. The study discovered that employees are aware of training, are motivated by training, and perform better as a result of training and development. Training and development for all employees should be actively pursued and made mandatory

Discussion: Training and Development

- (i) **Determining the needs for Training and Development:** As part of the Performance Review and Planning process, managers are expected to go over training and development needs with each of their employees at least once a year. Regardless of whether they are new to the organization, the training and development requirements should be considered within four weeks of their taking up the post.
- (ii) **Sessions for internal training and growth:** the Training and Development Unit arranges training for the staff. It can also set up specialized sessions to address demands for a department, section group of departments, or occupational group. Additionally, Computing Services oversees a staff training programme that is ongoing, and other organizational divisions and departments provide staff training as required.
- (iii) **External Development and Training:** Staff taking external courses that are sponsored by the organization occasionally, the organization may choose to send staff to particular external courses. The Director of Training and Development may ask relevant managers for nominations depending on the course's nature and scheduling constraints. The Training and Development Advisory Committee's Nominations subcommittee will decide who will be represented based on the standards listed below. The centralized training budget will typically cover fees (and, when applicable, permitted travel and lodging). The department or unit making the nomination is in charge of paying any additional incidental expenses. Staff members who receive funding from this budget are often required to provide a brief report to the Director as needed, may also be required to share the knowledge and skills they have acquired with a larger audience, such as through seminars or workshops.

Role of Training in Organizational Development: Today, High-performing companies are realizing more and more that they must implement optimal training and development techniques to strengthen their competitive advantage. Every firm must invest in training and development if it is to maximize the value and potential of its workforce. Numerous studies have shown the unmistakable connections between carefully planned and targeted training and development programmes and the business's bottom line. The quantity and competence of employee training and development also has an impact on the reputation of a sector and of specific businesses. In such a competitive job market, potential employees will research the track record of potential employers in this crucial sector. For many of these workers, career advancement and growth are increasingly desirable or even essential. Companies today confront intense internal and external rivalry for qualified workers as a

result of the staffing and skills shortages that affect all industries. Each firm who makes significant investments in training and development will benefit from a better working environment, improved levels of employee retention, and increased productivity and performance.

Significance of Training & Development in Organizational Development

1. Support for addressing personnel weaknesses
2. Enhanced employee performance; 3. Reliable duty performance
4. Ensuring employee happiness
5. Enhanced efficiency
6. Better service and product quality
7. Lessening of supervision
8. Knowledge and skill improvement
9. Preparing workers for more significant duties
10. It demonstrates to workers their worth.
11. It minimizes wastage.
12. Less supervision is required.
13. It improves employee morale.

Conclusion: The employee demands for training and development are not being met by many Indian businesses other than multinationals, and as a result, there are now such wide gaps between the skills that are needed and those that have been acquired that they seriously disrupt the relationships between training and performance. It is acknowledged that effective training and development policies can play a key role in eliminating job disparities related to race, gender, and impairments. It is advised that the company create a training and development strategy with the goal of enabling all employees to fulfil their responsibilities to the highest standards and provide customers with high-quality services. An essential component of human resource management is training and development. For improved performance, it is crucial for a business to hire capable and skilled workers, and workers are more competent when they possess the necessary knowledge and abilities. Employees would have possibilities through training and development to improve their career prospects and status within the company. The HR department regularly hires qualified individuals from a wide range of markets and offers trainings to meet international problems. Through a variety

of HR initiatives and training programmes, they keep talent within the company, guarantee performers have a career path to improve their performance and increase their contribution.

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A Creative Approach to Distributed System Mobility

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Abstract

Distributed systems are built up on top of existing networking and operating systems software. A distributed system comprises a collection of autonomous computers, linked through a computer network. The whole task is divided on number of resources. The user is not aware that the jobs are executed by multiple computers subsist in remote locations. Distributed computing system is a network of both wired and mobile nodes. Though mobile agents offer much more flexibility, but it has some additional costs and issues such as reliability, security, and fault tolerance which required to be addressed for successful adaptability of mobile agent technology for developing real life applications “Mobility is the one of the problems in the Distributed system which is discussed in this paper”. Mobility problem occurs when node moves in between performing the task in Distributed Computing System. This problem leads to the fault occurrence problem and degrades network performance. The existing algorithm is the master and slave architecture through which the task is assigned by the master node to slave nodes and slave nodes execute task as assigned by the master nodes. In such type of architecture, the divide and rule technique are followed, and after executing the task slave nodes will revert back to master nodes. The major problem in this architecture is of fault, if one slave node moves during task execution then the task allocated by master node will not get completed and fault occurred. In this paper a Nobel technique is developed to handle mobility of nodes in distributed systems.

Keywords: distributed computing system, fault tolerance, task reallocation, and mobility.

Introduction

Distributed computing is a method of achieving computational results much more quickly than with a single computer by using a network of numerous computers, each of which completes a portion of the entire task. A distributed computing system is made up of one or more computers, shared storage, and related software. a distributed system with physical connections to each other and connections made possible by local networks. Heterogeneous systems make up distributed computing. In order to develop the distributed system, various

types of hardware and software are needed. In the following ways, a distributed system is superior to a centralized system.

Scalability: The system is simply expandable by adding more machines as necessary.

Redundancy: Since multiple machines can offer the same services, work continues even if one is down. Additionally, this redundancy does not have to be excessively expensive because numerous smaller units can be deployed.

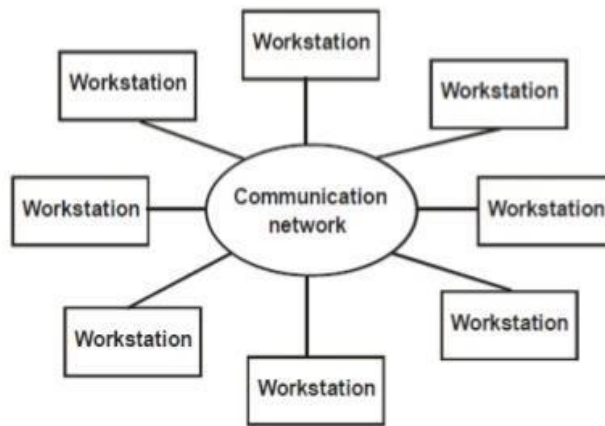


Fig. 1: Computing System Distribution

A distributed system is made up of a number of separate computers that together appear to the system's users as a single computer. This definition emphasises two key ideas. The word "independent" is used first. This indicates that the machines can function independently in terms of architecture. The software makes it possible for this group of linked devices to appear to system users as a single computer, which brings us to our second point. One of the main objectives in designing is what is referred to as the unified system image.

1) Architecture of Distributed Computing

The architecture of distributed computing is as follows:

- a) **Fabric:** This is made up of all the shared distributed resources on the system, which are owned by many people and organisations. Workstations, resource management systems, storage systems, specialist equipment, etc. are included in this.

- b) **Resource and Connectivity Protocols:** These are fundamental protocols for communication and authentication that offer safe ways to confirm the legitimacy of users and resources and permit the transfer of data between them.
- c) **Application Programming Interfaces (APIs) and Services:** That implement interactions across collections of resources are included in the third category, collective services. This includes scheduling and execution of applications, monitoring and diagnostic services, directory and brokering services for resource allocation and discovery, and more.
- d) **User Apps:** This category includes user applications and programming tools that run on mobile devices and rely on mobile resources and services.

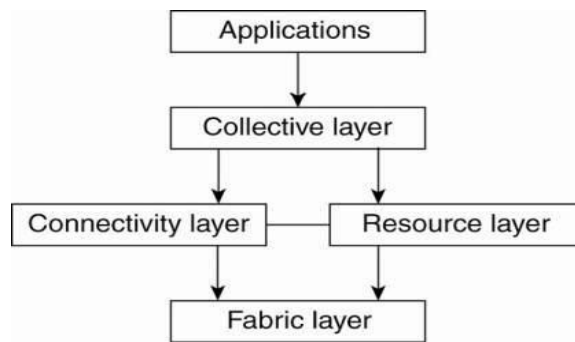


Fig. 2: Architecture Computing

2) Mobile Computing System:

A group of distributed systems known as "mobile computing" – which includes both wired and wireless agents – autonomously share resources and trade services in order to deliver better performance. It seems unnecessary to extend some grid functionalities to the mobile host because the host's resources are constrained by power and memory limitations. But in the future, when the systems become all-pervasive, the power and memory limitations would seem insignificant in comparison to the benefits provided by mobile grid. In addition, as device technology advances, battery and memory limitations are easing and mobile devices are sporting better specifications than their forerunners. Mobile devices can utilise the grid's resources to complete any task.

Although mobile agents provide much greater flexibility, they also come with some additional costs and problems that need to be resolved, such as security, reliability, and fault

3) Fault Tolerance in Distributed System:

Fault tolerance is a need for distributed computing systems. If there are problems, it should still be able to keep working. A component or computer system is said to be fault tolerant if it is built so that, in the event that a component fails, a backup mechanism or component may take its place right away without interrupting service. When one or more components fail, a highly fault-tolerant system may still function at the same level of performance. It is a system's capacity to recover gracefully from an unexpected hardware or software failure. To ensure the dependability and availability of crucial services and the proper execution of applications, fault tolerance is a fundamental problem. Fault tolerance is an excellent strategy that gives us higher reliability by using a combination of hardware, such as communication hosts, CPUs, and resources.

Faults can be classified into one of three categories:

- (a) Transient faults: These defects appear only once before disappearing. For instance, when a network communication is redelivered, it eventually reaches its intended recipient.
- (b) Intermittent faults: An intermittent fault is characterised by an occurrence, disappearance, reoccurrence, and disappearance of the fault. These are some of the most aggravating component flaws. An example of a flaw is a loose link.
- (c) Permanent flaws: This kind of failure is persistent, meaning it won't go away unless the broken part is fixed or replaced. Examples include power supply burnout, software flaws, and disc head accidents.

Fault Tolerance can be achieved with the help of two ways. These ways are as follow:

Recovery

Redundancy

A thorough investigation of failures, failure causes, and system responses to failures is necessary for a fault-tolerant system design. Before the design process begins, such learning should be approved out in detail and must continue to be considered.

Planning is crucial if you want to avoid failures. To get the desired level of dependability, a designer must assess the situation and determine the failures that must be tolerated. It's critical to estimate the real failure rate for each potential failure in order to maximise fault tolerance

4) Problem Statement

In order to produce a computational output much more quickly than with a single computer, distributed computing uses a network of numerous separate computers, each of which completes a specific component of the total operation. The master node of a distributed system divides the overall task into several sub-nodes, and these sub-nodes carry out the task in accordance with the instructions provided by the master node. Due to the growing complexity of distributed systems brought on by user needs, monitoring and modifications are required to maintain them functional. The use of mobile agent technologies has given rise to a new distributed systems paradigm. Without any solid support in the network, mobile entities connected by a wireless link frequently experience network disconnections with one another. Consequently, the topology of the network will suddenly alter. Due to the likelihood of mistakes in a mobile distributed network is relatively high due to the aforementioned factors.

Node failure problem occurred when mobile nodes moved from one location to another while a task was being executed. Reallocating the work to the most trustworthy candidate node is necessary to address this issue, which is brought on by node mobility.

Literature Survey

In order to maximise system reliability, G Attiya et al. paper from 2006 addresses the issue of work allocation in heterogeneous distributed systems.

Task allocation method is a crucial step in Distributed Computing Systems (DCSs), according to P K Yadav et al. (2011), in order to reduce system costs.

According to Shan Zhang et al. (2009), the problem of interoperating distributed and heterogeneous data was solved using a combination of the description function of metadata, the distributed computation function of web services, the centralised storage capability of databases, the GIS server component function of ArcGIS Server, and the spatial database engine function of ArcSDE.

Vinod Kumar and colleagues (2012) maximise the reliability of heterogeneous distributed systems a computing environment where a random node could permanently fail.

For heterogeneous multi-agent systems with matching uncertainties and a leader whose control input might be nonzero and unavailable to any followers, Zhongkui Li et al. (2013) explore the distributed control problem.

In order to provide fault tolerance in mobile agent systems, Rajwinder Singh et al. (2013) offer a unique parallel check pointing technique antecedence graph approach. The suggested approach can considerably minimise the time latency for a global check pointing procedure by capturing the dependence relation among mobile agents in antecedence graphs and check pointing them to stable storage during the usual computation message transmission. In addition, it restricts the number of MAs that must take their checkpoints to a minimum and reduces the number of mobile agents that must be blocked during identification, which enhances system performance as compared to earlier graph-based methods.

Proposed Methodology

A distributed computing system is made up of numerous independent computers, each of which completes a portion of the overall task in order to produce results more quickly than a single computer. One of the issues with a distributed system is mobility. Although mobile agents provide much greater flexibility, they also come with certain additional costs and problems that must be resolved, including dependability, security, and fault tolerance, in order to successfully adopt mobile agent technology for the creation of practical applications. The master node in a distributed system divides the overall task among slave nodes, however when the mobile node moves while the task is being executed, the task needs to be reallocated.

The node's mobility is the cause of a node failure issue. In the current algorithm, the master node divides the job and distributes it to the candidate nodes when it receives it. The failure rate and shortest execution time are taken into consideration when choosing the candidate nodes. Here, the master node sets a threshold value that takes into account two variables: failure rate and maximum execution duration. The master node chooses as candidate nodes the sub nodes with an execution time and failure rate that are equal to or lower.

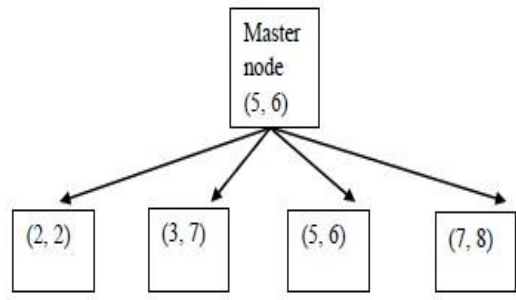


Fig. 3: Selection of candidate node

In fig 3 master node has set threshold value of Maximum failure rate and maximum execution time is (5, 6). After that failure rate and execution time of each candidate nodes is entered.

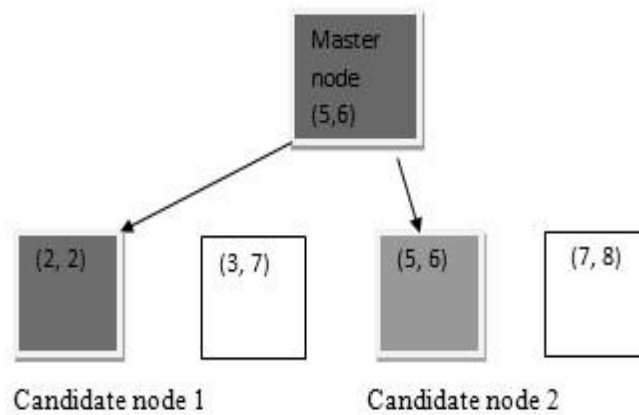


Fig. 4: Candidate node are selected according to failure rate and execution time

The candidate node in Fig. 4 is chosen if its value is equal to or less than this threshold value. N1 will be a candidate node because its value is less than the threshold value. N2 won't be selected as a candidate node because it has one parameter fewer and two that are high. N3 will be chosen as candidate node 2 if its value is equal to the threshold. Again, N4 will not be chosen as a candidate node because its value is higher than the cutoff. Following the selection, the candidate nodes will begin working on their jobs. In this instance, we will also enter the amount of tasks. If someone moves while the work is being completed, the task will fail at that time To resolve this issue An innovative method has been put out to solve the issue of node mobility-related failure.

The master node time and the amount of jobs that arrive at the master node have been introduced as new parameters to the proposed algorithm. The resultant time to join the end users is the master node time. The effectiveness of each candidate node is determined for node collaboration using the execution time, failure rate, master node time, and the amount of jobs. The efficiency of the remaining candidate nodes is determined when a candidate node moves in between completing a task and leaving the task unfinished, and the node with the highest efficiency is given the unfinished task. then, when the work is finished, the candidate node sends the outcome back to the master node..

Purposed Algorithm

1. Start
2. Describe the term "distributed system" with a certain number of nodes.
3. Indicate how many tasks need to be completed.
4. Type the time for the master node.
5. Type the master node's failure rate and maximum execution duration.
6. Type in each candidate node's failure rate and execution duration.
7. Choose the best candidate node for the task allocation.
8. A comparison between the master node and each candidate node is done in order to choose the best candidate node.
9. Candidate nodes will be chosen as the best nodes for task execution if they have a lower failure rate and execution time than the master node.
10. Task execution on the chosen candidate nodes begins.
11. If a candidate node moves while the task is being performed, a fault occurs and the task
12. Recovery node starts executing the task and return output. is note finished.
13. Determine each candidate node's efficiency.
14. Assign the assignment again to the candidate node that is most effective.

Flow Chart

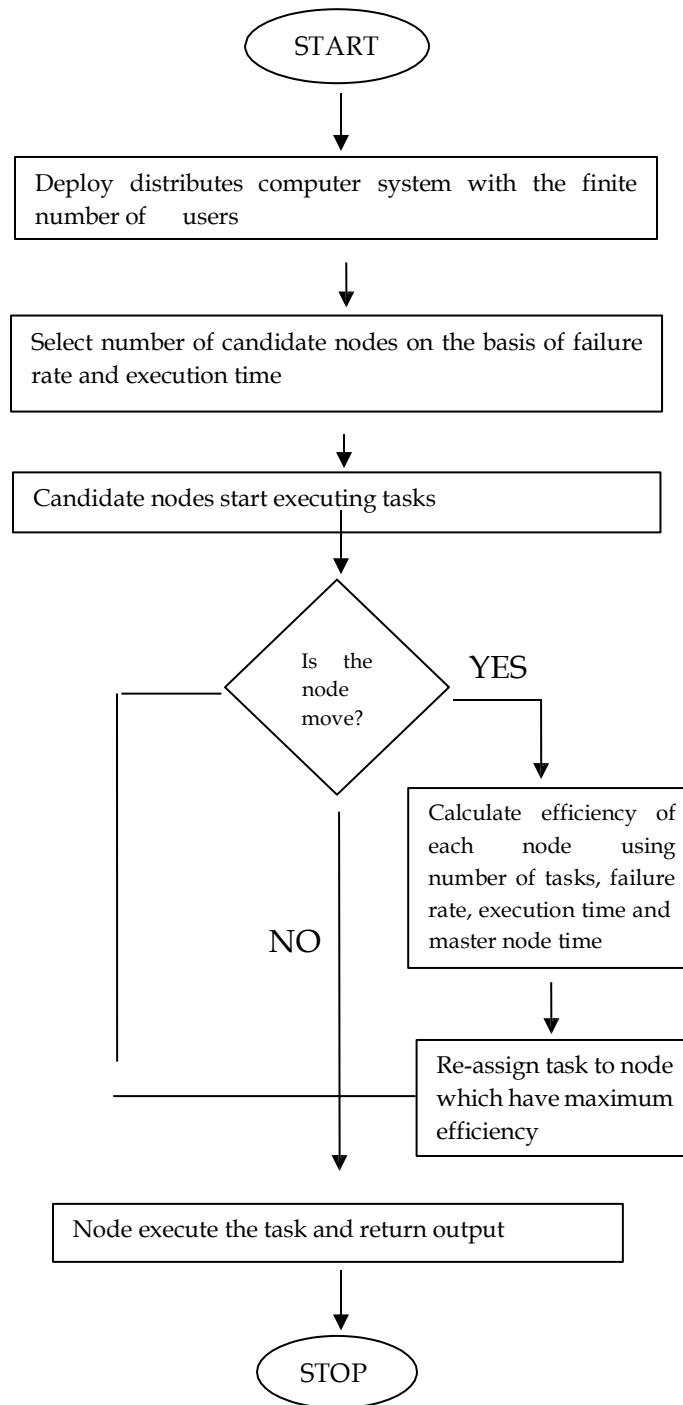


Fig. 5: Flowchart

5) Experimental results

Results of the distributed work allocation technique, which has been improved by the use of an efficiency-based algorithm, are presented in this part. The parameters of processing time, resource consumption, and energy consumption have been used to compare the proposed and existing techniques.

a. Processing Time Graph

Table 1: Comparison table of Processing time

Number of tasks	Processing time (seconds)	
	Existing algorithm	Proposed algorithm
6	32	22
10	48	40
15	55	45

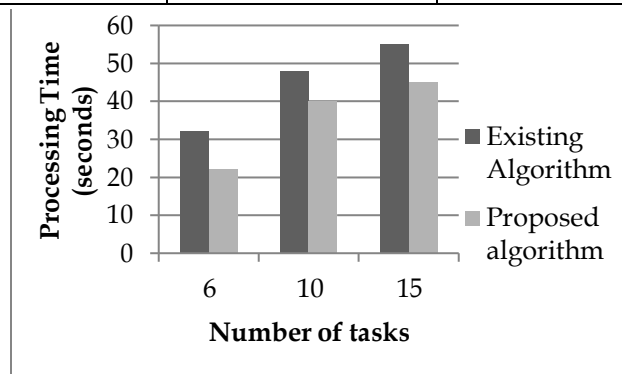


Fig .6: Processing Time Graph

Figure 6 shows the processing times for the existing situation, in which a fault occurs owing to node mobility, and the suggested technique, in which a fault is recovered. In the current circumstance, a defect has occurred, and the master node is continuing to wait for the task to be finished. The work will be completed by the suggested algorithm once it reassigns it to the best node for it, which reduces processing time in comparison to the current situation. The processing times of the proposed and existing algorithms change every time the user enters a new number of tasks, however for every input, the processing times of the proposed algorithm will be faster than those of the existing method.

b. Resource Consumption Graph

Table 2: Comparison table of Resource Consumption

Number of tasks	Resource consumption (bytes)	
	Existing algorithm	Proposed algorithm
6	16	11
10	25	20
15	31	28

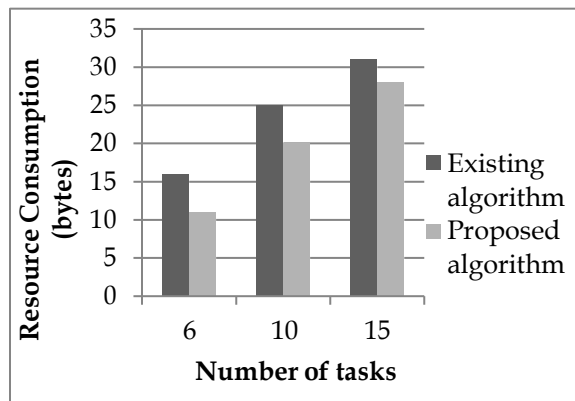


Fig. 7: Resource Consumption Graph

Figure 7 depicts the resource comparison in terms of buffer size. Resources are assigned to potential candidate nodes for task execution in the existing and planned algorithms. The existing approach has a defect that prevents the work from being completed, hence it uses more resources than the proposed algorithm because the fault is fixed by reallocating the task. The suggested algorithm's as well as the present algorithm's resource usage changes every time the user enters a different number of jobs.

c. Energy Consumption Graph

Table 3: Comparison table of Energy Consumption

Number of tasks	Energy consumption (joules)	
	Existing algorithm	Proposed algorithm
6	130	115
10	150	135
15	170	152

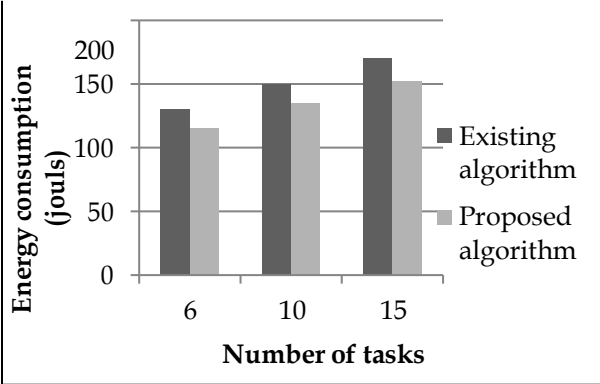


Fig.8: Energy Consumption Graph

The energy comparison between the current and suggested scenarios is presented in figure

8. According to analysis, when a network problem occurs, the master node keeps waiting for the task to finish, which results in excessive energy consumption for the network. The network uses less energy when jobs are reassigned to other candidate nodes since they are finished on schedule. Energy use rises in direct proportion to processing time increases and vice versa.

Conclusion

In this study, a novel solution is put forth to fix the network's mobility problem. The efficiency technique is used to reallocate the work to another candidate node when a node moves in the middle of doing a task and leaves it unfinished. This strategy will improve network efficiency, cut down on execution time, and conserve battery power. The number of tasks, failure rate, execution time, and the time required by the master node for fault recovery are the foundations of the suggested approach.

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Consumer Perceptions Towards Organic Food

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Abstract

Food safety, human health, and environmental issues, as well as sensory attributes like nutritional value, taste, freshness, and appearance, all have an impact on consumer preferences for organic foods. Demographic factors may be used to categorize organic clients; however, the correlation is weak. Customers also associate the production of organic food with organic practices, consideration for animal and environmental welfare, and a lack of pesticides and fertilizers. Premium prices continue to restrict consumer demand for organic food. In order to comprehend how the market for organic food could expand, the study aims to identify the reasons that are motivating individuals to consume more organic food, such as motivation.

Introduction

Food that comes from an agricultural method without using artificial pesticides and fertilisers is considered organic. The fundamentals of the farming system utilise the advantages of contemporary scientific knowledge and technologies to provide a more sustainable food supply (Institute of Food Science and Technology, 2005). In organic standards for animal husbandry, only 30 additives are permitted under specified circumstances, whereas genetically modified organisms and antibiotics are prohibited (Soil Association, 2000). Therefore, buying organic food can be viewed as an action motivated by views about the goods' potential for health, pleasant flavour, and positive effects on the environment and the welfare of farm animals. The purpose of this review is to give an assessment of the literature on the consumer attitude towards organic food. It is important to know how consumers relate to food quality and food system issues in order to explore the potentials of organic agriculture. Knowledge and public understanding influence the consumer valuation of food. Thus, consumers need clear, accurate and reliable information about organic food. Consumers believe they are more informed if information on organic food is provided and the information affects their perceptions

Preferences for Organic Food

It is crucial for marketers to understand that the shift in customer attitudes toward organic food could benefit both those who are interested in organic products and marketers who want to expand the organic market. The causes are as follows:

Knowledge

Females have less knowledge about making an online purchase, which affects their intents to buy things that are advertised and sold online Chiao & Yang (2010). They rely heavily on recommendations from others when making purchases.

Environmental Awareness

Concern for the environment has a positive impact on consumers' intents to purchase organic food (Pomsanam et al., 2014). Honkanen et al. (2006) confirm Durham & Andrade's (2005) study, which found that customers' attitudes toward the environment have a significant beneficial impact on their inclinations to purchase organic food.

Price

In their study, Lockie et al. (2002) discovered that although customers care deeply about the environment, if the price of the product is high, then consumers have a negative impact on

Buying intentions

Availability

Urban areas are good places for consumers to get organic food because it is so convenient. Similar to this, Voon et al. (2011) claimed that the availability of organic food has a detrimental impact on consumers' attitudes toward buying. According to a study by Vermeir & Verbeke (2004), fewer available items are preventing more consumers from buying organic food products.

Health Awareness

One of the main justifications given by consumers for buying organic food is the health benefits. Organic foods are pure, organic, and healthful because they don't include chemical fertilizers or pesticides. The perception of organic foods among consumers is positively impacted by health factors

Findings and Conclusion

Reflecting at the findings on types of food used, we endorse focusing interventions on enhancing the chemical protection of veggies and fruits. Also, the significance of seek attributes for food providers indicates that licensed organic produce will want to offer the identical seek cues as traditional foods. Moreover, it will likely be vital to don't forget the complexity and value of advertising and marketing an authorized product with organic inside the food merchandising sector. Recent research recounted different personal reasons inclusive of self-illustration or self-identification in eating organic product. Many of the purchaser research on organic food have taken into consideration elements that encourage purchasers for organic food dues and purchaser's profile who purchase organic foods. Foreign corporations who intend to enlarge the marketplace in their organic merchandise in growing nations might also don't forget the findings of this studies even as drafting greater powerful techniques to higher marketplace and make sure greater intake in their product. The have a look at targeted on understanding the elements influencing organic food buy aim with moderating function of awareness. The have a look at presents hints and hints for stores who're promoting organic foods. Besides this, they have a look at may be useful for the organic food producers to pick out their goal purchasers with the aid of using displaying the have an effect on of socio-demographic elements on organic food purchases. This study could be beneficial in coverage decision-making system with reference to organic merchandise. This paper will offer insights in advertising and marketing practices and method formulations.

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A Study on Mutual Funds in India

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Abstract

This article focuses on the development of the mutual fund sector in India. Its beginning, its ups and downs over the years, and tried to foretell what the long-term prospects would be for investors in mutual funds. An investment entity that pools the money of numerous investors is a mutual fund, often known as an investment corporation. The manager of the fund buys stocks and bonds with the money that has been raised. The portfolio of the fund refers to the securities that were acquired. Money market and (short-term) bond funds may have emerged as a result of limitations on competing products. This study compared and analysed the performance of various mutual fund types in India and came to the conclusion that equities funds performed better than income funds. The study also found that institutional fund managers can time their investments and that equities fund managers had strong market timing abilities, however broker operated funds did not demonstrate this capacity. Additionally, empirical research has shown that fund managers exhibit substantial timing ability and can time their investments to match market conditions.

Key words: Mutual Fund Industry, India, Equity Fund, Money Market

Introduction

A controlled collection of securities from various corporations is referred to as a mutual fund. On the shares they own, these corporations receive dividends, and when their securities are sold, they experience capital gains or losses. Shares of the mutual fund are bought by investors just like any other individual security. The earnings (dividends, capital gains or losses) of the mutual fund are dispersed to the investors in proportion to the amount of money invested, after operational expenses have been covered. Investors anticipate that a gain on one holding will offset a loss on another. Following the advice to "Don't put all your eggs in one basket," owners of mutual fund shares might collectively benefit by diversifying their investments, which may be outside of their individual financial capabilities. There are two types of mutual funds: open-end and closed-end. An open-end mutual fund is a type of flexible capital stock since it has no fixed number of shares. As shareholders buy or sell

Mutual Funds History

In 1822, Belgium became the first country to provide the modern mutual fund. This type of investment quickly became popular in France and Great Britain. Since the 1930s, open-end mutual funds, in particular, have been popular in the United States since the 1920s when they first gained traction. After World War II, mutual funds expanded significantly, particularly in the 1980s and 1990s. While GIC had formed its mutual fund in December 1990, LIC had done so in June 1989. A new era in the Indian mutual fund market began with the arrival of private sector funds in 1993, providing Indian investors a greater selection of fund families. Additionally, the first Mutual Fund Regulations, which required all mutual funds, with the exception of UTI, to be registered and supervised, were established in 1993. The first mutual fund in the private sector was registered in July 1993 under the name Kothari Pioneer, which has now merged with Franklin Templeton. With many global mutual funds opening funds in India, the number of mutual fund firms continued to rise. Additionally, the industry has seen a number of mergers and acquisitions. There were 33 mutual funds with a combined asset value of Rs. 1,21,805 Crores as of the end of January 2003. With assets under management of Rs. 44,541 Crores, the Unit Trust of India was far ahead of rival mutual funds. After the Unit Trust of India Act of 1963 was repealed in February 2003, UTI was divided into two distinct organisations. One is the Specified Undertaking of the Unit Trust of India, which as of the end of January 2003 had assets under management totaling Rs. 29,835 crores, about equivalent to the assets of the US 64 plan, assured return, and a few other schemes. The Unit Trust of India's Specialized Undertaking, which is governed by an administrator and by laws set forth by the Indian government, is exempt from the Mutual Fund Regulations.

Prospectus for a Mutual Fund

A legal document called a prospectus contains details about the mutual fund. You can learn more about the offer's conditions, the issuer, and its goals in this paper. The Securities Act of 1933, passed by the federal government in the wake of the 1929 stock market crisis, mandated that securities businesses produce prospectuses. A prospectus could appear overpowering at first. The prospectus typically contains a lot of information, is written in technical and legal language, and is lengthy and full of tables and figures. Before you invest in a mutual fund, use the information in this article to make an educated investing decision.

Pay great attention to the following crucial elements to obtain the information you require:

Investment Objective: A succinct description of the investing goals of the fund. While some funds may prioritise long-term stability, others may aim for short-term growth.

Investment Strategy: How precisely the fund intends to achieve its goals. The types of assets that the fund purchases are described in this section.

Fees and Expenses: Although mutual funds want to make money for their investors, they ultimately want to make money for themselves, just like any other business. The fees and costs that funds charge their shareholders in order to achieve this must all be disclosed in the prospectus. Each prospectus includes a table outlining the various fees and charges, along with an estimation of how the fees would affect a \$10,000 investment over a ten-year period. You can compare costs and fees among mutual funds as a result.

Account Information: Simple instructions on how to buy and sell shares as well as other account-related information are provided in this section. The prospectus will explain how to withdraw your money from the fund in addition to how to put money into it. You can learn about your options for redemption in the prospectus.

Risks: One of the most crucial portions of the prospectus deals with the level of risk the fund takes and the hazards connected to the individual investments the fund makes.

Performance: Included is data on the fund's performance during the previous ten years. Investors need to be aware that past success does not guarantee future outcomes. The fund's historical performance in comparison to an index, such as the S&P 500, is crucial. Performance of a fund is also influenced by turnover, dividend payments, and volatility of the fund.

Management: The names of the managers are listed, along with some extra details about their backgrounds and credentials. To get a feel of their previous methods and outcomes, it can be useful to discover whether or not they have managed other funds in the past and whether or not they were successful.

Mutual Fund Share Classes

Morning Star is a reputable source that categorises the majority of equities into classes or categories. Eight type designations are used: *Distressed, Hard Asset, Cyclical, Speculative Growth, Aggressive Growth, Classic Growth, Slow Growth and High Yield*. A broad category of investment qualities is defined by each label. Stocks are categorised into types based on objective financial criteria and a unique algorithm developed by Morning Star; hence, stocks within the same category have comparable economic characteristics.

Classes/Types Are:

Distressed: These businesses are experiencing significant operational issues. This could indicate a decrease in cash flow, a loss of profit, significant debt, or a combination of these.

These "turnaround" stocks might be very hazardous, but they can also contain some interesting investments.

Hard Asset: These companies' main businesses revolve around the ownership or exploitation of hard assets like real estate, metals, timber, etc. Such companies typically sport a low correlation with the overall stock market and investors have traditionally looked to them for inflation hedges.

Cyclical: Cyclical usinesses It is reasonable to anticipate that core businesses will fluctuate with the general economy. Such businesses will appear fantastic during an expansion; nevertheless, during a recession, their growth will stagnate and they may even experience a loss.

Speculative Growth: Don't count on speculative growth companies to be consistent. Their profits are sporadic at best. At worst, they incur a loss. In reality, a lot of businesses never get past speculative development and end up in bankruptcy court. They are speculative as a result. However, what makes speculative-growth firms attractive isn't their current profitability. Future financial gains. A corporation with speculative growth should eventually develop into a top-tier organisation.

Aggressive Growth: Companies with aggressive expansion exhibit a little more maturity than those with speculative growth: They record rapid growth in profits as well as sales, which indicates greater tenacity. It's time to start earning some money at this point.

Classic Growth: hese businesses are in their prime and don't need to prove much more. The top traditional growers have developed into money-making machines, producing consistent growth, strong capital returns, positive free cash flows, and rising dividends. The problem is that they are growing much more slowly than the group with fast growth.

Slow Growth and High Yield: These businesses' expansion is now just a fading memory. Due to a lack of lucrative investment prospects, the majority of them pay out the majority of their income in dividends (high payout ratios) as opposed to reinvesting the money in their companies.

Professional Management & Ranking of Mutual Funds

Professional Management: Professional managers are used by mutual funds to decide whether companies' securities should be purchased and sold. The managers of the mutual

potential rewards, the cost of buying and selling investments, and industry laws and regulations.

Ranking: Companies like Morningstar, which has an established rating system for mutual funds, score funds based on their performance overall and in comparison, to their peers. One to five stars are assigned, with five stars being the best. Typically, the quality of the fund increases with rank. For instance, Morningstar assigns mutual funds a star rating of 1 to 5 based on how well they've performed in contrast to other funds of a similar type (after adjusting for risk and sales expenses). The top 10% of funds in each Morningstar Category receive 5 stars, while the bottom 10% receive 1 star. Three, five, and ten-year ratings are given to funds, and these ratings are added together to provide an overall rating. Funds with a history of less than three years are not graded. Ratings are impartial and fully determined by a quantitative analysis of prior performance. The ratings are a helpful tool for discovering investments that merit additional investigation, but they shouldn't be interpreted as buy or sell recommendations.

Mutual Fund Annual Report

Every year, mutual funds send an Annual Report to each investor. The fund's financial statements, a list of its holdings, and an explanation from the management of the fund as to why the fund performed as it did the prior year are all included in the annual report.

Conclusion:

Without a doubt, the Indian economy is likely to return to a high growth path in a few years with the structural reform policies. Therefore, it is necessary for mutual fund firms to enhance their knowledge and equipment. However, the success of the mutual fund would rely on how well the proposals were put into practise. Regarding the mutual fund investor, we believe that the investor must simultaneously develop two critical abilities for effective investing: a sense of timing and investment discipline.

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Examine the Growth Rate of Punjab State Before and After Liberalization Period and Health Scenario During this Period

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Abstract

After the post-liberalization period, almost in every five-year plan, the Punjab economy's growth rate was lower than India's growth rate. After the post-liberalization period, the data scientist registered the Punjab economy's slowdown in all its three sub-sectors: primary, secondary and tertiary. The agriculture sector had suffered badly during the slowdown period. After the Eighth five-year plan (1997-02), Punjab had witnessed a continuous slowdown in its economic growth due to the decline in agriculture income and an increase in its production cost. Intensive use of technology, insecticides or pesticides in the farming sector polluted the state ecology that can negatively impact the health of the people of Punjab. The study examined the scenario of before and after liberalization period and its impact on the health sector of Punjab.

Keywords: Health sector of Punjab, economy, growth rate, GDP

Introduction

During the period of 1970s and 1980s, the Punjab economy had seen a magnificent growth rate. In 1970-79, the compound growth rate (CAGR) of Punjab from all sectors was 5.1%, which was above the all-India average of 3.6% per annum (See table 1.). In the Sixth five-year plan from 1980-85, Punjab's growth rate was recorded 5.3% per annum, which was lower than India's growth rate of 5.7% per annum. Similarly, during the Seventh Plan period from 1985-90, the Punjab economy recorded a 6.0% growth rate per annum compared to India's 5.8% annual growth rate (Khanna, 2011).

As seen in the table 1, the Punjab economic growth rate in the Eighth five-year plan (1992-97) was 4.36%, and India's growth rate was 6.8% at this time. In the Ninth (1997-02), Tenth (2002-07), and Eleventh (2007-11) plan period, economist measured the Punjab growth rate 3.9%, 5.1%, and 6.9% per annum compared to 5.5%, 7.8% and 9.0% growth rate of the Indian economy during this period. In the Twelfth five-year plan, the quality of growth of the Punjab

From the period of 2011-2017, the Punjab economy also witnessed a decline in its growth rate at 5.65% compared to the national average growth rate of 6.7%.

Table.1 Growth rate of Punjab vs India during five-year plan period

Period	Punjab (%)	India (%)	Base price
1970-79	6.8	5.1	1970-71=100
1980-85	5.3	5.7	1980-81=100
1985-90	6.0	5.8	1980-81=100
1992-97	4.8	6.8	1993-94=100
1997-02	3.9	5.5	1993-94=100
2002-07	5.1	7.8	1999-00=100
2007-12	6.9	9.0	2004-05=100
2012-17	5.6	6.7	2011-12=100

Source: GOP. Statistical Abstract of Punjab (Different Years) and GOI, Twelfth five-year plan, 2012-17, Vol. I

The Investment-GDP ratio of Punjab remained below 20%, which was the lowest among India's fourteen significant states (CDEIS, 2012). In the national-level policy, Punjab remained in the back and not gets any simulation package from the central governments. Due to this, Punjab faced a continuing slowdown in its economic growth rate (Singh, 2015). That is why Punjab has slipped down in its per capita ranking from number one in 1991-92 to the sixth position in 2009-10 (GOI, 2013 a, b). All this happened because Punjab was not getting anything from the central pool after the globalization era started in India (Singh, 2006; Singh and Singh, 2016). According to the report of the Industrial Entrepreneur Memorandum, Punjab's proposed investment from the central bank was Rs4477crore (Maharastra Rs70181crore, Madya Pradesh Rs10563crore), and approved investment was Rs. 1042crore (Maharastra Rs7509crore, Madya Pradesh Rs2157crore) in 2012, which was lower than the other states of India (IEG, 2018). All this is shown that after implementing India's economic reforms, the Indian economic growth rate has accelerated. Still, the Punjab economy didn't benefit from it, and it can experience the continuing economic slowdown in this period.

When we discussed the NEP, we saw that it had impacted the country's health sector in many ways. The NEP provided independence to the country's status in economic affairs such as transaction of goods and services from one state to another, movements of people, ideas and knowledge, and the health sector's spreading of new technology at a stunning pace. The policy's positive outcomes come in the form of better health facilities, increased life

expectancy, and easy access to modern medicine and technology. On the other hand, it has increased the cost of treatment and raised the dependence on drugs and technology of the people of Punjab. With the NEP implementation, India also got a positive response from the world level institutions such as the World Bank (WB) or World Health Organization (WTO), which favours the Indian health system in many ways. India had received more pharmaceutical products and health professionals. The output of the pharmaceutical products had increased during this period. With the use of the internet, medical tourism had increased. Modern technology had been available easily in every part of the country. During this period, corporate houses also entered the health sector and established modern hospitals. On the other side, people's free movement raised the chances of spreading diseases in the different parts of the country and across the country. The bird flu was an example in the past, and the COVID-19 pandemic is the most recent.

Private corporate houses' investment in the health sector restricted the governments to improve the public health care system, which provided the facilities to the low section of society and play an essential part in the developing nation (Gill *et al.*, 2010). In Punjab, industry and agriculture both contributed to depleting the resources of Punjab. The industrial sector has damaged Punjab's air and water by spreading the smoke into the air and contaminating the rivers or canal water by mixing their untreated disposal. Similarly, the farming sector depleted groundwater by using insecticides/pesticides in their fields. All these factors directly or indirectly affected the health of the people of Punjab. Punjab's people witnessed several new diseases, which were earlier the developed countries' diseases such as anxiety, depression, cancer, heart alignments, etc. Other than that, the use of alcohol, tobacco, or packaged food also negatively affected people's health.

After implementing the NEP in India, the Indian economy has been collaborating with a global economy and following international institutions such as WB or WHO. The impact of the policies had seen in the public sectors. After adopting the NEP policy, the state funding to the public health care system had decreased continuously, not in Punjab but all of India's states. In India, all the schemes came from the WB or WHO implemented and more focus given to the private players or public-private partnership structure. In a nutshell, the reforms initiated in the health sector in the light of NEP in India revolved around cutting the state's investment in the public health care system by permitting them to open private hospitals. Increases in hospitals' charges of treatment, shrinking some of the services available earlier in the public hospitals and growing dependence on technology in health services, mostly known in private hospitals.

Conclusion

Some of the researchers raised their concerns about shifting health policies, particularly the cutting investment in the public health care funds, which may adversely affect the primary health care facilities required by the state or nation's poor people. The lack of funds had disrupted various government schemes. On the other side more freedom given to private players, without any set guidelines. Due to this, the quality of treatment seriously compromised in rural and urban areas. In such a situation, the state governments could not fulfil their promises to the state's people and adversely affected the equity principle by not providing the required health facilities to them. Surprisingly, all the central governments' policies from time to time in the Indian health care system implemented by the Punjab governments also (Singh, 2015; Gill *et al.*, 2010). It means the poor people who lacked resources, income, and employment could not afford private hospitals' health expenditure, particularly when they need indoor treatment from private hospitals.

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Challenges and Benefits of Online Marketing

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Introduction:

Presently it's undeniably true that what we call 'showcasing' has gone through significant changes over the new years (Petkus, 2010), and the critical job in this change has been played by web. Web "alludes to the actual organization that joins PCs across the globe. It comprises of the foundation of organization servers also, wide region correspondence joins between them that are utilized to hold and move the tremendous measure of data on the internet"(Chaffey, 2000: 12). A few examinations have tended to the manner by which presentation of web have reshaped the design and execution of various areas, for example friendliness, travel and the travel industry (Xiang et. al 2008; Beldona 2005; Gretzel, et al. 2006; Kah, et al. 2006; Pan and Fesenmaier 2006; MacKay et al 2005; Weber and Roehl 1999), wellbeing and medication (Rupoert, 2001; Datta, et al., 2008; Gadish, 2007), showcasing training (Hollenbeck, et al. 2011; Eastman and Swift, 2001; Kynama what's more, Keesling, 2000, and so on. Presentation of web has changed the principles and showcasing practioners have no way however to stick to it (scott, 2009:8). Advertising is only one of various fields have been, truth be told considerably changed by web based mechanical advancements. Hallway keeps up with that "Data and correspondence innovation, as it is presently known, has come to assume a vital part in all components of the showcasing blend, and the new term perceives the significance of correspondence in the connection point between a business and its clients" (2004). The most unmistakable point with respect to the appearance of Internet to the middle phase of business and showcasing is that Internet isn't viewed as just another channel of advancement, another sort among other customary, pre-Internet kinds of advertising labor and products. Very opposite, it has achieved a defining moment, a total shift to another plan of action, which results in an inescapable reconceptualization of the actual idea of showcasing (Deighton 1997; Wind and Rangaswamy 2001). This new comprehension is unavoidable since new correspondence innovations have encouraged a new dynamic climate in which advertiser situated, top-to-down, one-sided approach gives its place to a client situated, base to-up, equal cycle.

What is Online Marketing:

Internet showcasing comprises of measures and exercises to advance items and administrations and assemble associations with clients over the Internet. Burrett (2008) comprehends on the web showcasing as —carefully focusing on clients and inspiring them to interface with you while they're engaged with the generally private, cozy medium at any point concocted. The most exhaustive definition has been enunciated by Chaffey (2007), he characterizes web based promoting as —Applying Digital advances which structure online channels (Web, email, information bases, in addition to versatile/remote and advanced TV) to add to promoting exercises pointed toward accomplishing productive securing and maintenance of clients (inside a multi-channel purchasing interaction and client lifecycle) through further developing our client information on (their profiles, conduct, worth and dependability drivers), then conveying incorporated designated correspondences and online administrations that match their singular necessities". As this relationship idea definitions show web based promoting spin around connection and building relationship with clients, a point which segregates it from customary, disconnected showcasing.

Different Methods of Online Marketing

Online Advertising

On the web publicizing like TV promotions utilizes the component of interference. Be that as it may, it involves it in a considerably more imaginative. In opposition to TV commercial, online ad doesn't compel the beneficiary to focus on the limited time harmony, yet it attempts to convince or draw in s/he to do as such, in light of the fact that as opposed to coming in stretches it is put along or among other non-showcasing contents. The now engaged web beneficiary actually has the ability to overlook the promotion and it is absolutely dependent upon her/him to click or not. Internet publicizing, at times called show promoting, utilizes various strategies to show an advertising message on the web.

Email-Marketing:

Email advertising, involving email for sending special messages to web clients, has been viewed as one of the more powerful techniques for internet advertising. A few scientists have revealed insight tons of leading internet promoting along these lines. In such manner Peppers and Rodgers (2000) among its advantages highlight "high reaction rates" and "low expenses" of email showcasing and trust that this benefits "are quickly turning email showcasing into a significant tool". Regardless of these advantages email advertising experiences inadequacies. One these issues are that web-based clients can without much of

a stretch disregard the got promotions and, surprisingly, some email clients would choose to place them in the spam envelope.

Social Media Marketing:

Online entertainment has changed each part of our life decisively. It has, as a matter of fact turn into "the strategy for articulation in the 21't 100 years, empowering us to communicate our conviction, thoughts and way in a flat-out new way ". Past impacting our approach to directing public activity, virtual entertainment gives universe of showcasing with extraordinary open doors and "likewise gigantically affect organization, where they haveunderstand that without a well thought out plan and web-based entertainment technique they get no opportunity to hang out in the quickly changing advanced opportunity" (Saravanakumar and SuganthaLakshmi, 20012: 44). Online Entertainment advertising, consequently, has become progressively vital without thinking about which promoting can't understand its goals. Online entertainment particularly is promising for independent companies since expands their cutthroat edge. This new compensating kind of promoting, web-based entertainment showcasing, can be effortlessly characterized as" a term used to portray the most common way of helping site traffic, or brand mindfulness, using virtual entertainment organizing destinations... most online entertainment showcasing programs generally spin around making extraordinary substance that stands out and urges the watcher to impart it to their companions and contacts on informal communities. Your business message spreads starting with one client then onto the next and influences with the client in a more grounded manner in light of the fact thatit seems to start from a confided in source, rather than the brand, business or organization itself"

Advantages of Online Marketing:

Empowering effect:

One of benefits of web-based promoting is connected with its empowering impact particularly on private companies since "web could degree at any point market reach and functional proficiency of little and medium interprises (SMEs)"(Dholekia and Kshetri, 2004: 311). Web makes a sort of democratized, truth be told climate in which promoting has been rebuilt so that even private ventures are given a great opportunity to advance and brand their items on a significantly bigger scope.

Trackability:

One more part of the web-based advertising is its chance of following. "The track-capacity of, truth be told Web Marketing is quite possibly of its most prominent resource" (2014). Web

empowers estimation of everything taking put on it. In this way, the quantity of snaps that a specific limited time piece gets and measure of site traffic is handily estimated. In this manner the advertiser is empowered to follow the guests to her/his site and grasp their way of behaving. Web likewise permits the organizations to see if their missions are working or not, what sort of clients are keen on their items, from where?

24 Hours / Seven Days Availability:

Web presently can furnish clients with convenient data because of its accessibility 24 hours every day, 7 days per week (Lane, 1996). In this way, because of the foundation of online shops, clients are currently ready to secure data and shop online any season of day or night they wish and like. So there stay no time constraints in such manner in light of the fact that web-based organizations have no extraordinary shutting and opening times. Individuals might visit actual business sectors subsequent to looking through web or the alternate way round they can surf web at cutthroat costs subsequent to visiting actual stores.

Challenges of Online Marketing:

Lack of Trust:

Firmly related with the issue of safety and protection is the issue of absence of trust on the part of clients which has been perceived an extraordinary test on the method of internet promoting development. Furthermore, it is the motivation behind why "online trust is filling in significance as a subject of study and its effect on web promoting procedures is increasing"(Urban et al, 2009: 179). Bart et al (2005) characterize trust in virtual climate as follows: "online trust incorporates customer impression of how the website would follow through on assumptions, how authentic the site's data is, and how much certainty the site orders" (134). Today regardless of the quick development of online exchanges a few groups actually question electronic techniques for paying despite everything have question regardless of whether the bought things will be conveyed.

Security and Privacy:

Data security is among significant themes to be thought about in the present developing electronic world. Clear an adequate number of these days' clients' information can undoubtedly be imparted to other organizations regardless of their authorization. Besides their more pivotal individual information, for example, usernames furthermore, passwords are not safe from programmers. One more related issue is spas and spring up adds which considered by greater part of online clients an example of interruption of security

Conclusion:

Web has altered each part of life including economy and promoting. Presenting significant strategies and techniques for internet promoting, this study has revealed insight upon potential open doors and difficulties of Internet. The significant benefits web has been its Empowering impact, Elimination of geographic hindrances, 24 hours/seven days accessibility, Cost-affectivity, Trackability, and Personalization. Nonetheless, execution of Internet in the field of showcasing includes extraordinary burdens, for example, Genuinely honest issue, Lack of eye to eye contact, Security and Privacy, Lack of trust. Except if these double normal for Internet have not been thought about, it can't be sent for its full potential benefit. A web based promoting system informed by experiences from such a thought would ensure its monetary targets.

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Overview on Business Cycles

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Introduction

Business cycles are characterized by boom in one period and collapse in the subsequent period in the economic activities of a country. These fluctuations in the economic activities are termed as phases of business cycles. The fluctuations are compared with ebb and flow. The upward and downward fluctuations in the cumulative economic magnitudes of a country show variations in different economic activities in terms of production, investment, employment, credits, prices, and wages. Such changes represent different phases of business cycles.

Prof. Haberler has said – “The business cycle in the general sense may be defined as an alternation of period of prosperity and depression of good and bad trade.”

The business cycle is the natural rise and fall of economic growth that occurs over time. Each business cycle has four phases. They are expansion, peak, contraction, and trough. The duration of business cycles can be anywhere from about two to twelve years, with most cycles averaging six years in length.

The different phases of business cycles are shown in Figure

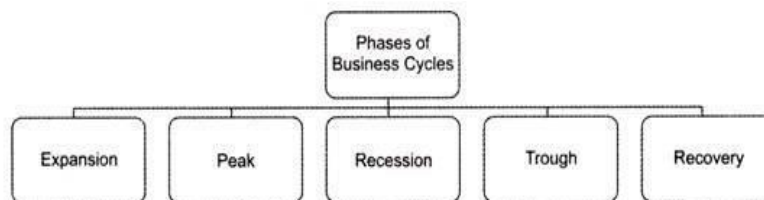


Figure-1: Different Phases of a Business Cycle

There are basically two important phases in a business cycle that are prosperity and depression. The other phases that are expansion, peak, trough and recovery are intermediary phases.

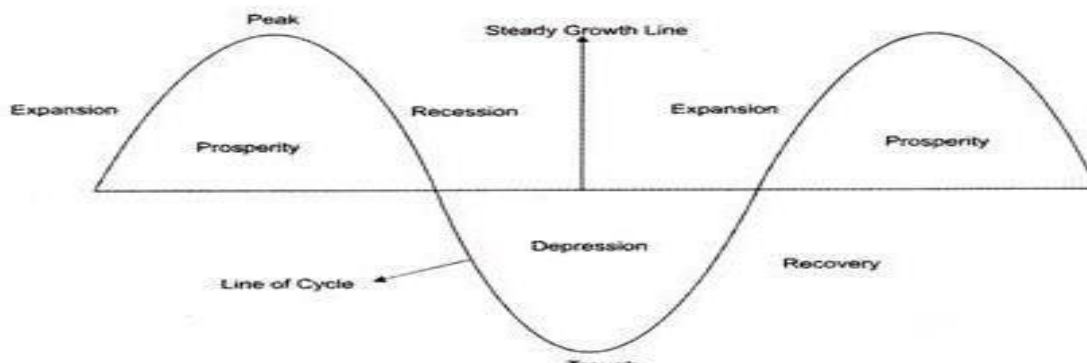


Figure-2 shows the graphical representation of different phases of a business cycle:

As shown in Figure-2, the steady growth line represents the growth of economy when there are no business cycles. On the other hand, the line of cycle shows the business cycles that move up and down the steady growth line. The different phases of a business cycle (as shown in Figure-2) are explained below.

1. Expansion:

The line of cycle that moves above the steady growth line represents the expansion phase of a business cycle. In the expansion phase, there is an increase in various economic factors, such as production, employment, output, wages, profits, demand and supply of products, and sales.

In addition, in the expansion phase, the prices of factor of production and output increases simultaneously. In this phase, debtors are generally in good financial condition to repay their debts; therefore, creditors lend money at higher interest rates. This leads to an increase in the flow of money.

Main characteristics are: -

1. Prices rise very high.
2. There is expansion in bank credit.
3. Traders and industrialists earn huge profits.

In expansion phase, due to increase in investment opportunities, idle funds of organizations or individuals are utilized for various investment purposes. Therefore, in such a case, the

2. Peak:

The growth in the expansion phase eventually slows down and reaches to its peak. This phase is known as peak phase. In other words, peak phase refers to the phase in which the increase in growth rate of business cycle achieves its maximum limit. In peak phase, the economic factors, such as production, profit, sales, and employment, are higher, but do not increase further. In peak phase, there is a gradual decrease in the demand of various products due to increase in the prices of input.

The increase in the prices of input leads to an increase in the prices of final products, while the income of individuals remains constant. This also leads consumers to restructure their monthly budget. As a result, the demand for products, such as jewellery, homes, automobiles, refrigerators and other durables, starts falling.

3. Recession:

As discussed earlier, in peak phase, there is a gradual decrease in the demand of various products due to increase in the prices of input. When the decline in the demand of products becomes rapid and steady, the recession phase takes place. In recession phases, all the economic factors, such as production, prices, saving and investment, starts decreasing. Generally, producers are unaware of decrease in the demand of products and they continue to produce goods and services. In such a case, the supply of products exceeds the demand. Over the time, producers realize the surplus of supply when the cost of manufacturing of a product is more than profit generated. This condition firstly experienced by few industries and slowly spread to all industries.

Main characteristics are: -

1. Prices begin to fail.
2. Workers are rendered unemployed.
3. Fall in income and output.

This situation is firstly considered as a small fluctuation in the market, but as the problem exists for a longer duration, producers start noticing it. Consequently, producers avoid any type of further investment in factor of production, such as labor, machinery, and furniture. This leads to the reduction in the prices of factor, which results in the decline of demand of inputs as well as output.

4. Trough:

During the trough phase, the economic activities of a country decline below the normal level. In this phase, the growth rate of an economy becomes negative. In addition, in trough phase, there is a rapid decline in national income and expenditure.

In this phase, it becomes difficult for debtors to pay off their debts. As a result, the rate of interest decreases; therefore, banks do not prefer to lend money. Consequently, banks face the situation of increase in their cash balances.

Main characteristics are: -

1. Unemployment increases.
2. Price level falls.
3. Demand for consumer goods falls.

Apart from this, the level of economic output of a country becomes low and unemployment becomes high. In addition, in trough phase, investors do not invest in stock markets. In trough phase, many weak organizations leave industries or rather dissolve. At this point, an economy reaches to the lowest level of shrinking.

5. Recovery:

As discussed above, in trough phase, an economy reaches to the lowest level of shrinking. This lowest level is the limit to which an economy shrinks. Once the economy touches the lowest level, it happens to be the end of negativism and beginning of positivism.

This leads to reversal of the process of business cycle. As a result, individuals and organizations start developing a positive attitude toward the various economic factors, such as investment, employment, and production. This process of reversal starts from the labor market.

Consequently, organizations discontinue laying off individuals and start hiring but in limited number. At this stage, wages provided by organizations to individuals is less as compared to their skills and abilities. This marks the beginning of the recovery phase.

Main characteristics are: -

1. Employment increases.

In recovery phase, consumers increase their rate of consumption, as they assume that there would be no further reduction in the prices of products. As a result, the demand for consumer products increases.

In addition, in recovery phase, bankers start utilizing their accumulated cash balances by declining the lending rate and increasing investment in various securities and bonds. Similarly, adopting a positive approach other private investors also start investing in the stock market as a result, security prices increase and rate of interest decreases. Price mechanism plays a very important role in the recovery phase of economy. As discussed earlier, during recession the rate at which the price of factor of production falls is greater than the rate of reduction in the prices of final products.

Therefore, producers are always able to earn a certain amount of profit, which increases at trough stage. The increase in profit also continues in the recovery phase. Apart from this, in recovery phase, some of the depreciated capital goods are replaced by producers and some are maintained by them. As a result, investment and employment by organizations increases. As this process gains momentum an economy again enters into the phase of expansion. Thus, a business cycle gets completed.

Impact

The business cycle has numerous impacts on organizations. These include:

- changing demand affecting profitability
- fluctuating staffing levels requiring recruitment or redundancies
- the need to alter production levels relative to demand
- the capability to expand or rationalize operations as necessary

Example:

Recession and the USA Economy

The USA economy is in a recession when real output declines in two successive quarters. An economy goes into recession when there is a decline in a country's real Gross Domestic Product (GDP) for two or more successive quarters of a year. According to Former U.S. Federal Reserve Chairman Alan Greenspan, American economy may slip into recession by the end of the year. The USA economy grew at a surprisingly strong 3.5% rate in the fourth quarter of 2006, up from a 2% rate in the third quarter. USA budget deficit, which for 2006

The September 11 terrorism attack has aided to the retrenchment of economic activity and this has also affected the level of confidence in businesses and consumers. In 2000, consumer debt growth of 8.6% compared with real disposable income growth of 4.8%. During the first quarter of 2006, private household debt grew to 11.6% annually compared with zero real disposable income growth.

The thriving technology in the USA led to a large number of investments in information processing equipment and software resulting in high equity values which also resulted in a decline by the second quarter of 2000. In October 2001 employment fell by 439,000 jobs, and unemployment rate soared from 4.9% to 5.4%. Over 500,000 jobs were lost in the recession and a further one million jobs were destroyed in the weak “job-loss” recovery from November 2001 to June 2003. People who lived below the poverty line jumped from 31.06 million to 34.06 million by 2002.

This recession could have been avoided; however, the argument against government intervention using discretionary fiscal policy to tackle recession accentuates the long-time lags involved in altering fiscal policy in USA. There was proof in 2000 that the USA economy was slowing. Congress passed a tax cut in 2001, but it took Congress until March 2002 to pass the Economy Recovery Act to provide further inducement to the economy.

Challenges and Opportunities in the Field of Rural Marketing with Reference to Punjab

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Abstract

Marketing executives are spreading out and identifying the strengths of the huge rural markets as they aim to extend their markets because urban markets are becoming saturated for a number of consumer goods categories and because rural incomes are increasing. India's rural market has begun to demonstrate its potential, yet these areas face difficulties that call for effective methods. This essay contributes to illuminating various opportunities and difficulties in Punjab state's rural marketing sector. For the purpose of this article, we used secondary data to identify distinct opportunities and challenges.

Introduction

The process of defining, anticipating, and knowing the wants of the client and organising all of the company's resources to meet those demands is referred to as marketing. In actuality, the reason for the company's existence is to satisfy the demands and desires of its customers. Therefore, understanding consumer behaviour is essential for a company to accomplish its marketing objectives. The actions, procedures, and social interactions that people, groups, and organisations engage in when looking for, acquiring, utilising, and ultimately engaging with goods and services are collectively referred to as consumer behaviour. An organisation can find better and more effective ways to please its customers by studying and being aware of the motivations driving consumer behaviour. It facilitates the choice of appropriate sales and advertising tactics and the more effective planning of marketing initiatives.

Marketing executives are spreading out and identifying the strengths of the huge rural markets as they aim to extend their markets because urban markets are becoming saturated for a number of consumer goods categories and because rural incomes are increasing. In India, the rural market first began to demonstrate its potential in the 1960s. The 1970s and

forward-thinking businesses, such as Hindustan Lever, Philips India, Asian Paints, Singer, and Larsen & Toubro, are recognised for their marketing orientation. But, by Generally speaking, we still need to understand the rural consumer, his habits, attitudes, and behaviour, especially from a marketing perspective.

Rural Marketing:

The term 'rural marketing' used to be an umbrella term for the people who dealt with rural people in one way or other. This term got a separate meaning and importance after the economic revaluation in Indian after 1990. "Rural Marketing is defined as a function that manages all activities involved in assessing, stimulating and converting the purchasing power of rural consumers into an effective demand for specific products & services and moving these products & services to the people in rural areas to create satisfaction and a better standard of living and thereby achieving organizational goals" (Iyer, 2010).

Methodology:

This study has been put together as a generic study and is only based on secondary data and findings. Studying the difficulties and potential in Punjab's rural marketing is the main goal. A secondary goal is to get knowledge of Punjab's rural marketing.

Review of Literature:

Rural markets have undergone a noticeable change recently, with improvements in the population's consumption habits, purchasing power, income levels, and literacy rates. According to the 2011 census, there were 12673 villages in Punjab, home to 17,316,800 people, or 62.7 percent of the state's total population. As a result, Punjab's rural market is significantly larger than its urban market. The majority of rural Punjab is literate, with the literacy rate there being 71.42 percent, according to the 2011 Census.

According to Mr. K. Phanindra Kumar and Mr. S. Swamy (2013), the future of markets is likely to be in the rural market. For many products, urban marketplaces are become more and more competitive. They are even saturated in some circumstances. Rural markets, on the other hand, present chances for expansion. The market of the new millennium is the rural one. The rural market is rapidly growing in size. Both exciting and difficult, the rural market is both. Due to its size, it gives a wide range of possibilities. Markets are often said to be created, not discovered; this is particularly true in India's rural market.

Pardeep Kashyap, CEO, MART, says "The majority of our population is based in tier III, tier IV cities, and villages, therefore rural India has cash on hand and is not constrained by EMIs or loans. The time is ideal to enter the rural market.

Thakur, Anand hundal, B.S (2008) According to his research, consumers in rural Punjab prefer washing machines as a sign of social status. The rural population appears to be quite concerned with upholding their social status. They do not see washing machines as being essential.

Ravinder, H. Dholakia, Manish, B. Pandeya and Payal M. Pateriya: In rural Punjab, the anticipated per capita income for the 2011–12 fiscal year was Rs 73417, compared to just Rs 12492 for the previous fiscal year.

Rural Market Status in Punjab:

Punjab has a significant boost in agricultural output as a result of the green revolution. Only 33.89 lakh tonnes of food grain were produced in 1965–1966, but that number rose to 119 lakh tonnes in 1971–1972 and 247.7 lakh tonnes in 2003–2004. The development of rural markets is further facilitated by the increase in production, which raises the income of the rural population.

The rapid technical advancements that are taking place also contribute to the growth of the rural market. The rural population has demonstrated little desire to reduce their expenditures on consumption, construction, or weddings; Punjabis are renowned for throwing lavish weddings in both urban and rural areas. Rural residents have cash on hand and are not constrained by EMIs or loans. For the right goods, they are willing to pay the correct amount. These people desire higher-quality products as well as cheaper ones. The mobile phone industry has the highest penetration in this market. Mobile phones have been discovered to be a tool for farmers' success.

Opportunities for Marketers in Rural Punjab

1. Unexploited Market:

A significant portion of the rural market is still untapped, which presents marketers with a fantastic opportunity. Branded goods and service businesses have a fantastic opportunity to capitalise on this market.

2. Industry Size:

More over 17,000,000 people live in Punjab's 12673 villages, which account for 62.7 percent of the state's total population. It implies that Punjab's rural market is larger than its urban market.

3. Variation in Income:

Numerous initiatives, such as the Green Revolution, Kissan Cards, and NREGA, were implemented in rural regions as part of the Indian government's efforts to improve the rural sector. A lot of private businesses have also given farmers chances to adopt contract farming and boost their revenue.

4. Accessible Market:

Although development in rural regions is moving at a very slow pace, the majority of Punjabi villages are still connected by a road and rail network, regardless of the state of the roads. The major metropolitan centres of Punjab are connected to the rural market, making it simpler to sell goods.

5. Market Saturation in Cities

For some consumer products, the urban market is becoming saturated, making it impossible to expand there. In this situation, marketers' greatest chance to boost product sales is through the rural market.

6. Communication:

Due to technological advancements, previously remote rural places are now always connected to the outside world. The rising use of mobile phones and DTH in villages has made it simpler for marketers to connect with rural consumers.

Challenges for Marketers in Rural Punjab:

One cannot ignore the problems that are prevalent in the rural market despite the abundance of prospects there. There are several river-surrounded villages in Punjab that are not connected by roads or bridges and are cut off during the monsoon season. Because the older generation in rural areas lacks formal education, they are reluctant to adopt new items, which presents a significant challenge for marketers.

The major challenges in rural Marketing:

1. Transportation Problem:

The majority of Punjabi villages are connected by highways; however, these roads are in terrible condition, making it impossible to deliver commodities to the rural markets.

2. Storehouse:

Due to a lack of warehouses and stores, it is difficult to store products in rural areas. Because storage is so expensive, it is challenging for marketers to offer things at low prices.

3. Packaging and Labelling:

The process of processing a product includes packaging. Large joint families are common in Punjab's rural areas; therefore these families have a greater need for bulk purchases and larger packaging than certain middle-class and lower-income households who choose more economical packaging and smaller product sizes. So choosing the right packing size is a difficult decision for marketers. There is a problem with the product's labelling because Punjabi, the regional language of the province, is distinct from English, the official language. For Punjab's rural clientele, different labels must be used in Punjabi.

4. Media:

Another difficult task is communicating with customers in remote areas. Since the introduction of DTH, television has been recommended as the ideal communication tool; however, both television and DTH rely on electricity, which is not always available in Punjab. Being able to communicate with the customer becomes challenging.

5. Seasonal Demand:

The seasonal demand for items presents marketers with yet another significant obstacle. Punjab's rural communities rely on seasonal farming for 75% of their income. During the harvesting season, demand for consumer products increases, and it then drops.

6. Language Barrier:

Majha, Malwa, and Doaba are the names of the three primary regions that make up Punjab. The language that people in these regions speak varies. Customer communication for marketers becomes challenging.

State Government Initiative:

With the aid of the 1954-founded Punjab State Cooperative Supply and Marketing Federation Limited, the Punjab government attempted to address these issues. It is referred to as "Markfed." It began with a capital investment of Rs. 54000 and today has a revenue of Rs. 11600 crore. In the State of Punjab's agricultural community, Markfed has shown to be a highly strong and stable organisation. As a state government purchasing organisation, Markfed is involved in the purchase of agricultural products. On behalf of the Government of India, it purchases wheat, paddy, cotton, oil-seeds like mustard and sunflower through FCI/NAFED as part of the Minimum Support Price (MSP) policy/Price Support Scheme. More than 85% of the business revenue in the food-grains sector comes from Markfed.

In Punjab and Gujarat, two of the wealthiest states in the nation with respectable transportation and infrastructure, Aadhaar has 45 locations. One such store is situated in the Punjabi village of Dauraha, 30 kilometres from Ludhiana. The 3,000 square foot company-owned store has the appearance of a typical city midsize outlet. Every goods, according to the store manager, is discounted between two and ten percent. Every day, 300 individuals on average visit the store and spend between Rs 400 and Rs 500 on merchandise.

Suggestions:

Communicate and change quality Perception;

Marketers should make an effort to interact with rural consumers and inform them of the benefits of their products. The messaging should be delivered in the target audience's native tongue to make it simple for them to understand.

Distribution Channels:

To fully utilise the rural market, a more effective distribution network is required.

Promoting products with the regional celebrities.

As they are closer to the target market, local celebrities should be used by marketers to promote their products.

Finance and credit facilities;

Grant farmers access to simple financial options. Farmers only have access to expensive things during the harvest season because their revenue is seasonal.

Conclusion:

The market of the future is the rural one. Despite the fact that the urban markets for many consumer goods are becoming saturated, the rural markets continue to supply marketers with excellent chances. Since 62 percent of Punjab's population lives in villages, the rural market is larger than the urban market. Since Punjab is an affluent state, there are many opportunities for marketers to grow their businesses there. Punjab faces difficulties as well, but innovative marketing techniques might help to overcome these difficulties. Truly innovative marketers should target Punjab's rural market.

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An Introduction to Blockchain

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Abstract

Block-chain is a ground-breaking technology that enables users to record transactions on a distributed, digital ledger without the need for a centralised authority. The most significant outcome of the block-chain revolution is without a doubt crypto-currencies, which some refer to as "the trust machine" technology. By defining the terms block-chain technology this book chapter aims to shed light on this phenomenon and offer useful insights into this emerging form of entrepreneurial funding.

Introduction

Back in 2008, "Satoshi Nakamoto" – a single person or group of developers – introduced the blockchain technology. It served as the mathematical underpinning for the peer-to-peer electronic currency "Bitcoin" (Nakamoto, 2008). Today, blockchain technology is recognised as the basis for a wide range of applications in the financial and non-financial sectors, in addition to serving as the backbone of cryptocurrencies (Crosby, Pattanayak, Verma, & Kalyanaraman, 2016; Pierro, 2017).

According to Adhami, Giudici, and Martinazzi (in press); Gatteschi, Lamberti, Demartini, Pranteda, and Santamara (2018); Niranjnamurthy, Nithya, and Jagannatha (2018); Siba & Prakash (2016); and Swan (2015), blockchain is a digital, decentralised, distributed ledger that keeps track of transactions. Its name is derived from the terms "block" and "chain," which Satoshi Nakamoto first used in 2008. In this system, transactions are organised into data packages called blocks and chained consecutively, with each block linked to the one before it. As a result, a blockchain serves as a full record of all transactions (Nofer, Gomber, Hinz, & Schiereck, 2017). Blockchain is likewise a distributed system, meaning that it needs more than one node to function properly. However, it is also decentralised, meaning that no single node can completely control the entire network. As a result, there is no need for a centralised authority, and it offers better efficiency and higher security. Additionally, because everyone on the network has the entire transaction history, blockchain guarantees transparency (Bhaskar & Chuen, 2015).

In blockchain, each block saves the previous block's hash values along with a nonce in addition to the transaction's details and timestamp (a random number). A simple example of a fundamental blockchain is shown in Figure 1. Blockchain technology uses the nonce to verify the hash when storing transaction information to maintain the chain's integrity (Gatteschi et al., 2018; Nofer et al., 2017; Pierro, 2017). The cryptographic hash function converts a given piece of data into a fixed-length string of numbers and letters to obtain a hash value (Drescher, 2017). The hash value of the word "hello" alone and the hash value of a sentence with 10 words, for instance, will be two different numbers, although they will have the exact same size and length. Additionally, a block's transactions are hashed using the Merkle root, which already has the hash of every transaction in the block. As a result, it is equally as difficult to hash a block containing 100 transactions as it is to hash a block with just one transaction (Bhaskar & Chuen, 2015). Additionally, since each modification to a block would also modify its corresponding hash value, fraudulent transactions could be successfully avoided.

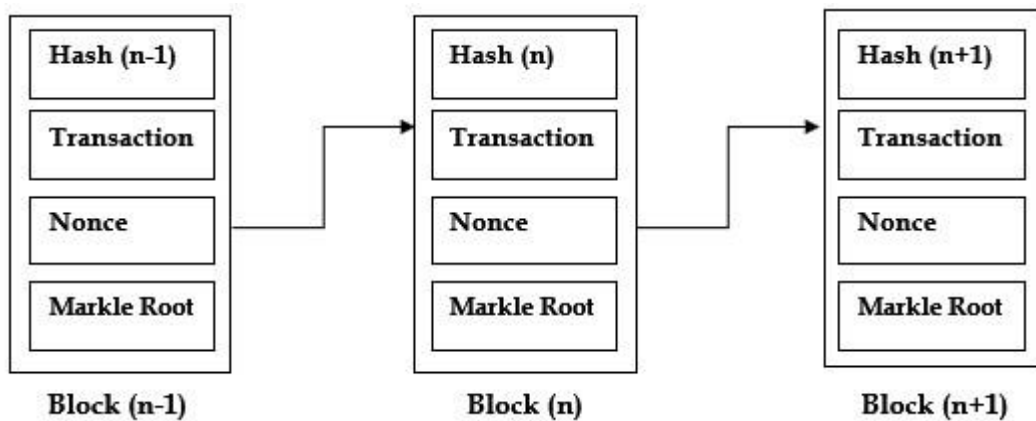


Figure1: Basic Block-chain

The majority of nodes in the network must agree by way of a consensus mechanism on the validity of all transactions in a block as well as the block itself before a new block can be added to the chain (Nofer et al., 2017). The purpose of this consensus mechanism is to make sure that the most recent transaction is recorded and that the data in a newly added block is accurate. It guarantees that the majority of network validators concur on the ledger's current state. Additionally, it is a set of guidelines and practices that numerous participating nodes follow to guarantee the accuracy of the ledger (Swanson, 2015). Additionally, the consensus mechanism will keep new transactions in a block for a specific amount of time before adding

The first and most common blockchain consensus process is called Proof of Work (PoW). Many cryptocurrencies, including Bitcoin, use the PoW-based HashCash algorithm for block production (Siba & Prakash, 2016). Only the "mining process," which rewards the first node (miner) to successfully solve a challenging mathematical problem with the freshly generated coin unit, will allow for the validation and addition of new blocks (Nofer et al., 2017). Therefore, the miner's aptitude for solving the mathematical puzzle determines the likelihood of mining a new block. This technique "requires nodes to obtain a random value that, when coupled with the hash of transactions and of the preceding block header, provides a particular result," according to Gatteschi et al. (2018). When a node finds a potential answer, it broadcasts the finding to the other nodes, who then verify it. The block is added to the blockchain and each node updates its local copy if the majority of nodes agree on the outcome (the winner may also be rewarded, for instance in the form of a transaction fee) (p. 63). However, in PoW, the amount of mining difficulty rises as more blocks are solved, making it increasingly tough for miners to acquire a new coin unit. Additionally, PoW is expensive for miners as it necessitates the use of more expensive and sophisticated mining equipment in order to compete in the mining market (Bhaskar & Chuen, 2015).

Other than Bitcoin, there are several forms of PoW, and blockchain-inspired or token-based consensus methods have been created. For instance, the Proof of Stake (PoS) consensus methods used in BitShares and Peercoin are excellent examples. In PoS, the miner's ownership interest in the cryptocurrency determines their mining power (or capacity to validate block transactions) (Bhaskar & Chuen, 2015; Lai & Chuen, 2018). Because of this, unlike PoW, where the protocol simply increases the mining power of the node with the most coins (stake), PoS rewards miners based on the labour they performed (solving mathematical puzzles in order to create and validate new blocks). A user with 1% of the total coins, for instance, might mine 1% of the PoS blocks (Bhaskar & Chuen, 2015).

Asymmetric Cryptography

Asymmetric cryptography has also been used in blockchain technology in addition to all the other distinctive characteristics of blockchain stated above. It also goes by the name "public-key cryptography," and it aids users in securing their digital assets. Information can be sent using this function and then encrypted using a public key and private key pair. A public key, which stands in for a person's account address, is freely visible to anyone. A private key, on the other hand, limits the account holder's ability to access ownership information. As an illustration, consider how an email address and a password are analogous to each other in,

users of the Bitcoin blockchain could send and receive bitcoins (Swan, 2015). Furthermore, a private key cannot be derived only from its matched public key. In addition, when any account holder authorises a transaction, a "digital signature" is produced to protect the accuracy of the data. Users' private keys are combined with the data they wish to send via a mathematical method. Since the user's private key is now a part of the data, the accuracy and completeness of the sent data are thereby guaranteed (Drescher, 2017).

Advantages and Disadvantages of Blockchain

Several benefits of blockchain technology have emerged over its development, and they can be summed up as follows:

1. Decentralisation: it cannot be controlled by any central authority and also offers trustless transactions without a third party
2. Transparency: the full transaction history is available to everyone
3. Automation: activities could be automated with smart contracts (Gatteschi et al., 2018)
4. Better fault tolerance and attack resistance: due to its nature of distribution, the system relies on multiple independent components. As a result, it will be difficult to fail or be the target of a cyber-attack (Adhami et al., in press); hardware) (Niranjanamurthy, Nithya, & Jagannatha, 2018).
5. Potentially lower transaction costs and faster transaction times: in comparison to the conventional system in some instances (for instance, international bank transfers; nevertheless, it might not be as affordable as the conventional system in some circumstances, such as a domestic same-bank transfer due to the expenses of electricity and hardware); (Niranjanamurthy, Nithya, & Jagannatha, 2018).

Blockchain, though, is more likely to be a two-edged sword. Additionally, it has the following drawbacks:

1. In certain situations, like as a domestic same bank transfer, the traditional existing banking system may have greater transaction costs and slower transaction times due to its high-power consumption and continually updated hardware needs for mining and data storage. The one with superior equipment and a greater hash rate will have a better chance because mining is more like a race among nodes where only the fastest wins. Furthermore, digital storage is also needed for data replication. Additionally, only a certain amount of transactions can be handled at any given time (Adhami et al., in press; Niranjanamurthy et al., 2018)

2. Due to its high-power consumption, blockchain technology may have negative effects on the environment. A peer-to-peer network exists. Therefore, it requires a number of active nodes or computers to keep the functional. Additionally, as was already established, the mining process uses a significant amount of energy and has ongoing hardware requirements)
3. Despite the distributed nature of the system, security concerns, theft threats, and cyber-attacks remain (Niranjanamurthy et al., 2018). One of the most prevalent hazards for blockchain is the "51 percent vulnerability," for instance. Since the blockchain consensus method itself has a 51 percent vulnerability, hackers might use it to take over the blockchain as a whole (Li, Jiang, Chen, Luo, & Wen, in press). The safety of the private key will be another significant danger. As was already said, in a blockchain, a user's private key serves as both their identity and security certificate. Therefore, the user's account runs the danger of being compromised if the user's private key is taken by a hacker. Additionally, a project's operating staff, such as the community administrator, may also be compromised and disclose sensitive information, in addition to the blockchain itself
4. As everyone would have access to the entire blockchain, full transparency might also have a negative effect on a user's reputation and privacy.
5. Because smart contracts are immutable, they can be vulnerable to certain cyberattacks. They could only be resolved by entering into new contracts and sending the relevant data (Gatteschi et al., 2018).

Additionally, cryptocurrency, like Bitcoin, which is the most well-known product to use blockchain technology, also carries the same hazards as the technology it relies on. Weaver (2018) asserts that hazards may manifest in the following ways: Participants are first exposed to technological risks. Similar to blockchain technology, once the private key, which is the sole means to govern the cryptocurrency, has been taken or compromised, anyone might access them and shift money. The nature of cryptocurrencies is "internet of money," even if users save their coins on their computer, second risk is related to participants' economic risks. The price that reflects the actual value of cryptocurrencies is volatile and prone to collapse unexpectedly behind trust bubbles because it only depends on the price that someone is prepared to pay. Thirdly, systemic threats from governmental interference, central authority, exchanges, and worms abound in the cryptocurrency ecosystem. Even while cryptocurrencies assert that governments and central bodies cannot censor cryptographic

the root of exchange concerns. Last but not least, the likelihood of social dangers rises dramatically as a result of the expansion of the criminal class brought on by the ease with which crimes may be easily money laundered. Possibly the most costly effect of avoiding legal loopholes will be risks to society.

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Financial Management and Planning in the Organizations

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Abstract

Financial Management alludes to the use of general administration standards to the different financial assets which are anticipating. This includes arranging, coordinating, coordinating and controlling of the financial exercises. Finance arranging is cycle of outlining targets, arrangements, techniques, projects and financial plans as to monetary exercises. This guarantees viable and satisfactory Financial and venture approaches, sufficient reserves must be guaranteed, guaranteeing a sensible harmony among surge and inflow of assets, guaranteeing providers of assets, arrangement of development and extension programs which helps in lengthy run endurance of the organization, decrease of vulnerabilities concerning changing business sector patterns which the organization could be confronted with, guaranteeing dependability and productivity.

Keywords: management, finance, organization, growth

Introduction

The financial management is use of financial assessments which influence the financial condition in business of the associations. The financial administration empowers the associations to design, to utilize projects, future financial acknowledge of capital, property and vital stuff for boost of the arrival of speculations. Financial management is the principal period of financial management, and that implies the board of all out incomes which are required to give the fundamental assets, to anticipate the general inflow and outpouring of assets, to perform monetary control on the current, yet on the future monetary and business occasions too. The monetary preparation in associations is acted to anticipate future monetary outcomes and to decide the organization's most effective way to involve the monetary assets for accomplishment of its present moment and long-haul objectives. The financial preparation in the association is an errand which decides in what direction the association is heading to accomplish its essential objectives. Normally, the associations' gets

ready financial arrangement after the foundation of the vision what's more, the objectives that it might want to accomplish by its activity. The financial management figures out which crude materials will be obtained, the items which will be delivered, and the most effective approach to sell them available. The monetary arranging influences the human and material assets which will be utilized to empower the organization to maintain the business. The monetary arranging is fundamental deciding component whether the organization will actually want to productively achieve its business.

Review of Literature

Kamalavali (2006) - Laid out a negative relationship between monetary exhibitions and the ongoing proportion, cash turnover proportion, current resource for working pay and influence yet a positive relationship among ROI and the speedy proportion, debt holder's turnover proportion, current resource for complete resource and development rate.

Dong (2010) - zeroed in on productivity, transformation cycle and its connected components revealed that the organizations' productivity and liquidity are impacted by working capital the executives, with an extremely impressive negative relationship being seen between the factors. This suggested that decline in the productivity happen because of expansion in real money transformation cycle while a decline in the quantity of long periods of record receivable and inventories expanded the benefit.

Butler and Cornaggia (2009) - Resource the board in business includes the efficient reconciliation of cutting edge and feasible administration strategies into a the board worldview or perspective, with essential spotlight on the drawn out life pattern of the resource and its supported execution, as opposed to on present moment, everyday parts of the resource. Legitimate resource the board empowers SMEs to get to resource based extension supporting from monetary establishments. Proof recommends that admittance to back has a helpful influence on business new companies and development. For example, a survey of observational investigations investigating business development showed that of the five investigations which analyzed the effect of startup capital on the development execution of organizations, three found a positive connection between fire up capital and development however they don't be guaranteed to give proof of a causal relationship.

Richard et al., (1991) - One more basic part of monetary administration among SMEs is monetary detailing. Notwithstanding their monetary significance, one of the difficulties that has customarily confronted MSEs is absence of admittance to financing is exacerbated by MSEs powerlessness to produce and utilize quality bookkeeping data. Despite unfortunate bookkeeping or non-presence bookkeeping data, great subsidizes the executives is repressed.

Content Analysis

The financial management has capability to gauge the prerequisites for capital which the organization needs. That relies upon the normal expenses and benefit and future projects and arrangements. The capital assessment ought to be acted such that will build the organization's acquiring limits. When the appraisal is made, the capital structure in present moment and in long haul, as well as the borrowings and capital worth ought not entirely settled. Then, at that point, it is trailed by the determination of resources sources, which might be offers and bonds, bank credits, advances from monetary establishments, public stores in type of bonds. Financial Management means to go with choices for designation of the resources in productive endeavours and in secure speculations with standard return of venture. Monetary the executives additionally incorporate coming to conclusion about cash the board, instalment of pay rates, power costs, reimbursement of advances, keeping up with stock, acquisition of unrefined substances. The last movement of monetary the board is monetary control which might be acknowledged through different methods, like relationship investigation, financial controlling and cost and benefit control.

Conclusion

The financial management implies arranging, putting together, coordinating and controlling of monetary exercises, for example, acquirement and utilization of association's resources. By and large, the monetary administration is connected with acquirement, designation and control of financial assets. The financial management has capability to appraise the prerequisites for capital which the association needs. Monetary arranging is interaction of detailing of objectives, approaches, methodology, projects and financial plan that allude to association's money capability. As a matter of fact, the monetary arranging addresses concretization of the monetary approach through monetary plans in which the goal is placed on esteem articulation in reality.

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Business Ethics

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Introduction

Acting ethically ultimately means determining what is “right” and what is “wrong.” Basic standards exist around the world that dictate what is wrong or unethical in terms of business practices.

For example, unsafe working conditions are generally considered unethical because they put workers in danger. An example of this is a crowded work floor with only one means of exit. In the event of an emergency – such as a fire – workers could become trapped or might be trampled on as everyone heads for the only means of escape.

While some unethical business practices are obvious or true for companies around the world, they do still occur. Determining what practices are ethical or not is more difficult to determine if they exist in a grey area where the lines between ethical and unethical can become blurred.

For example, assume Company A works with a contact at Company B, an individual through which they negotiate all the prices for supplies they buy from Company B. Company A naturally wants to get the best prices on the supplies. When the individual from Company B comes to their home office to negotiate a new contract, they put him up in a top-tier hotel, in the very best suite, and make sure that all his wants and needs are met while he’s there.

In technical terms, the practice is not illegal. However, it might be considered a grey area – close to, but not quite, bribery – because the individual is then likely to be more inclined to give Company A a price break at the expense of getting the best deal for his own company.

Understanding Business Ethics in Three Parts

To truly break down business ethics, it’s important to understand the three basic components that the term can be dissected into.

1. History

The first part is the history. While the idea of business ethics came into existence along with the creation of the first companies or organizations, what is most often referred to by the term

is its recent history since the early 1970s. This was when the term became commonly used in the United States.

The main principles of business ethics are based in academia and on academic writings on proper business operations. Basic ethical practices have been gleaned through research and practical study of how businesses function, and how they operate, both independently and with one another.

2. Scandals

The second major meaning behind the term is derived from its close relationship and usage when scandals occur. Companies selling goods in the U.S. that were created using child labor or poor working conditions is one such scandalous occurrence.

3. Integration

Perhaps the most recent and continually developing aspect of ethics is the third piece – the idea that companies are building business ethics into the core of their companies, making them a standard part of their operational blueprint. As the world continues to grow more political – and more politically correct – an increased focus on proper business ethics and strong adherence to them become ever more the norm.

To learn more about how to develop a strong ethical culture within an organization, see CFI's **Professional Ethics** course

Why Business ethics?

Because business can be immoral and there are many examples of unethical corporate practises in use today, discussion of business ethics is required. Even Adam Smith, whose name is associated with the neo-liberal laissez-faire philosophy, once observed that "people in the same trade rarely gather together, even for pleasure and amusement, but the discourse ends in a conspiracy against the public, or in some contrivance to raise prices." The world of business is not a vacuum. Corporations and businesses function in both the natural and social environments. Business is required to be responsible for the social and environmental environment in which it lives by virtue of its own existence.

Business Ethics International and Economic Systems Ethics

Because they involve a much broader, global perspective on business ethical challenges, these themes are grouped together

A. Ethics in Global Business

Looking back on the worldwide developments of that decade, while the area of business ethics first developed in the 1970s, the field of international business ethics did not arise until the late 1990s. The international corporate environment gave rise to a number of brand-new practical problems. In this subject, theoretical questions like the cultural relativity of ethical norms are given significant weight. These can also be used to group other, earlier problems. Among the topics and subfields are ethical concerns emerging from cross-border business dealings, bio, such as biopiracy and prospecting in the pharmaceutical industry, the fair-trade movement, and transfer pricing. Issues cultural imperialism and globalisation. worldwide norms that vary- such as the employment of children.the methods used by multinational corporations to benefit from regional variations, such as outsourcing goods (for example, clothing) and services (for example, contact centres) to nations with low wages.

Dumping refers to the practise of selling goods for less than their market worth in order to gain an advantage over domestic producers. Problems in domestic markets could result from this. With the pricing established by foreign markets, it becomes challenging for these markets to compete Business ethics - Wikipedia, the free encyclopaedia. The International Trade Commission has been investigating anti-dumping regulations since 2009. Due to the fact that bigger organisations are taking advantage of smaller, less developed businesses, dumping is frequently perceived as an unethical problem.

Issues with Ethics in Global Business

Getz (1990: 567-577) examined international codes of conduct in four organisations: the International Chamber of Commerce (ICC), which is concerned with fair treatment among multinational corporations, the International Labour Organization (ILO), which is concerned with direct investment in developing countries, and the Center for Transnational Policy

Ethical Problems and Ethical Climate

One way to achieve the ultimate objective of having ethical international responsibility in conducting business globally is through strategies like these codes of ethics. As was already mentioned, global organisations have a lot of ethical obligations.

Most theorists concur that situational factors like organisational atmosphere can influence people's ethical behaviour (Kelly et al., 1989: 327-340). But there haven't been any investigates the link between an organization's ethical culture and its people' ethical behaviour.

It is important to note that ethical climate is not the same as culture as it is typically understood, but rather a more expansive definition of culture (Schein, 1990, pp. 109-119).

Culture is thought to be more closely related to more profound beliefs, values, and presumptions (Denison, 1996, pp. 619-654).

Therefore, the ethical environment can be noticed on a broader scale, in this case, the company, just as one can value an individual's culture by his or her acts and personal activities. In essence, an organization's ethical atmosphere is its employees' impression of its norms (Bartels et al. 1998: 799-804).

Conclusion

As with most human endeavours, business is a human activity that has been and will likely continue to be morally assessed (Robin and Reidenbach, 1987). Business branding is a common practise. Organizational business ethics involve values-based leadership from top management, deliberate measures such as the creation and implementation of norms of proper conduct, as well as openness and ongoing efforts to raise the ethical performance of the organisation.

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E- Commerce Concept and It's Models

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Web and Information innovation have made enormous commitments for business change saw these days from one side of the planet to the other. This has brought forth E trade which incorporates a few pre buy and post buy exercises prompting trade of items or administration or data over electronic frameworks, for example, the web and the other Telecommunication networks. Analyzing the upper hand of E-Commerce, it is seen that E-Commerce empowers less complex, quicker and proficient deals. For non-industrial nation like India, E-Commerce offer impressive chance for development. Web based business prompts an aid for the ongoing financial slump. As India's web-based business market is worth about Rs. 50,000 crores in 2011. Around 80% of this is travel related (aircraft tickets, railroad tickets, lodging appointments, online versatile re-energize etc.). Online retailing includes around 15%. India has near 10 million internet-based customers and is developing at an expected 40-45% per annum. The task was attempted under the oversight of Nirala Imex Inc who at present has their business activity in Taiwanese market in selling of Indian staple things to the nearby retailers and distributor in the Taiwanese market. The organization has proposed an arrangement to send off a web-based supermarket in the Indian market for which the task was embraced was to decide if online shopping for food will be helpful to the client as for poll which will be broke down in three sections. The venture will initially concentrate on the mentality of clients towards web-based shopping, additionally deciding the variables which impact the customer to buy merchandise and administration. The last part of the undertaking will portray the qualities of web-based shopping affecting the buy choice by the respondent. It will likewise decide the issues with respect to the web based shopping. The third piece of the task decides the buy choice as for basic food item. It will decide the spot inclination of shopping for food as for cost, quality, assortment, nearness and offers/limits. The venture will likewise suggest the business functional arrangement which works with contracting showroom with the nearby kirana stores.

The E-trade area in India is quickly developing at an extremely fast speed in the new days and up to this current day. This tireless development of E-trade is meaningfully having an

impact on the manner in which individuals accept, search, perform and raise a yield. Most customers are taking on new advances in shopping and with a significant number of them being liberal scholars, need quick and effective shopping while likewise considering other shopping credits. Greater part of organizations in the limited scale, medium scale and enormous scope areas own a site to work on their business and they do as such by utilizing on the web commercials, online special occasions/exercises hence taking a "computerized" jump in the business cycles. The accommodation, needs, needs and solace of the customers and their purchasing conduct and the most common way of purchasing is the wellspring of the determined development of E-trade. Web based shopping is filling quickly in present days. Individuals are impacting the manner in which they search for labor and products. There has been an enormous shift from conventional shopping to internet shopping. With regards to online shopping for food, because of purchasers' bustling plan for getting work done, the imaginative customers or early adopters are tracking down ways for the changing innovation to help them in more current approaches to shopping. The arising on the web shopping for food is progressively embraced by many purchasers' in metropolitan regions. There are many elements which urge individuals to search for basic foods on the web, however it isn't understood what variables impact them to go for internet purchasing of food. The expression "insight" can be characterized as the capacity to determine meaning. Gotten from "see", it alludes to the capacity of giving importance to whatever is detected by our receptors. Schiff man characterizes it as "the interaction by which an individual chooses, puts together, and deciphers boosts into a significant and intelligent image of the world." The term client insight can be characterized as, "a showcasing idea that incorporates a client's impression, mindfulness or potentially cognizance about an organization or its contributions. Client insight is normally impacted by promoting, audits, advertising, virtual entertainment, individual encounters and other channels. "Consumer impressions of cost, esteem, quality are the urgent determinants of shopping conduct. Web is significantly having an impact on the manner in which customers shop and purchase labor and products, and has quickly developed into a worldwide peculiarity. Many organizations have begun utilizing the Electronic Commerce fully intent on reducing showcasing expenses, in this manner diminishing the cost of their items and administrations to remain ahead in profoundly serious business sectors. Organizations additionally utilize the Internet to pass on imparts and spread data, to sell the item, to take input and furthermore to lead fulfillment studies with clients. Clients utilize the Internet not exclusively to purchase the item on the web, yet in addition to look at costs, item includes and after deal administration offices the will get on the off chance that they buy the item from a specific store. Numerous specialists are hopeful about the possibility of online business. Notwithstanding the huge capability of the E-trade market, the Internet gives a one of a kind chances to organizations to all the more

productively arrive at existing and possible clients. Albeit a large portion of the income of online exchanges comes from business-to-business trade, the experts of business-to-shopper business shouldn't lose certainty. It has been over 10 years since business-to-buyer E-trade originally developed. Researchers and specialists of electronic business continually endeavor to acquire a superior understanding into shopper conduct in the internet. Alongside the improvement of E-retailing, analysts keep on making sense of Consumers conduct according to alternate points of view. Large numbers of their examinations have set new developing elements or suppositions which depend on the customary models of shopper conduct, and afterward look at their legitimacy in the Internet context. The items presented by a web-based supermarket are indistinguishable from a typical supermarket. At the point when one has completed the process of shopping, checkout is made with a Visa, and the purchaser should indicate specific hours that he will be accessible to get the nourishment for conveyance.

Web is impacting the manner in which customers shop and purchase labor and products, and has quickly developed into a worldwide peculiarity. Many organizations have begun utilizing the Internet determined to reduce showcasing expenses, in this way lessening the cost of their items and administrations to remain ahead in exceptionally aggressive business sectors. Organizations likewise utilize the Internet to pass on imparts and spread data, to sell the item, to take criticism and furthermore to direct fulfillment studies with clients. Clients utilize the Internet not exclusively to purchase the item on the web, yet additionally to look at costs, item includes and after deal administration offices the will get on the off chance that they buy the item from a specific store. Numerous specialists are hopeful about the possibility of online business. Notwithstanding the huge capability of the E-business market, the Internet gives a novel chance to organizations to all the more proficiently arrive at existing and possible clients. Albeit the majority of the income of online exchanges comes from business-to-business trade, the specialists of business-to-buyer trade shouldn't lose certainty. It has been over 10 years since business-to-purchaser E-trade initially developed. Researchers and professionals of electronic trade continually endeavor to acquire a better understanding into customer conduct in cyberspace. Along with the improvement of E-retailing, scientists keep on making sense of E-shoppers conduct according to alternate points of view. A considerable lot of their examinations have placed new factors or suppositions which depend on the customary models of buyer conduct, and afterward look at their legitimacy in the Internet setting.

Models of E-commerce

Business-to-Business (B2B): B2B web-based business is just characterized as online business between organizations. This is the kind of web-based business that arrangements with connections between and among organizations. Around 80% of web-based business is of this kind, and most specialists foresee that B2B online business will keep on becoming quicker than the B2C portion. Eg: indiamart.com, eindiabusiness.com, tradeindia.com and so on.

Business-to-consumer (B2C): Business-to-shopper internet business, or trade among organizations and buyers, includes clients gathering data; buying actual merchandise (i.e., physical assets like books or purchaser items) or data products (or merchandise of electronic material or digitized content, like programming, or digital books); and, for data products, getting items over an electronic organization.

Business-to-Government (B2G): Business-to-government internet business or B2G is for the most part characterized as trade among organizations and the public area. It alludes to the utilization of the Internet for public acquirement, authorizing techniques, and other government-related activities. This sort of web-based business has two highlights: first, the public area expects a pilot/driving job in laying out web-based business; and second, it is expected that the public area has the best requirement for making its obtainment framework more compelling.

Consumer-to-Consumer (C2C): Consumer-to-consumer e-commerce or C2C is simply commerce between private individuals or consumers. This type of e-commerce is characterized by the growth of electronic marketplaces and online auctions, particularly in vertical industries where firms/businesses can bid for what they want from among multiple suppliers. It perhaps has the greatest potential for developing new markets. Online auction site eBay, Yahoo! Auctions are a couple of examples of C2C websites.

M-business (portable trade) is the trading of labor and products through remote innovation i.e., handheld gadgets like cell phones and individual computerized partners (PDAs). Portable Commerce is any exchange, including the exchange of possession or freedoms to utilize labor and products, which is started or potentially finished by utilizing versatile admittance to computer-mediated networks with the assistance of an electronic gadget.

The Indian economy is scheduled to develop by vertically of 6 % every year in the following couple of years which is among the most elevated paces of any large arising economy. What's more, a considerable amount of this development would be on the rear of homegrown utilization of labor and products. Online business is arising as an incredible level given that coordinated retail is as yet not pervasive across the length and broadness of the country with

this current year. Expanding web infiltration has assisted with extending the potential client pool. Web entrance is just around 10% (or around 121 million clients) as against around 81% in the US and 36% in China. Anyway, this number keeps on ascending at a steady speed in light of falling costs for broadband associations. Indians are additionally progressively taking to cell phones for search as well as shopping too. The quantity of cell phone clients is quickly expanding in India and with 4G administrations going to remove it's supposed to get considerably more individuals rolling on the web. There are as of now around 900 million portable supporters and this number is supposed to contact 1.2 billion by 2015. Of these around 27 million are assessed to be dynamic versatile web clients. All the more significantly, 20% clients showed goal to purchase items through their cell phones as against the ongoing 4% and this number is supposed to increment in the following a few years as it were. Development is helping web-based business organizations break the idleness for internet shopping by offering advantages to clients not customarily accessible in a physical store. Plans of action incorporate no inquiry posed to return arrangements going from 7 days to 30 days, free item conveyances and the business elements evolving "money down" model. The last advancement has truly assist with opening the potential as individuals can now arrange items and pay when they get actual conveyance of the item.

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Yield Management

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Introduction:

For service organisations, managing service demand and capacity has never been easy. To deal with this problem, yield management is a technique. It is described as "providing the appropriate service to the appropriate consumer at the appropriate time for the appropriate price."

Not all service businesses are appropriate for yield management (yet). The following attributes of services have had the most success with application:

- Relative fixed capacity, for example, the inability of a hotel to satisfy additional demand once all of its rooms have been booked out without making large capital investments
- Perishable inventory - Time, or more precisely, the amount of time that a unit of capacity is available, is a significant limitation for services. The money that would have been made if a hotel room (unit of capacity) had been sold for a specific day is lost.
- Segmented markets allow for the division of a service's market based on a variety of factors, such as price sensitivity.
- Fluctuating demand: Different pricing strategies can be used to lessen peaks and valleys in fluctuating demand. Success in this area leads to more efficient capacity usage. The ability to sell services in advance via reservation systems enables higher capacity utilisation.
- Low variable to fixed cost ratio - while pricing services, some contribution to fixed costs must be made. The revenue anticipated from selling it is generally more than if it were not sold due to the low level of variable cost, such as cleaning a hotel room, along with pricing discretion. Because of this, yield management is frequently thought of as a method that increases profits.

The following essential components are recognised and used to maximise yield.

Time

Time is the primary factor in deciding how much a client is likely to spend and, as a result, the yield that accrues to the business. Time refers to when a service is used, such as an hour of the day, day of the week, or month of the year. In yield management, the sensitivity of the client base to when they use the service is crucial. The timing of any reservation may determine the cost in addition to the hours of consumption. Demand: Services must categorise demand periods and the fluctuations between them in order to do yield estimates and assessments.

Figure 1.0 depicts a single classification that might be used. Figure 1.0 shows a total of 32 demand periods (4 seasons, 2 days of the week, and 4 times of the day). The question of whether each of the 32 cells warrants special treatment in terms of price levels and customer profiles is relevant for yield management objectives. The airline industry has been under fire for its continued fine-tuning of segments and combinations of rates, regulations, and conditions, only to discover that '60-80% of these goods never generated a single sale of a seat to a consumer.

Customers are also attentive to pricing, along with the before mentioned concept of time. When a consumer has to utilise a specific service—like the railroads during rush hour, for example—they will be prepared to pay extra (price-insensitive). In contrast, a consumer who is not worried about, for example, the time of travel (time-insensitive) will benefit from a lower price if an off-peak time is chosen (price-sensitive). Despite the fact that time and demand levels are the primary rate walls or causes of price discrimination, other factors (as we shall show) allow for pricing diversity.

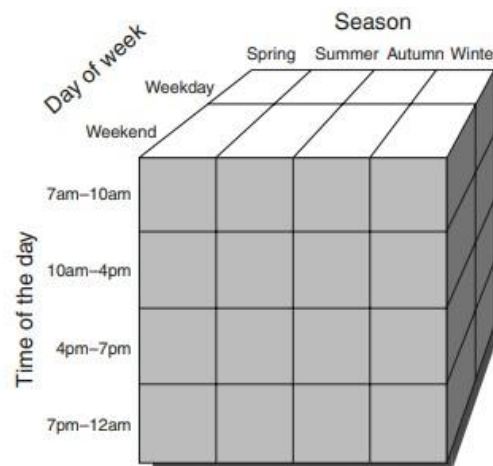


Figure 1.0- Variations in demand by time period

Rate fences

The above-mentioned price discrimination method or variable pricing should make sense. In order to accomplish this, yield management sets rate fences at the time of usage. These are guidelines or requirements created to make the justification for a specific price or price variations generally evident. Customers must believe that price discrepancies are justifiable and fair for businesses to succeed, it is believed. Two clients may have paid different prices for the same service (a specific train journey) when they are using it. The customer who is paying the greater price can feel that this is an unfair scenario. However, specific rate walls in this situation are intended to provide justification.

There are two categories of rate fences.

Tangible rate fences

- Table location
- Parties involved
- Menu format
- The existence or lack of specific facilities (e.g., bread on the table)

Intangible rate fences

- Application for membership in a group
- Day or week of the week
- Use-time frame
- Timing of reservations
- Walk-in or appointment
- Reservation type (guaranteed or not).

The fundamental yield statistic is a simple measurement.

It is expressed as follows: $\text{Yield} = \frac{\text{Actual revenue}}{\text{Potential or Maximum revenue}}$

Revenue potential is the revenue that could be secured if 100 per cent of capacity is sold at the maximum price possible.

In more detail, yield is a function of price efficiency and capacity used, namely:

Capacity utilization * Price efficiency

Price efficiency=Average Actual price/ Maximum price

Capacity utilization=Units of capacity sold /Total units of capacity82

Suppose there is a hotel having 600 rooms capacity and is charging customers in the following manner:

Rooms	Price charged	Number of rooms	Revenue earned
1-100	100	100	10000
101-200	200	100	20000
201-400	300	200	60000
401-450	400	50	20000
451-500	500	50	25000
		500	135000

Table 1.0-Classification of rates charged to customers

From the above table we can calculate average price as: $135000/500 =270$

Price efficiency in this case will be: $270/500=.54$

Capacity utilization will be: $500/600= 0.833333$

Hence Yield in this case will be= $.54*.834= 0.45$ or 45%

Indicators to Measure Digital Economy

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Sound measurement is crucial for informing and guiding policymaking, as it helps policymakers produce precise diagnostics, assess the potential impact of alternative policy options, monitor progress, and evaluate the efficiency and efficacy of implemented policy actions. The demand for new data, indicators and measurement tools is particularly acute in the case of the digital economy due to the growing role it plays in G20 economies and everyday life, its potential to transform jobs and production, and the fast pace of change that characterises it.

More than 30 key existing indicators and methodologies to monitor and assess the size and penetration of the digital economy are organized in four themes according to their main purpose of measurement:

1. **Infrastructure.** This section covers indicators of the development of physical, service and security infrastructures underlying the digital economy. It includes access to mobile and fixed networks, the development of next generation access (NGA) networks, the dynamics of household and business uptake, secure servers infrastructure, and infrastructure for the internet of things.
2. **Empowering society.** This section considers indicators that portray the evolving role of the digital economy in people's life, how they access and use digital technologies, and their abilities to fully exploit their potential. It includes indicators on people's use of the internet, education, financial inclusion and interaction with government, among others.
3. **Innovation and technology adoption.** This theme contains indicators that address innovation in digital technologies, new digitally-enabled business models, the role of ICTs as an engine for innovation, and adoption of ICTs and other emerging technologies by businesses.
4. **Jobs and Growth.** The metrics collected within this section explore the different ways in which digital technologies contribute to economic growth and employment creation. It.

includes indicators related to the labour market, employment creation, investment in ICTs, value added, international trade, e-commerce, and productivity growth

Infrastructure

1. Investing in Broadband

Broadband communication networks and the services provided over them support economic and social development goals, such as health, financial inclusion and education. The number of worldwide fixed broadband subscriptions has increased by 86% within just seven years.

Communication operators have deployed fiber optics further into their networks to support “last mile” technologies designed to make the copper wireless, and coaxial cable used where fiber is not taken all the way to customers’ premises and deliver higher speeds.

2. The rise of mobile broadband

Growth in mobile broadband subscriptions has far outstripped fixed broadband growth since 2010. The relatively limited availability and affordability of fixed broadband can be an important contributing factor to such strong growth.

3. Toward higher Internet speed

Adequate network access speed is essential to fully exploit existing services over the Internet and to foster the diffusion of new ones. This is particularly the case for business users, educational institutions and the public sector which can often secure offers tailored to their requirements through products such as leased lines between specific locations.

In terms of retail (consumer) service offers, although the official threshold for broadband is 256 kbps (Kilobit per second), globally most consumer fixed broadband subscriptions are already marketed at over 10 Mbps (1 Megabit corresponds to 1024 kbps).

4. Prices for connectivity

Prices for connectivity provide insights into competition and efficiency levels in communication markets. In mobile markets, increased competition has both lowered prices and increased the quality of the offers.

5. Infrastructure for the Internet of Things

The Internet of Things (IoT) refers to an ecosystem in which applications and services are driven by data collected from devices that act as sensors and interface with the physical world.

6. Household access to computers

The number of households with computer access at home has continued to edge upward. As computer hardware can be a significant outlay for any household, computer access at home is highly correlated with income level.

Empowering Society

1. Digital Natives

The Internet permeates every aspect of the economy and society, and is also becoming an essential element of young peoples' lives. Increasingly, policymakers require evidence of the impact of ICTs on students' school performance.

2. Narrowing the Digital Divide

Today's digital economy is characterised by connectivity between users and between devices, as well as the convergence of formerly distinct parts of communication ecosystems such as fixed and wireless networks, voice and data, and telecommunications and broadcasting. The Internet and connected devices have become a crucial part of most individuals' everyday life in G20 economies.

3. E-Consumers

E-commerce can substantially widen choices and convenience for consumers.

What is an e-commerce transaction?

An e-commerce transaction describes the sale or purchase of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders (OECD, 2011).

4. Mobile Money

Mobile money is a store of value and means of payment accessible via a mobile phone. Its convenience and low costs give mobile money an important role in fostering financial inclusion.

5. Education in the Digital Era

Tertiary education has expanded worldwide to support the supply of highly educated individuals and meet rising demand for cognitive skills. Policy makers are particularly

6. Individuals with ICT Skills

ICT skills are a key determinant of the ability to make effective use of ICTs. Currently, there is little data available for measuring ICT-specific skills, and hence researchers and policy-makers must rely on proxy indicators to measure this important enabler of ICT development.

Innovation and Technology Adoption

(i) Research in Machine Learning

ML deals with the development of computer algorithms that learn autonomously based on available data and information. Drawing on the power of “big data” sources, algorithms can deal with more complex problems that were previously assailable only to human beings.

(ii) AI-Related Technologies

Disruptive technologies displace established ones and affect production processes, the entry of new firms, and the launch of ground-breaking products and applications. Many of the most exciting or useful products available today owe their existence performance, efficacy and accessibility to the recent development of disruptive technologies in fields such as advanced materials, information and communication technologies, and health-related technologies.

(iii) Robotisation in Manufacturing

Production is being transformed by advances in fields such as big data, 3D printing, machine-to-machine communication, and robots.

(iv) R&D in Information Industries

Increasing national investment in R&D requires the combination of public and private efforts. In the more developed economies, the business sector accounts for the largest share of R&D spending, with much of this directed towards developing new products to introduce in the market – that build on existing knowledge or involve developing new knowledge.

(v) ICT-related Innovations

Competing in Information and Communication Technology (ICT) markets worldwide requires innovations and technological developments to be bundled with appealing

designs, while making consumers able to recognise the new and often complex products on offer.

Jobs and Growth

1) Jobs in the Information Industries

The information industries are considered an important source of economic and job growth despite accounting for a small share of business sector employment.

Defining information industries

The OECD has defined information industries (OECD, 2011) as the aggregate combining ICT and digital media and content industries in the current version of the International Standard Industry Classification. This aggregate covers ICT manufacturing: “Computer, electronic and optical products” and information services.

2) Jobs in ICT occupations

Statistics on ICT-related occupations and on employment in information industries offer complementary perspectives on the importance of ICT activities.

3) E-Commerce

On average, 20% of enterprises in G20 countries for which data are available made sales via e-commerce in 2015, representing an increase of 3 percentage points since 2009.

Measuring e-commerce sales

An e-commerce transaction describes the sale or purchase of goods or services conducted over computer networks by methods specifically designed for the purpose of receiving or placing orders (OECD, 2011).

4) ICT and productivity growth

Labour productivity growth represents a higher level of output for every hour worked. This can be achieved if more capital per labour unit, i.e. capital deepening, is used in production, or by improving the overall efficiency with which labour and capital are used together, i.e. higher Multi-Factor Productivity (MFP).

5) Trade and ICT Jobs

Estimates of jobs embodied in foreign final demand can reveal the extent to which a country is integrated into the global economy. As the number of firms specialising in particular stages of global production increases, dependencies between economies deepen.

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Production and Operations Management: A Modern Development

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Abstract

The paper examines what by and large is occurring in the space of Production and Operations The board by featuring the significance and job of Global concentration, CAD/CAM, Just-In-Time, Product life cycle, Customized Production and Green Production. Investigation is finished on how this large number of patterns plays an essential job in making processes more productive, with the sole point of lessening waste, expanding creation rate, item quality, and way of life, cost-cutting and making the interaction quicker by greatest usage of man, material, and machine. These fast improvements have lead to increment in wages of representatives, making a worldwide market for selling the items, worked on planning and nature of the items, open doors for presenting new advancements in item plan, customization and last making our current circumstance perfect and green with the presentation of green creation.

Introduction

Almost two century's activities also, creation the board has been perceived as a significant variable in a country's financial development. The conventional perspective on assembling the board started in eighteenth century when Adam Smith perceived the financial advantages of specialization of work. In the mid-20th Century, F.W. Taylor carried out Smith's hypotheses what's more, created logical administration. From then, at that point, till 1930, numerous strategies were created winning the conventional view. Creation the board turns into the adequate term from 1930s to 1950s. As F.W. Taylor's works become all the more generally known, supervisors created procedures that zeroed in on financial proficiency in producing. Laborers were concentrated in significant attention to little subtleties to wipe out inefficient endeavours and accomplish more prominent proficiency.

Worldwide FOCUS

The topographical impediment of the market has extended from zeroing in on nearby markets to zero in on worldwide business sectors. This has happened because of the quick turn of events in correspondence, globalization and expanded portability of assets among nations.

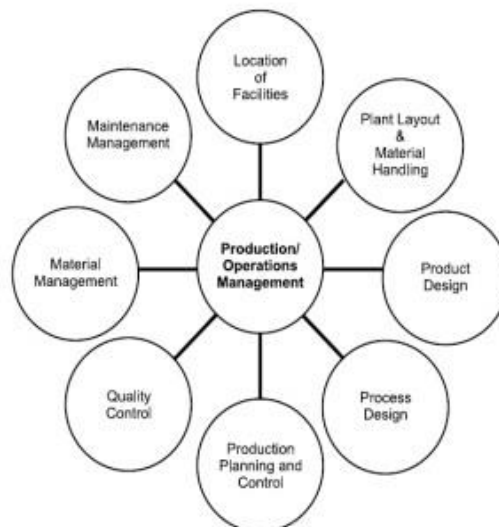
PC supported Design and Producing (CAD/CAM)

PC supported activities implied that all the planning and assembling of the item would be finished with the assistance of PCs making the activities way more productive (Groover, 1997). These frameworks tremendously helped in new item improvement and updating the cycles. PC Aided Design (CAD) includes the utilization of PC equipment and designs programming to produce plan drawings. Present day CAD gear empowers the planner to rapidly create extremely exact what's more, sensible pictures of items to be fabricated.

Inventory network Partnerships

In past the buying exercises were completed in light of the most reduced bid where associations picked the provider who gives the most reduced bid to a specific request. This was all the more present moment centered and quality and dependability was overlooked. In present day days the low offered buying has moved to inventory network organizations where organizations consider providers as a piece of their worth chain and assemble dependable associations with providers as opposed to zeroing in on short conditions gains with low costs.

Chart-1 Activities under production and operations management



Review of Literature

Tseng & Jiao (2001, p. 685) - "producing goods and services to meet individual customer's needs with near mass production efficiency".

Kaplan & Haenlein (2006) - "a strategy that creates value by some form of company-customer interaction at the fabrication and assembly stage of the operations level to create customized products with production cost and monetary price similar to those of mass-produced products".

Womack et al. (1990) – recorded how Toyota utilized JIT and different standards of shelter lessen stock and increment quality. Lean has turned into a well-known and esteemed procedure at organizations all over the planet and a focal point of examination. In 1997, Elkington presented the term Triple Bottom Line to mean that business shouldn't simply zero in on the "primary concern" yet rather center around individuals, benefit, and the planet.

Chopra et al. (2004, p9) - note that a large portion of this early exploration "zeroed in on strategic issues, for example, line adjusting, booking, creation arranging, stock control, and part estimating." As PCs opened up to organizations, materials necessities arranging (MRP) turned into a significant part of tasks the board during the 1960s and 1970s. Strategies created by Japanese organizations (with assistance from Deming) carried quality into the extent of tasks the executives as a center region, incorporating in the nick of time (JIT), all out quality administration (TQM), and factual quality control (SQC). By seeing articles distributed somewhere in the range of 1982 and 1987.

Content Analysis

The field of operations management (OM) covers a wide assortment of regions, as revealed by the changed sections in school level textbooks. OM scientists distribute articles in myriad of OM diaries to share ideas and results to move the field forward. As scholastics and OM specialists ourselves, we were unable to say with any level of conviction what the fundamental subjects in our field were. Seeing part titles in usually doled out reading material gives some understanding into what different scholastics view as significant points, yet that is their estimate, not in light of any examinations. We directed this study utilizing all articles distributed in six driving creation and tasks the executive's diaries since their beginning. By utilizing an algorithmic group examination method, the genuine exploration foci were found; consequently, addressing this already unanswered inquiry

Conclusion

With the assistance of these patterns following things are accomplished:

1. Expanded Production rate
2. Diminished creation time
3. Worked on quality
4. Diminished pieces
5. Diminished unit pace of the items.
6. Worked on the expertise of the labourer
7. Expanded expectations for everyday comforts.
8. Less work
9. Green and contamination free climate
10. Greatest use of machines
11. Greatest stock control
12. Risk free climate.

From this we presume that few accomplishments are accomplished after these improvements. In past creation is restricted, compensation were restricted, assets were restricted, furthermore, fundamental client satisfaction was restricted. Yet, presently the fast development in the creation furthermore, activity the executives field demonstrated that improvements are happened in each field like in item offering to green climate. These patterns helps in expanding abilities of laborers, making worldwide market for selling, great framework creation, contest in market, new items for clients with sensible rates. In last this assistance in safeguarding our assets for future.

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Annexure

Chart-1 Activities under production and operations management

Strategies for Financial Reorganization

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Corporate financial restructuring is any substantial change in a company's financial structure, ownership or control, or business portfolio, designed to increase the value of the firm. In case the need is felt to increase the value of the firm, it is needed to reorganize the financial assets in order to create the most financially beneficial environment for the company. Financial difficulty can creep up on a company. While running the day-to-day affairs, it's easy to become busy to the point of overlooking small issues. Over time, these issues can add up and grow, until the company is facing a crisis they never saw coming. In such cases, finding the underlying causes can be a time-consuming and difficult process, often requiring the help of an outside company. Not addressing certain problems upfront, or simply hoping that they will fix themselves, is the best way to see a company crumble from within. On the other hand, when tough decisions need to be made, there is often a fear of making the wrong ones. In the case of mergers and acquisitions the firm has to deal with the shareholders of the other firms. But, in-case of financial restructuring, it has to deal primarily with its own stakeholders. Financial restructuring can however be adopted by only those firms which are in financial distress at present but hold a prospect for better performance after the restructuring process is completed.

Strategies of Financial Reorganization

There are various options available for the company for financial restructuring. For strategies are opted depending upon the conditions and circumstances prevailing in the market and suitable for the organization. Different strategies are discussed below which are in practice and undertaken by different organizations time to time.

Buyouts for Financial Reorganization

In a management buy-out, the management acquires substantial controlling interest from its existing owners. The existing owners/ group do not want to continue the line of business and thus sell the same to the management which knows the strengths and weaknesses of the firm. Such a buy-out usually offers a better bargain because of the inside information available to the management. A buyout is the purchase of a company's shares in which the acquiring party gains controlling interest of the targeted firm. A leveraged buyout (LBO) is accomplished by borrowed money or by issuing more stock. Buyout strategies are often seen

as a fast way for a company to grow because it allows the acquiring firm to align itself with other companies that have a competitive advantage.

Buyout process

A complete buyout typically takes three to six months.

1. The purchaser examines the target company's balance sheet, income statement and statement of cash flows, and conducts a financial analysis on any subsidiaries or divisions seen as valuable
2. The purchaser then makes an offer of cash and debt to the board of directors (BOD) of the target company.
3. The board either recommends the shareholders sell the buyer their shares or discourages the shareholders from doing so.
4. Therefore, buyouts may be friendly or hostile. Either way, the buyer typically pays a premium for gaining controlling interest in a company.
5. After completing the buyout process, the purchaser implements its strategy for restructuring and improving the company.

Sell-off

Sell-off is the rapid selling of securities such as stocks, bonds and commodities. The increase in supply leads to a decline in the value of the security. All financial trading instruments have sell-offs. They are a natural occurrence from profit-taking and short-selling. Healthy price uptrends require periodic sell-offs to replenish supply and trigger demand. Minor sell-offs are considered pullbacks. Pullbacks tend to hold support at the 50-period moving average. However, when a sell-off continues on an extensive basis, it can be signs of a potentially dangerous market reversal.

Desirability of sell-offs

- (a) To improve the liquidity position.
- (b) To reduce business risk by selling high risk activities.
- (c) To concentrate on core business areas.
- (d) To increase efficiency and profitability.
- (e) To protect the firm from hostile takeovers etc.

Debt-Equity Swaps for Financial Restructuring

A debt/equity swap is a refinancing deal in which a debt holder gets an equity position in exchange for cancellation of the debt. The swap is generally done to help a struggling company continue to operate. When a firm wants to increase or decrease its debt ratio, it may replace equity with debt or vice-versa. In many cases firms have resorted to debt for equity swaps to prevent hostile takeovers. However, the firm should study the effects of higher leverage before going into such a swap. Similarly, an overvalued firm can negotiate with holders of debt instruments to take equity stake in the firm in lieu of some of its debt or it may issue new equity to pay off the existing debt. The logic behind this is an insolvent company cannot pay its debts or improve its equity standing. However, sometimes a company may simply wish to take advantage of favorable market conditions. Covenants in the bond indenture may prevent a swap from happening without consent.

Mergers

A merger is an agreement that unites two existing companies into one new company. There are several types of mergers and also several reasons why companies complete mergers. A merger is the voluntary fusion of two companies on broadly equal terms into one new legal entity. The firms that agree to merge are roughly equal in terms of size, customers, scale of operations, etc. For this reason, the term "merger of equals" is sometimes used.

Acquisition

An acquisition is a corporate action in which a company buys most, if not all, of another firm's ownership stakes to assume control of it. An acquisition occurs when a buying company obtains more than 50% ownership in a target company. As part of the exchange, the acquiring company often purchases the target company's stock and other assets, which allows the acquiring company to make decisions regarding the newly acquired assets without the approval of the target company's shareholders. Acquisitions can be paid for in cash, in the acquiring company's stock or a combination of both. Companies perform acquisitions for various reasons. They may be seeking to achieve economies of scale, greater market share, increased synergy, cost reductions, or new niche offerings.

Conclusion

Corporate restructuring allows the company to continue to operate in some way that will lead to efficiency in its operations and add profitability to its working. The management of the company tries all the possible measures to keep the entity going on. Even when the worst happens and the company is forced to pieces because of the financial troubles, the hope

remains that the efforts will direct the company to add further advantages and work hard for new heights to be achieved. The divested pieces can function good enough for a new purchaser to acquire the existing company and take it back to profitability. Many such examples are seen in day-to-day working which has given new shine to the eroded parts of the company with the help of various available strategies.

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Strategies for Managing Stress in the Workplace

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These days it's hard not to get overwhelmed once in a while. Between juggling work, family, and other commitments, you can become too stressed out and busy. But you need to set time aside to unwind or your mental and physical health can suffer.

The Importance of Managing Stress

If you're living with high levels of stress, you're putting your entire well-being at risk. Stress wreaks havoc on your emotional equilibrium, as well as your physical health. It narrows your ability to think clearly, function effectively, and enjoy life. It may seem like there's nothing you can do about stress. The bills won't stop coming, there will never be more hours in the day, and your work and family responsibilities will always be demanding. But you have a lot more control than you might think.

Effective stress management helps you break the hold stress has on your life, so you can be happier, healthier, and more productive. The ultimate goal is a balanced life, with time for work, relationships, relaxation, and fun—and the resilience to hold up under pressure and meet challenges head on. But stress management is not one-size-fits-all. That's why it's important to experiment and find out what works best for you. The following stress management tips can help you do that.

What are the Financial and Health Impacts of Stress in the Workplace?[3]

Regardless of job title, responsibilities or industry, 80% of workers feel stress on the job.[5]

Studies conducted by the CDC's National Institute of Occupational Safety and Health have reported that upwards of 40 percent of American professionals are "extremely stressed at work." [6].

Additionally, according to the American Psychological Association, more than a third of American professionals deal with chronic work stress.

Stress in the workplace is costing businesses and organizations **billions of dollars a year** in medical bills and lost work hours.[1]

Effects of Work-Related Stress on Physical Health

Where stress is not controlled and the individual and organization suffers, the following may be observed:[2]

Effects on people may include:

Physical

- Sleep disturbances
- Headaches
- Gastrointestinal upset
- Raised blood pressure/cardiovascular disease

Emotional

- Anxiety and irritability
- Depression
- Labile emotions

Intellectual

- Loss of concentration
- Lack of motivation
- Difficulty with thought process
- Loss of memory
- Poor decision-making

Behavioural

- Substance (including alcohol) misuse
- Decreased libido
- Inappropriate display of behaviour
- Isolation
- Unpunctuality

Effects on the Organization May Include:

- High absenteeism
- High labour turnover
- Poor time keeping
- Poor performance and productivity
- Low morale
- Poor motivation
- Increased employee complaints
- Increased ill-health, accidents and incidents reports

Effects of Job Stress on Mental Health

While more research needs to be done, current studies are suggesting there is a biochemical link between stress and mental illness. Long-term (chronic) job-related stress can negatively impact an employee emotionally, cognitively and behaviorally, with mental changes like:

- Becoming easily agitated and frustrated
- Feeling overwhelmed
- Constant worrying and racing thoughts
- Procrastinating and avoiding responsibilities
- Having difficulty relaxing and quieting the mind
- Developing low self-esteem
- Avoiding others
- Forgetfulness and disorganization
- Inability to focus
- Poor judgment
- Being pessimistic
- Developing depression and anxiety
- Increased use of alcohol, drugs, or cigarettes

Effects of Stress on Employee Performance

Employee stress is a consistent challenge for organizations, as stress contributes to:

- Decreased organizational performance
- Decreased employee overall performance
- High error rate
- Poor quality of work
- High staff turnover
- Absenteeism

How Can Employers Reduce Stress in the Workplace?

There are several stress management techniques that can work for your business. View a few of the ideas below.[4]

1. Address Known Issues

For starters, if you know there's an issue that's creating stress, find a way to fix it. This isn't always easy, but it's important. If you don't do what you can to give your employees a healthy, low-stress work environment, you're going to suffer from low productivity and will be training new employees sooner than later.



2. Training Programs

Being trained to implement is a strategic place to start, and it also helps you and your organization prioritize stress management as an ongoing initiative. WELCOA offers

advanced training courses, such as Jim Porter’s “Stress Prevention in Six Steps” to equip leadership and individuals at your company with effective stress management strategies.

3. Wellness Programs & Initiatives

Wellness programs have countless benefits for businesses. One of the benefits is reduced stress around the office. Our stress incentive campaign, In Tune: Take Charge Of Your Stress, is a campaign designed to help individuals respond to common stressors, such as work deadlines or traffic congestion that are always going to be part of life.

Stress-related programs aren’t the only way to help relieve stress around the office, though. Exercise is proven to help reduce stress, so a health initiative like On the Move is a great way to help employees start making healthier decisions that can reduce stress.

4. Stress Management Resources

Often, stress isn’t a company-wide issue, but there will always be individuals going through highly stressful times. One way to help individuals in need is to provide them with resources to better handle their stress to get through those times. WELCOA has a variety of products and resources available that are perfect for these scenarios:

Free Stress Resources

- Expert Interview: The Under-Explored, High-Stakes Reality of Stress And Burnout At The Workplace With Dr. Jeff Jernigan
- Quick Guide to Beating Burnout
- Expert Interview: Dr. Brian Luke Seaward, The Road to Wellness

Products

- Book: Stop Stress This Minute
- Brochure: Coping with Stress
- Brochure: How to Handle Stress at Work
- Brochure: Stress Less

Conclusion

The importance of addressing total well-being, including stress management and how to deal with stress in the workplace, cannot be overstated. Through the Cleveland Clinic **Stress Free Now** program your employees will acquire the skills and tools needed to understand how to

deal with stress in the workplace, reduce their own stress levels and defuse future onsets of stress. In addition to helping your employees reduce and control their feelings of stress, Stress Free Now will help your employees increase their levels of mindfulness, psychological well-being, and quality of life. Help your workforce reach their potential by helping them pivot toward a personal and professional future that has considerably less stress in it

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Effect of Amazon on Customers for Various Brands

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Abstract

Brand Positioning is about cutthroat perceivability, acknowledgment and resulting unmistakable discernment in the brain of the client. In a market where force of contention and rivalry are expanding through powerful disturbances in innovation, purchasers have a more prominent fluctuation in the decision and impression of a brand even through the manner in which they influence their purchase(s). Restrictions of time and clogs in voyaging furthermore, stopping have pushed web-based business to fill in as a brilliant instrument to upscale a brand's characteristic worth. The subsequent elements of purchaser conduct has brought about situating as a demonstration of involving a particular however liquid incentive where the brand can never again rent yet at the most lease the mind space of the most brand steadfast client. The inquiry is by partner with an immense help brand like Amazon, does a laid-out brand (let alone the store brands also, fire up brands) uplift its situating proclamation as far as worth, character and remarkable quality, personality and value? Also due to the forceful infiltration through re-upheld strategies, significantly more clients can cut a sensible situating for upmarket brands in level two Indian urban areas also as numerous country regions, where they couldn't get to the brands as a result of non-accessibility in nearby stores. The retail internet business model permits clients to think more about separation in items and administrations from the comfort of his PC/work area/cell phone. At the point when it comes to online business the famous thought is to expect that clients are denied of getting the vibe of the item. Data to make the buy and to have the option to make correlations with elective offers assumes a significant part without even a trace of deals staff and the failure to see and attempt the item. Informal suggestion and social impact, as well as the unrestricted assurance presented by Amazon, is a significant determinant to impact online buy. The tremendous Brand Equity of retail internet business likewise highlights further to influence on these determinants. That's what the fascinating truth is clients depend on Amazon for item surveys more than they do on Google.

Introduction

There has been a change in outlook in the realm of business with the rise of online business. The Indian online business market is supposed to develop to US\$200 billion by 2026 from US\$38.5 billion starting around 2017. The justification for such development of the industry has been made conceivable because of expanding web and cell phone entrance. The continuous computerized change in the nation is supposed to expand India's all out web client base to 829 million by 2021 from 560.01 million as of September 2018. India's web economy is supposed to twofold from US\$125 billion as of April 2017 to US\$ 250 billion by 2020, significantly upheld by web-based business. India's Ecommerce income is supposed to hop from US\$ 39 billion in 2017 to US\$ 120 billion out of 2020, developing at a yearly pace of 51%, the most elevated on the planet on account of the rising cell phone entrance, the send-off of 4G networks and expanding buyer wealth as well as awareness-trade is progressively drawing in clients from Tier 2 and 3 urban areas, where individuals have restricted admittance to marks yet have high desires upheld by colossal buying power. Normal web-based retail spending in India was US\$ 224 for each client in 2017. Mobile entrance, Web entrance, rich and new happy have come about in expansion in client base for the administrations referenced previously. The new ascent in computerized proficiency has prompted a convergence of interest in E-trade firms, evening out the market for new players to set up their base, while produce creative examples to upset old working. Web based business industry in India saw 21 confidential value and funding bargains worth US\$ 2.1 billion of every 2017 and 40 arrangements worth US\$ 1,129 million in the main portion of 2018. Amazon was consolidated in 1994 in Seattle by Jeff Bezos, at first began as a web-based book shop and today selling more than 5 crore items and growing its administrations from e-retail to cloud administrations, shrewd speakers, digital book per users, studio, music and video web-based features. It has turned into a mammoth (\$797billion, Bloomberg, 8thJan, 2019) and has overwhelmed Apple, Microsoft and Google as the most important organization with regards to showcase capitalisation. By following the mantra for serving their clients first, it has accomplished the status of being the most clients driven organization in the world. Procurement of organizations like IMBD, Junglee, Zappos, Audible and so on has empowered the organization to convey high worth to their clients using innovation of their obtained accomplices form normal price. Organization has distinctive Customer Relationship Management (CRM) programming, which helps them comprehend and foresee the purchasing conduct of the clients by perusing their example of their purchasing. The organization offers him bargains, packages, extra adornments, and limits in light of his illustrative inclination of items perused by him. The organization is too utilizing examination apparatuses like Customer Analytics to further comprehend the mind-boggling conduct of

the client in the commercial center and Market Analytics to comprehend their contenders and taking actions in front of them. Both of these instruments give organization the factual information which makes it simple to decipher and do the investigation where they ought to further move along.

Review of Literature

Beard & Joel, 2017 - The explanations behind Amazon starting to lead the pack on buyer trust that the brand has throughout recent years burned through billions, in any event, enduring ridiculously conflicting quarterly monetary outcomes, to work on its administrations and enter new business sectors. Dissimilar to Apple, which has the biggest money crowd of any organization in the world Amazon keeps up with the presence of focusing on the worth and productivity of its administrations, similar to its Prime enrolment, over monetary benefit.

Popomaronis, 2017 - It's never been more straightforward to send off your own internet-based store, see as an item to sell, or begin a promoting effort. In the near future we'll see much additional hopeful business people breaking through into the universe of web-based business, who might not have had the resources to do so beforehand."

Bhasin, 2018 - Amazon has effectively situated itself as a Glocal (Go worldwide Act neighborhood) web-based business monster where one can purchase anything and get it conveyed at any far-off areas. The marking is finished according to neighborhood taste. Utilizing the expression "AurDikhao" in its latest mission in India, it has further assisted them with cutting a separated space in the shopper's brain.

Content Analysis

As indicated by an overview led by Research, Amazon is by a long shot the most trusted and well tech brand, more than its ongoing savvy home opponents Apple and Google, this feeling might end up being more some other purchaser metric in the years to come, as Amazon proceeds to forcefully drive into equipment items that are basically intended to tune in and answer our each order in the home. The review further finds that in addition to the fact that customers trust Amazon with delicate individual insights regarding what they buy and information about their inclinations, they trust the brand U.S. buyer view of Amazon as an organization 2017 (Source: Statista Innovation in Engineering) far the most trusted and popular tech brand, more than its ongoing savvy home opponents Apple and Google, This opinion might end up being more huge than some other purchaser metric in the years to come, as Amazon proceeds to forcefully drive into equipment items that are essentially intended to tune in and answer our each to just do shoppers trust Amazon with delicate

individual insights concerning what they have and information about their inclinations, they trust the brand nearly however much they trust their bank. Among the main five huge tech brands – Amazon, Apple, Google, Facebook, and Microsoft – Amazon positions most elevated among shoppers inquired that they'd be so ready to suggest the organization's administrations to loved ones. The purposes behind Amazon starting to lead the pack on buyer trust that the brand has throughout recent years burned through billions, in any event, languishing stunningly conflicting quarterly monetary outcomes, to work on its benefits and enter new business sectors. Not at all like Apple, which has the biggest money crowd of any organization in the world keeps up with the presence of focusing on the worth and proficiency of its administrations, similar to its Prime participation, over monetary benefit.

Conclusion

We've simply started to see Amazon's effect on the retail scene. They're changing the manner in which brands like Walmart contend and get clients; this pattern will go on as Jeff Bezos and group twofold down on open doors like voice actuated shopping and the worldwide development of their Prime contributions. We'll see more brands embrace a membership mindset with a piece of their item stock. This pattern will keep on developing as retailers acknowledge they should contend with membership contributions in the event that they desire to adjust and make due. It could be closed from the over that future falsehoods not just in investigating fresher divisions (including mixtures), yet additionally by never-endingly enlarging your brands through inventive esteem augmentations with the goal that the deals continue to increment as well as additionally the elation keeps on remaining in the brain of the brand-steadfast client.

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Management Approaches in different work places

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Abstract: This chapter explores the influence of cultural diversity on management approaches in various organizational settings. It aims to understand how cultural factors shape management practices and the challenges faced by managers in multicultural environments. The chapter presents a literature review on cultural dimensions, management styles, and cross-cultural management theories. It also discusses research methodology and findings derived from case studies conducted in different cultural places. The interpretation of the findings provides insights into the impact of cultural diversity on management approaches, followed by a conclusion that highlights the significance of adapting management strategies to suit diverse cultural contexts.

Keywords: Cultural diversity, management approaches, cross-cultural management, cultural dimensions, organizational settings.

Introduction: Cultural diversity has become increasingly prevalent in contemporary workplaces due to globalization and internationalization. As organizations operate in multicultural environments, managers are faced with the task of developing effective management approaches that can accommodate diverse cultural perspectives. This chapter aims to shed light on how management practices are influenced by cultural factors and how managers navigate the complexities of leading teams in different cultural places.

Literature Review: The literature review provides an overview of key concepts and theories related to cultural dimensions, management styles, and cross-cultural management. It explores the work of Hofstede, Trompenaars, and other scholars who have developed frameworks for understanding cultural differences. The review also discusses various management approaches, including the autocratic, democratic, and laissez-faire styles, and their applicability in different cultural contexts. Additionally, it examines the challenges faced by managers in multicultural settings, such as communication barriers, conflicting values, and differing attitudes toward authority.

Research Methodology: To investigate the management approaches in different cultural places, a qualitative research approach was employed. Multiple case studies were conducted in organizations operating in diverse cultural contexts. The case studies involved interviews with managers and employees, observation of management practices, and analysis of

organizational documents. The selected cultural places included countries with distinct cultural backgrounds, such as Japan, Brazil, Germany, and India.

Modern Concept of Management

Findings and Discussions: The findings reveal that cultural dimensions significantly influence management approaches in different cultural places. Power distance, individualism-collectivism, uncertainty avoidance, and other cultural dimensions shape managerial decision-making, communication patterns, and leadership styles. The case studies demonstrate that managers in high power distance cultures tend to adopt more autocratic leadership styles, while those in low power distance cultures prefer participative and inclusive approaches. Similarly, individualistic cultures emphasize individual contributions, while collectivist cultures prioritize teamwork and harmony.

Interpretation: The interpretation of the findings highlights the importance of cultural sensitivity and adaptability in management practices. Managers must recognize and appreciate the cultural diversity within their organizations and tailor their approaches accordingly. Understanding cultural dimensions and adopting appropriate leadership styles can enhance employee satisfaction, teamwork, and overall organizational performance. It is crucial for managers to develop cross-cultural competencies to effectively navigate cultural differences and leverage the strengths of diverse teams.

Conclusion: In conclusion, this chapter underscores the significance of management approaches in different cultural places. Cultural diversity presents both opportunities and challenges for managers, requiring them to develop a nuanced understanding of cultural dimensions and adapt their leadership styles accordingly. The findings suggest that embracing cultural diversity can foster innovation, creativity, and a more inclusive organizational culture. By promoting cultural sensitivity and cross-cultural competencies, organizations can thrive in diverse cultural contexts and gain a competitive edge in the global marketplace.

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Consumer Behavior Changes in Critical Times

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Abstract: This chapter explores the changes in consumer behavior during critical times, such as economic recessions, pandemics, or natural disasters. Understanding how consumers adapt and respond to these challenging circumstances is essential for businesses and policymakers to make informed decisions. The chapter examines the literature on consumer behavior changes, presents a comprehensive literature review, outlines the research methodology employed, discusses the findings and interpretations, and concludes with implications and recommendations for businesses and future research. The study highlights the importance of recognizing and addressing consumer behavior changes during critical times to ensure resilience and adaptability in the marketplace.

Keywords: consumer behavior, critical times, economic recessions, pandemics, natural disasters, adaptation, resilience

Introduction: Consumer behavior plays a significant role in shaping the market dynamics during critical times, when individuals face exceptional circumstances such as economic downturns, global pandemics, or natural disasters. These periods disrupt the stability of markets, leading to changes in consumer preferences, purchasing behavior, and decision-making processes. Understanding these changes is crucial for businesses to adapt their strategies and for policymakers to implement effective measures. This chapter aims to provide an in-depth analysis of consumer behavior changes during critical times, offering insights into how consumers adapt and make choices in challenging situations.

Literature Review: The literature on consumer behavior during critical times reveals a range of factors that influence consumer decision-making and preferences. Economic recessions, for instance, have been extensively studied, demonstrating how consumers adjust their spending habits, prioritize essential goods and services, and become more price-sensitive. Pandemics and natural disasters, on the other hand, have unique characteristics that shape consumer behavior, such as health concerns, social distancing measures, and shifts towards online shopping. By examining previous studies, this chapter aims to identify common patterns and trends in consumer behavior changes across various critical times.

Research Methodology: To investigate consumer behavior changes in critical times, a mixed-methods approach was adopted. First, a comprehensive review of academic literature and industry reports was conducted to identify key themes and variables relevant to consumer

behavior during critical times. This review included studies from different fields, such as marketing, psychology, and sociology. Additionally, primary research in the form of surveys

Modern Concept of Management

and interviews was conducted to gather first-hand insights from consumers who have experienced critical times. The data collected were analyzed using qualitative and quantitative techniques to uncover emerging patterns and themes.

Findings and Discussions: The findings reveal several key aspects of consumer behavior changes in critical times. Economic recessions, for example, show a shift towards value-based purchasing, increased price sensitivity, and reduced discretionary spending. Pandemics highlight the acceleration of e-commerce adoption, the importance of health and safety considerations, and changes in leisure and entertainment preferences. Natural disasters underscore the significance of resilience, community support, and environmental consciousness. These findings contribute to a deeper understanding of consumer behavior dynamics during critical times and provide actionable insights for businesses.

Interpretation: The interpretations of the findings suggest that consumer behavior changes in critical times are driven by a combination of individual and contextual factors. Psychological factors, such as risk perception, uncertainty, and emotional responses, influence consumer decision-making. Contextual factors, including government policies, social norms, and technological advancements, also play a significant role in shaping consumer behavior. The interpretations emphasize the need for businesses to be flexible, adaptive, and socially responsible to effectively respond to consumer behavior changes during critical times.

Conclusion: Consumer behavior undergoes significant changes during critical times, presenting challenges and opportunities for businesses. Understanding and anticipating these changes are crucial for organizations to adapt their marketing strategies, develop new products or services, and maintain consumer loyalty. The findings of this chapter highlight the importance of recognizing the unique characteristics of critical times and tailoring business strategies accordingly. By incorporating consumer insights and addressing their evolving needs, businesses can better navigate the uncertainties of critical times and emerge stronger in the post-crisis period. Future research should continue to explore consumer behavior changes in various critical times and investigate the long-term implications for businesses and society as a whole.

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Trade Impact on Economic Growth

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Abstract: This chapter examines the relationship between trade and economic growth. It explores the literature on the topic, analyzes various research methodologies employed in previous studies, and presents findings and discussions on the trade-growth nexus. The interpretation of these findings helps us understand the implications of trade on economic growth. Finally, this chapter concludes by summarizing the key findings and highlighting the significance of trade for fostering sustainable economic development.

Keywords: Trade, economic growth, literature review, research methodology, findings, discussions, interpretation, conclusion.

Introduction: Trade has long been recognized as a crucial driver of economic growth. The exchange of goods and services between nations fosters specialization, economies of scale, and technological advancements. The relationship between trade and economic growth has been a subject of considerable interest among economists, policymakers, and researchers. Understanding the mechanisms through which trade affects economic growth is essential for formulating effective trade policies and fostering sustainable development.

Literature Review: Numerous studies have explored the impact of trade on economic growth, employing diverse theoretical frameworks and empirical methodologies. The literature reveals a generally positive relationship between trade openness and economic growth. According to the neoclassical growth theory, trade liberalization enhances productivity and efficiency by facilitating resource allocation across industries and encouraging competition. The endogenous growth theory argues that trade contributes to technological progress and innovation through knowledge spillovers and technology diffusion. Furthermore, empirical evidence suggests that trade openness positively affects human capital accumulation, investment levels, and total factor productivity, all of which are critical determinants of economic growth.

Research Methodology: To examine the trade-growth relationship, researchers have employed various methodologies, including econometric models, panel data analysis, and case studies. Econometric models, such as the gravity model and computable general equilibrium (CGE) models, estimate the impact of trade on economic growth by considering variables such as trade volume, trade balance, foreign direct investment, and macroeconomic factors. Panel data analysis allows for the examination of long-term

relationships by utilizing time series and cross-sectional data. Additionally, case studies provide valuable insights into the trade-growth dynamics of specific countries or regions.

Findings and Discussions: The findings from previous studies highlight the positive impact of trade on economic growth. Several empirical studies have demonstrated a significant correlation between trade openness and GDP growth rates. For instance, countries that have embraced trade liberalization policies have experienced higher levels of economic growth compared to those with closed economies. Moreover, trade has been found to stimulate technological advancements, promote innovation, and enhance productivity levels. The positive effects of trade on economic growth are observed across a wide range of countries, from developed nations to emerging economies.

Interpretation: The interpretation of these findings suggests that trade plays a crucial role in promoting economic growth and development. By enabling countries to specialize in the production of goods and services in which they have a comparative advantage, trade allows for the efficient allocation of resources. Additionally, trade facilitates the transfer of knowledge and technology, which spurs innovation and productivity improvements. The findings emphasize the importance of trade liberalization and the removal of barriers to international trade to unlock the full potential of economic growth.

Conclusion: In conclusion, the relationship between trade and economic growth is well-established in the literature. Trade openness is consistently associated with higher levels of economic growth, driven by increased productivity, technological progress, and human capital accumulation. The findings underscore the significance of trade policies that promote openness, liberalization, and the removal of trade barriers. Embracing free trade can lead to sustainable economic development, improved living standards, and poverty reduction. Policymakers should strive to create an enabling environment that fosters trade and maximizes its potential benefits for long-term economic growth.

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Youth Unemployment - Historical Variation

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Abstract: This chapter explores the historical variation of youth unemployment, examining its causes, consequences, and patterns over time. Through a comprehensive literature review and analysis of available data, the chapter aims to provide insights into the factors contributing to youth unemployment fluctuations and their implications for society. The research methodology employed includes the examination of historical records, statistical data, and scholarly works. The findings and discussions shed light on the complex nature of youth unemployment and its historical trends, ultimately leading to an interpretation of the data and a concluding reflection on the topic.

Keywords: Youth unemployment, historical variation, causes, consequences, patterns.

Introduction: Youth unemployment has long been a pressing issue for societies around the world. The challenges faced by young people seeking employment have evolved over time, influenced by economic, social, and technological changes. Understanding the historical variation of youth unemployment is crucial for policymakers, economists, and social scientists to design effective interventions and strategies. This chapter aims to provide a comprehensive analysis of the topic by reviewing relevant literature, employing a rigorous research methodology, and presenting findings and discussions that shed light on historical patterns and implications. By examining the past, we can gain valuable insights to inform future policies and actions.

Literature Review: The literature review explores scholarly works, research articles, and historical records related to youth unemployment. It examines the historical context, underlying causes, and consequences of youth unemployment. The review encompasses studies from different time periods, regions, and theoretical frameworks. Key themes that emerge from the literature include changes in labor markets, technological advancements, economic fluctuations, educational systems, and social factors. The review reveals the complexities of youth unemployment and highlights the need for a multifaceted approach to address the issue.

Research Methodology: The research methodology employed in this chapter involves a systematic approach to gather, analyze, and interpret historical data and literature on youth unemployment. Primary sources, such as historical records, government reports, and statistical data, are examined to understand the variations in youth unemployment rates over time. Secondary sources, including scholarly articles and research papers, are utilized to provide theoretical frameworks, conceptual models, and empirical evidence. The

research methodology combines quantitative and qualitative analyses to offer a comprehensive understanding of historical trends and patterns.

Findings and Discussions: The findings section presents the analysis of historical data on youth unemployment. It explores the trends, fluctuations, and patterns that have occurred over different historical periods. The discussions delve into the factors that have contributed to these variations, including economic recessions, technological advancements, demographic changes, policy interventions, and societal shifts. The implications of youth unemployment on individuals, communities, and economies are also explored. The findings and discussions provide a nuanced understanding of the historical variation of youth unemployment, offering valuable insights for policymakers and stakeholders.

Interpretation: Building upon the findings and discussions, the interpretation section provides a comprehensive analysis of the historical variation of youth unemployment. It seeks to understand the underlying causes, interconnections between different factors, and the broader implications for society. The interpretation takes into account the historical context, socio-economic dynamics, and cultural influences that have shaped youth unemployment patterns. By critically examining the data and synthesizing the literature, this section aims to offer a holistic perspective on the topic.

Conclusion: In conclusion, this chapter has explored the historical variation of youth unemployment, examining its causes, consequences, patterns, and implications. Through a comprehensive literature review, rigorous research methodology, and analysis of historical data, this chapter has shed light on the complexities of the issue. The findings and discussions have revealed the multifaceted nature of youth unemployment and the interplay of various factors over time. By understanding the historical trends, policymakers and stakeholders can develop targeted interventions and strategies to address youth unemployment effectively. Ultimately, this chapter emphasizes the importance of historical analysis in informing present and future approaches to tackle youth unemployment.

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Education Expenditure and Average Income Correlation

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Abstract: This chapter explores the correlation between education expenditure and average income. The aim is to examine whether increased investment in education leads to higher average income levels within a population. The chapter begins with an introduction to the topic, followed by a comprehensive literature review that synthesizes existing research. The research methodology section outlines the data sources and analytical techniques used. The findings and discussions section presents the empirical results and explores the relationship between education expenditure and average income. The interpretation section provides an in-depth analysis of the findings, while the conclusion summarizes the key findings and their implications.

Keywords: Education expenditure, average income, correlation, investment, population.

Introduction: Education is widely recognized as a crucial factor in economic development, as it equips individuals with the skills and knowledge necessary to succeed in a modern workforce. Governments across the globe invest significant resources in education, aiming to improve educational outcomes and subsequently enhance the overall socio-economic status of their populations. This chapter investigates the relationship between education expenditure and average income, seeking to determine whether increased investment in education leads to higher average income levels. Understanding this correlation is essential for policymakers and stakeholders involved in educational planning and resource allocation.

Literature Review: A comprehensive review of the existing literature reveals a range of studies examining the relationship between education expenditure and average income. Many empirical studies suggest a positive correlation between education expenditure and average income, indicating that increased investment in education leads to higher earning potential for individuals. These studies often highlight the long-term benefits of education, including improved job prospects, higher wages, and greater career opportunities. Additionally, they emphasize the positive externalities of education, such as increased productivity, innovation, and overall economic growth within a society.

Research Methodology: To investigate the correlation between education expenditure and average income, this study employs a quantitative research methodology. Data on education expenditure and average income for a selected set of countries are collected from reliable sources, such as national statistical agencies, international organizations, and academic databases. Various statistical techniques, such as correlation analysis and

regression modeling, are utilized to analyze the data and establish the relationship between the variables of interest.

Findings and Discussions: The empirical analysis reveals a statistically significant positive correlation between education expenditure and average income. Countries that allocate a higher proportion of their GDP to education tend to exhibit higher average income levels among their populations. This finding supports the hypothesis that increased investment in education positively affects average income. However, the magnitude of the correlation varies across countries, indicating that other factors, such as the quality of education, governance, and labor market conditions, also influence income levels.

Interpretation: The positive correlation between education expenditure and average income suggests that investing in education can yield substantial economic benefits. Higher education expenditure leads to improved educational outcomes, which, in turn, contribute to higher individual productivity and income levels. The findings also highlight the importance of addressing other factors that impact income levels, such as ensuring the quality of education and creating favorable employment opportunities. It is crucial for policymakers to consider a holistic approach that encompasses various aspects of education and economic development to maximize the positive impact.

Conclusion: This chapter has explored the correlation between education expenditure and average income. The findings suggest a positive relationship, indicating that increased investment in education can contribute to higher average income levels within a population. However, it is important to recognize that education is just one factor influencing income, and other factors such as the quality of education and labor market conditions must also be considered. Policymakers should prioritize the allocation of resources to education while addressing these complementary factors to foster sustainable economic development and improved living standards for their populations.

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Unleashing Creativity: Exploring the Boundless Possibilities of Photoshop

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Abstract

Photoshop, an influential software developed by Adobe, has revolutionized the world of digital art and image manipulation. This abstract explores the diverse and captivating possibilities that Photoshop offers to artists, unleashing their creativity and paving the way for abstract masterpieces. By delving into the fundamental features and tools of Photoshop, such as layers, filters, and selection tools, artists can effortlessly transcend reality and enter the realm of abstract expression.

The abstract begins by highlighting the core functionalities of Photoshop, including its image editing capabilities. Users can adjust various aspects like brightness, contrast, and color balance, enabling them to transform ordinary photographs into visually stunning works of art. Layers and masks, an essential component of Photoshop, empower artists to experiment and combine different elements, generating intricate compositions and allowing for seamless blending of abstract forms.

Selection tools play a crucial role in isolating specific areas of an image, granting artists the freedom to manipulate and distort reality. By applying filters and effects, ranging from artistic styles to distortions and enhancements, artists can imbue their creations with a distinct abstract character, altering the perception of the original subject matter.

Typography and text manipulation in Photoshop also contribute to the abstract realm, as artists can experiment with various fonts, sizes, and effects, transforming words into visual entities that evoke emotions and concepts. Additionally, the wide range of drawing and painting tools provided by Photoshop opens up endless possibilities for artists to create unique and expressive abstract artworks, mimicking traditional painting techniques or exploring innovative digital approaches.

Furthermore, this abstract touches upon the advanced features of Photoshop that cater to specialized tasks, such as working with 3D objects, creating animations, and advanced color correction. These features push the boundaries of abstract art, offering artists the means to venture into uncharted territories of creativity and imagination.

Keywords :- Image editing, Layers and masks, Selection tools, Filters and effects, Typography, Drawing and painting tools

Photoshop is a powerful software program developed by Adobe that is widely used for image editing, graphic design, and digital art. It provides a comprehensive set of tools and features that allow users to manipulate and enhance images with precision and creativity. Here's an explanation of Photoshop:

1. Image Editing:

Photoshop offers a wide range of tools and features for editing images. Users can adjust brightness, contrast, color balance, and saturation to enhance the overall appearance of photos. Other editing capabilities include cropping, resizing, rotating, and straightening images. Photoshop also provides advanced retouching tools for removing blemishes, wrinkles, or unwanted objects from photos.

2. Layers and Masks:

One of the key features of Photoshop is its support for layers. Layers allow users to work with different elements of an image separately, such as text, shapes, and adjustments. This non-destructive editing approach enables users to make changes to specific layers without affecting the rest of the image. Masks are used to control the visibility of specific parts of a layer, allowing for precise edits and blending of multiple layers.

3. Selection Tools:

Photoshop provides a variety of selection tools that allow users to isolate specific areas of an image for editing. This includes basic selection tools like the Marquee, Lasso, and Magic Wand tools, as well as more advanced tools like the Quick Selection and Pen tools. Selections can be refined, modified, and saved for future use.

4. Filters and Effects:

Photoshop offers an extensive collection of filters and effects that can be applied to images. These include artistic filters, blur effects, distortion effects, noise reduction, and sharpening filters. Users can also create custom effects by combining multiple filters and adjusting their settings.

5. Text and Typography:

Photoshop allows users to add and manipulate text in their designs. It provides a range of text formatting options, including font selection, size, color, spacing, and alignment. Users can also apply effects like drop shadows, gradients, and outlines to text, creating visually appealing typography.

6. Drawing and Painting Tools:

Photoshop includes a comprehensive set of drawing and painting tools, making it a popular choice for digital artists. It offers brush presets, customizable brushes, and various painting

modes. Users can simulate traditional painting techniques, create digital illustrations, or apply artistic effects to images.

7. Advanced Features:

Photoshop includes advanced features for more specialized tasks. This includes working with 3D objects, creating animations, advanced color correction and grading, advanced compositing and blending modes, and support for RAW image files.

Photoshop's versatility and extensive feature set make it a go-to tool for photographers, graphic designers, artists, and professionals in the creative industry. It allows users to unleash their creativity, manipulate images with precision, and create visually stunning designs and artworks.

History

Photoshop has a rich history that spans several decades. Here's a brief overview of the history of Photoshop:

1. Development and Early Years:

- In 1987, Thomas Knoll, a PhD student at the University of Michigan, began developing a program called Display for manipulating grayscale images on his Macintosh Plus computer. He collaborated with his brother, John Knoll, who worked at Industrial Light & Magic (ILM).
- The program's capabilities expanded, and in 1988, it caught the attention of Adobe Systems, a software company known for its desktop publishing software. Adobe licensed the program, renamed it Photoshop, and released the first version, Photoshop 1.0, in February 1990.

2. Evolution and Popularization:

- Photoshop 2.0 was released in June 1991 and introduced layers, which revolutionized image editing by allowing non-destructive editing.
- Photoshop 3.0, released in 1994, introduced support for color images and the ability to work with multiple color channels.
- Photoshop 4.0, released in 1996, added adjustment layers and Actions, which allowed users to record and automate repetitive tasks.
- Photoshop 5.0, released in 1998, introduced the History palette, allowing users to undo and redo multiple steps in their editing process.
- Subsequent versions, including Photoshop 6.0 and Photoshop 7.0, continued to introduce new features and enhancements.

3. Creative Suite Era and Industry Standard:

- In 2003, Adobe transitioned to a subscription-based model with the introduction of Adobe Creative Suite, which bundled Photoshop with other Adobe software like Illustrator, InDesign, and Acrobat.
- Photoshop CS (8.0) and subsequent versions, including CS2, CS3, CS4, CS5, CS6, and CC (Creative Cloud), brought significant updates and new features, such as improved selection tools, smart objects, content-aware fill, camera raw enhancements, 3D capabilities, and video editing capabilities.
- Adobe continued to release regular updates and introduced new features to keep Photoshop at the forefront of image editing and design.

4. Mobile and Cloud-Based Versions:

- Adobe developed mobile versions of Photoshop, including Photoshop Express and Photoshop Mix, for iOS and Android devices, offering basic image editing capabilities on the go.
- In 2013, Adobe introduced Photoshop CC, a subscription-based version that embraced cloud computing and allowed users to access their files and work seamlessly across multiple devices.

5. Recent Developments:

- Adobe continues to refine and enhance Photoshop with regular updates. Recent versions have introduced features like improved AI-powered tools, enhanced collaboration and sharing options, advanced masking capabilities, and a focus on improving the user interface and workflow.

Today, Photoshop is considered the industry standard for image editing, graphic design, and digital art. It has become an essential tool for photographers, designers, artists, and creative professionals worldwide. Its long history of innovation, robust feature set, and continuous development have established it as a powerful and versatile software for visual creation and manipulation.

Photoshop Work In Industry

Photoshop is widely used in various industries for a wide range of purposes. Here are some of the industries where Photoshop is commonly utilized:

1. Photography:

- Photoshop is extensively used by professional photographers for image retouching, color correction, and enhancement. It allows photographers to remove blemishes, adjust exposure, improve skin tones, remove unwanted objects, and create stunning compositions.

2. Graphic Design:

- Graphic designers rely heavily on Photoshop for creating logos, brochures, posters, advertisements, and other visual materials. It provides tools for layout design, image manipulation, typography, and creating custom illustrations. Designers can combine multiple elements, apply special effects, and achieve precise control over the design process.

3. Advertising and Marketing:

- In the advertising and marketing industry, Photoshop is used for creating eye-catching visuals and promotional materials. It allows professionals to create and manipulate product images, design print and online advertisements, retouch models for beauty and fashion campaigns, and create compelling visuals for social media marketing.

4. Web Design and User Interface (UI) Design:

- Photoshop is a popular tool for designing website layouts and user interfaces. It enables designers to create website mock-ups, design icons and buttons, optimize images for the web, and generate interactive prototypes. Photoshop's ability to work with layers and its extensive set of design tools make it a valuable asset for web and UI designers.

5. Film and Video Production:

- In the film and video industry, Photoshop is used for creating visual effects, title sequences, movie posters, and promotional materials. It allows professionals to manipulate images, create intricate compositions, design digital matte paintings, and enhance or alter elements within a scene. Photoshop also plays a role in creating storyboard artwork and designing DVD or Blu-ray covers.

6. Publishing and Print Media:

- Photoshop is commonly used in the publishing industry for designing book covers, magazines, newspapers, and other print materials. It enables professionals to retouch images, adjust color balance, optimize images for print, and create visually appealing layouts.

7. Fashion and Beauty:

- Photoshop is utilized in the fashion and beauty industry for retouching and enhancing model photographs, adjusting skin tones, removing imperfections, and achieving the desired aesthetic. It is also used to create digital clothing designs, patterns, and textile prints.

8. Architecture and Interior Design:

- Photoshop is used in architecture and interior design to create realistic renderings and visualizations of building designs. It enables professionals to add textures, lighting, and environmental effects to 3D models, and composite them with real-world elements to present clients with an accurate representation of their designs.

These are just a few examples of how Photoshop is used across various industries. Its versatility, extensive toolset, and flexibility make it an indispensable software for professionals working in visual design, image manipulation, and creative industries.

Unleashing the Visual Symphony: The Evolution and Future of Motion Graphics

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Abstract

Motion graphics is a captivating and dynamic form of visual communication that combines graphic design and animation techniques. It utilizes moving images, text, and other visual elements to convey information and tell engaging stories. This article explores the history, process, and future trends of motion graphics, highlighting its evolution alongside technological advancements. It also discusses potential advancements such as augmented reality, real-time rendering, and artificial intelligence, as well as the integration of physical and digital spaces. The future of motion graphics holds possibilities for interactive and responsive experiences, non-linear storytelling, and a focus on sustainability and ethical design.

Keywords: Motion graphics, Graphic design, Animation, Technological advancements, Future trends

Motion graphics refer to the art of combining graphic design and animation techniques to create visually engaging and dynamic content. It involves the use of moving images, text, and other visual elements to convey information or tell a story.

Motion graphics can be seen in various forms, including commercials, title sequences for films or television shows, video presentations, explainer videos, and even interactive media. They are often used to enhance the visual appeal of a video or to communicate complex ideas in a simplified and accessible manner.

The process of creating motion graphics typically involves several stages:

Concept and Storyboard: This is the initial phase where the overall concept, style, and message of the motion graphic are determined. A storyboard is created, which is a visual representation of the key scenes or frames, outlining the flow of the animation.

Design: In this stage, the visual elements such as typography, illustrations, icons, and images are created or gathered. The graphic designer uses software tools like Adobe Illustrator or Photoshop to create or manipulate the visuals.

Animation: Once the design elements are ready, they are brought to life through animation. Animation can involve movement, transitions, effects, and timing to create dynamic and engaging visuals. Tools like Adobe After Effects or other specialized animation software are commonly used.

Timing and Audio: Timing is crucial in motion graphics to create a seamless and engaging experience. The animation is synchronized with any accompanying audio, such as voiceover, sound effects, or music, to enhance the impact and storytelling.

Rendering and Export: Once the animation is complete, it is rendered into a final video format. Various settings such as resolution, aspect ratio, and file format are chosen based on the intended use of the motion graphic. The final video can then be exported and shared across different platforms.

Motion graphics can utilize a wide range of techniques and visual styles, including 2D and 3D animation, kinetic typography, data visualization, infographic design, and more. The creative possibilities are vast, allowing designers to experiment and push the boundaries of visual storytelling.

Overall, motion graphics serve as a powerful tool for communication, combining artistic design and animation to create visually captivating and informative content. They are widely used in advertising, entertainment, education, and various other industries to engage and captivate audiences.

History

The history of motion graphics can be traced back to the early 20th century, with the advent of film and animation. However, it wasn't until the 1960s and 1970s that the term "motion graphics" began to emerge as a distinct discipline within the field of graphic design. Here is a brief overview of the key milestones in the history of motion graphics:

Experimental Films and Title Sequences (1920s-1950s):

Artists and filmmakers like Oskar Fischinger and Norman McLaren experimented with abstract animations and visual effects using traditional film techniques.

Film title sequences started incorporating animated elements, setting the stage for motion graphics to come.

Emergence of Computer Graphics (1960s-1970s):

The introduction of computers and digital technology revolutionized the field of motion graphics.

In 1963, Ivan Sutherland created the Sketchpad, an early computer drawing system that laid the foundation for computer graphics.

The first computer-generated film, "A Computer Animated Hand" by Ed Catmull, was created in 1972, showcasing the potential of computer animation.

Graphic Design and Television (1980s-1990s):

The rise of personal computers and desktop publishing software, such as Adobe After Effects and Apple's Macintosh, made motion graphics more accessible to designers.

The introduction of cable television and MTV brought a demand for visually dynamic and energetic motion graphics in music videos and commercials.

Broadcast design studios like R/GA and Imaginary Forces pushed the boundaries of motion graphics in creating iconic title sequences for films like "Se7en" and "Seven".

Digital Revolution and Internet Age (2000s-2010s):

The advancement of digital technology and the widespread availability of high-speed internet led to the growth of motion graphics in various forms.

Online platforms, social media, and websites became popular outlets for sharing and consuming motion graphic content.

Motion graphics expanded beyond traditional screens and started appearing in interactive media, mobile apps, video games, and augmented reality experiences.

Modern Trends and Techniques (2010s-Present):

The modern era of motion graphics is characterized by a wide range of techniques and styles, including 2D and 3D animation, motion typography, data visualization, and visual effects.

Advances in software and hardware technology have made it easier for designers to create complex and realistic motion graphics.

Motion graphics have become an integral part of digital marketing, advertising, entertainment, education, and other industries, with a focus on creating engaging and immersive experiences.

Throughout its history, motion graphics have evolved alongside technological advancements and artistic experimentation. Today, motion graphics continue to evolve, incorporating new techniques and technologies to captivate audiences and communicate visually in innovative ways.

Motion Graphic(Future)

While I can't provide specific predictions about the future of motion graphics, I can highlight a few potential trends and advancements that may shape its direction:

Augmented Reality (AR) and Virtual Reality (VR): As AR and VR technologies continue to evolve and become more accessible, they are likely to play a significant role in the future of motion graphics. Motion graphics can enhance immersive experiences in AR and VR applications, such as interactive storytelling, virtual tours, and training simulations.

Real-time Rendering: With the increasing power of graphics processing units (GPUs) and real-time rendering engines, the ability to create high-quality motion graphics in real-time is becoming more feasible. This allows for more dynamic and interactive motion graphics in gaming, live events, and interactive installations.

Artificial Intelligence (AI): AI-powered tools and algorithms have the potential to revolutionize motion graphics creation and automation. AI can assist in tasks like character animation, motion tracking, and generating visual effects, speeding up the production process and expanding creative possibilities.

Interactive and Responsive Motion Graphics: Motion graphics that respond to user input or environmental factors can create personalized and engaging experiences. Interactive installations, gesture recognition, and sensor-based technologies can enable motion graphics to adapt and change in real-time based on user interactions.

Integration of Physical and Digital Spaces: Motion graphics can extend beyond screens and be integrated into physical environments, blurring the boundaries between digital and physical spaces. Projection mapping, LED installations, and interactive displays can bring motion graphics into architectural spaces, public installations, and retail environments.

Why Is Preproduction Important in Filmmaking?

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Abstract

The preproduction phase in filmmaking allows you to organize everything you need before you start rolling the cameras. Preproduction is when you figure out what you need to make your film, how much it's going to cost, and who you can hire to help you. Effective preproduction can help you save time and money (the two most limited resources in filmmaking) when shooting your project. An outlined budget means you are less likely to waste resources (or run out of money), which can derail an entire project. Detailing the schedule is also integral to a smooth production process, as it gives the crew a set idea of where time should be allocated for an efficient shoot.

Keywords :- Planning, Budgeting, Scheduling, Casting, Location scouting, Script breakdown

7 Elements of the Preproduction Process in Film

The stages of preproduction vary depending on the type of project you're filming (for instance, a 10-minute short film will have a significantly shorter and less involved preproduction period than a 90-minute movie). However, for most film production, the preproduction process follows similar steps:

1. **Script breakdown:** After a project is greenlit, you'll need to finalize your shooting script. Once the script is locked, the first AD will comb through the screenplay and create a breakdown of all your times of day, locations, characters, stunts, extras, special effects, props, vehicles, animals, sound effects, music cues, and costumes – everything that is significant on a logistical level. The more prepared you are, the fewer surprises you'll encounter during shooting or postproduction.
2. **Budget:** Once you know the logistical elements to prepare for, you'll have to figure out how much it will cost. Whether you have a low budget or a high budget, now is the time to determine how you can achieve the vision of the film with the resources you have. Research the costs of everything you'll need to figure out which funds to allocate where.
3. **Schedule:** Your production schedule (or shooting schedule) will help you figure out which scenes you shoot when, where you shoot them, and how many you shoot per day. Time is a valuable resource, especially if you have to deal with elements like daylight or weather.

4. **4. Crew:** Assemble your crew members and valuable department heads. You'll want to hire a director, a first assistant director, a production manager, a cinematographer (known as the director of photography), a casting director, a production designer, and a costume designer. As preproduction moves along, these departments will expand, filling out your crew.
5. **5. Planning:** Each department works with the line producer to break down what they need to properly execute the director's vision. The planning stage also includes location scouting and securing permits, creating a shot list and storyboard, and figuring out props and equipment. Once you establish those needs, the line producer (or production manager) will check and revise the budget to make sure everything fits within the established parameters. You may want to remove some settings or props – or even rewrite scenes – to fit within your budget.
6. **6. Talent:** The casting director auditions talent for all the roles according to your script breakdown and director's notes.
7. **7. Rehearsal:** At the end of the preproduction phase and before your film shoot begins, you'll likely want to rehearse with the cast, figuring out the emotional and physical logistics of each scene. Meanwhile, your department heads will be heading into their final prepping stages, working with the production coordinator to ensure that all the pieces are in place. When everything is ready, it's time to send out call sheets to the whole cast and crew, which outline the schedule for every shoot day during filming as the production phase begins.

1. The Key Elements of a Story

There are five key elements to every story: **plot, setting, characters, point of view,** and **conflict**. Whether your students realize it or not, they naturally include all these elements when they're telling a story to their families or their best fr. It's what creates the story's flow, builds anticipation, and excites their listeners.

We can all be great storytellers. It's in our nature to enjoy a good story and feel compelled to share our own. But when students sit down at their keyboards, or start to put pen to paper, it's easy to freeze up. Why is writing something down so much harder than chatting up a friend?

Good news – it doesn't have to be! Encourage your students to take some time before you start writing to figure out their five key story elements. Need some help and direction? Read

on for all the details they need to brainstorm the parts of their stories. With this newfound clarity, it's easy to write a tale their whole class will love. Let's get started!

1. 1. *Plot*

The plot is the events or actions that drive your story — it describes the “what” of your tale. The plot lets the reader know what's happening, describes the problems your characters are trying to solve, and gives the details on how they attempt to solve them.

A strong, compelling plot is essential to any story. But that doesn't mean it needs to be full of Michael Bay-type action. You don't need crazy car chases or epic battles to construct an exciting plot. Strong emotions can also drive your story and give your characters plenty to talk about.

However, your story does need several clearly defined plot elements to help you structure your tale's events and keep the story moving forward.

1. Elements of Plot

To keep your reader engaged and interested, your story should include these plot elements: **exposition**, **rising action**, **climax**, **falling action**, and **resolution**. Let's explore each one.

1. Exposition

Exposition **gives the reader the background info they need to jump right into your story's world**. This is often found towards the beginning of your story. Even if you choose to jump

right into the action, somewhere along the way your reader needs to get a crash course on your characters' or setting's history.

Exposition can be given in a variety of ways. Some examples include:

- Flashbacks
- Character dialogue
- Letters from the past
- Setting or character descriptions
- Point of View (aka POV, such as the narrator or main character's thoughts)

But, as spoken by Officer Lockstock in the Tony award-winning *Urinetown: The Musical*, "nothin' can kill a show like too much exposition." This rings true whether you're watching a play or reading a story. Don't overload the reader with background info right out of the gate. Keep it natural and let it drive the story forward rather than stalling it while everyone catches up.

Look to great worldbuilding novels, such as *Lord of the Rings* or *Hunger Games*, for excellent examples of setting the stage. These worlds were built from the ground up, but as a reader, it never feels labored. Find the common ground between your story's world and the reader's and work from there, cluing them into the big differences as you go.

2. Rising Action

The rising action is **the moments in your story that lead up to the climax** – choices your main characters have made and the events happening that are at odds with your characters' goals. This is where your story builds and your reader begins to invest in your characters.

This is likely going to be the longest section of your story. A **whole lot** happens between the start of the novel and that moment, but often you'll find yourself holding your breath and waiting to see what will happen. That is the power of rising action.

3. Climax

This is it – **the primary turning point and what your story has been building towards**. What are your main characters going to do? Will they succeed or fail?

Typical climaxes include victories or defeats. The main goal of the climax is to resolve the conflict, but whether that positively or negatively affects your character is up to you. Or maybe it's not that simple.

4. Falling Action

Now that the main conflict is resolved, it's time to **begin wrapping everything up**. The falling action is a great time to tie up any loose ends while also giving your characters a chance to deal with the aftermath of the climax.

5. Resolution

It's time to end your tale! If you still have unanswered questions in your plot, answer them now. **The resolution is also the time to show the next step in your characters' lives**. Do they live happily ever after? Is a new era dawning? Or do they just continue on with their ordinary existence with a new experience under their belt?

The resolution of one story can also be the start of another. You can introduce a new conflict or raise more questions for your reader. Wrap it up, then begin again!

2. 2. *Setting*

The setting of your story is **both the physical location and point in time in which your plot takes place**. For some stories (like the fantasy novels mentioned above) setting is a huge part of the story. You can build a whole new world with its own languages and creatures. In this case, the setting almost acts as its own character in your tale.

But, you don't have to go all immersive like Tolkien to create a strong setting in your story. **What best serves your main themes?** Modern day New York or civil rights era Mississippi? Victorian England or Jersey in the 80s? There are so many places you can travel to, and so many interesting times to draw from. Choose your favorite (or multiple favourites if your characters have a time machine 😊) and dig in.

3. 3. *Characters*

The characters are the people, animals, beings, or personified objects driving your story. **A story can have many characters or just one main character as the focus**. Going back to our example, *The Hunger Games* focuses on Katniss, but there are many supporting characters that play a major role in her story: Haymitch, Peeta, Gale, Rue, Primrose, and many, many more. On the other hand, Edgar Allen Poe's poem "The Raven" has only three: the narrator, Lenore, and the raven. But that's plenty for an exciting tale.

Your story's characters should be compelling. Whether good or evil, you need your reader to invest and care about their journey. So, what kind of characters does your story need?

1. Kinds of Characters

There are many different kinds of characters, but most stories include these **two common types**:

1. Protagonist

The protagonist is typically the 'good guy' in your story – the one the reader is rooting for. This main character is super important and central to your plot. They are often trying to overcome the conflict while finding themselves at odds with our next character type.

2. Antagonist

The antagonist of your story doesn't have to be a single person. It can be any character, group, or force that is at odds with your protagonist. This doesn't mean they have to be 'evil' or the 'bad guy', but the antagonist is often pushing the conflict onto our protagonist.

Looking for a fun example? Check out the Wicked Witch from *The Wizard of Oz*. She's a classic antagonist in the original story. But in the musical *Wicked*, we're told her background tale and she's transformed into a protagonist the audience can't help but love. That is the power of a good story!

4. *4. Point of view*

What changed in our two stories above about the Wicked Witch of the West? The point of view! **Point of view (or POV) describes the lens through which the story is being told.**

In *The Wizard of Oz*, the Wicked Witch is at odds with our protagonist Dorothy and her quest to return home. However, in *Wicked*, we get to see the green witch as a young woman going through the typical struggles of friendship and young love. And that is a whole other story.

1. Types of Point of View

The POV you choose can help shape your entire story. There are several different POVs to consider, but the most common are **first person**, **second person**, and **third person**.

1. First Person Point of View

A story told in the first person is most often told from the point of view of the protagonist. Our protagonist narrator will speak using first person pronouns (I, we, me, etc). And as the reader, we are privy to their innermost thoughts and feelings.

This is a great way to pull a reader into the story, and a very strong bond can be formed between the reader and the narrator. Our previous example, *The Hunger Games*, was told with a first person POV. As a reader, we never knew more than Katniss did about what was happening, leading to some great surprises and reveals as the story continued to unfold throughout the three book series.

2. Second Person Point of View

You won't see second person used very often in literature, but it is an important POV to keep in mind. In the second person, the reader is addressed directly and may even become a character of sorts in your story. This point of view is written using second person pronouns (you, your, etc).

Though you can find some books written in second person, most often you will see this writing in your digital reading, such as ads and blog posts – why, hello there!

3. Third Person Point of View

Third person POV is by far the most common point of view in fiction writing. In this kind of story, the reader is a bystander, observing the actions of the characters as told by an 'outside narrator'. This POV used third person pronouns (he, she, they, etc.). But how much we learn as a reader depends on which style of narrator you choose.

4. Third Person Omniscient

A third person omniscient narrator knows everything going down in the story. As a reader, we can learn the inside thoughts and feelings of all the main characters. The story unfolds in front of us, and we get to experience it through a variety of character lenses.

5. Third Person Limited

In this POV, our narrator has access to only one character's inside thoughts and feelings. As the reader, we typically follow this one character as our main character, learning only what they know and seeing the world through their eyes and experiences.

5. 5. Conflict

The conflict is the big problem of the story. **What is your main character trying to overcome? That is the conflict.**

Conflict comes in many different forms, but will almost always involve an antagonist of sorts. There can be one major conflict in your story, or your characters may encounter several throughout the tale. But more than likely there is one big theme driving the major conflict. So, what does that look like?

1. Types of Conflict

There are different types of conflicts you may choose to use, but the most common are **character vs self**, **character vs character**, **character vs nature**, and **character vs society**.

1. Character vs Self

In this type of conflict, your main character must overcome something within themselves to achieve their goal. These internal conflicts may look like a doubt, fear, or grudge. It's whatever is holding them back from their desires.

The Lord of the Rings provides a great example of character vs self with Aragorn. He is destined to be king, but his own doubts have taken him away from that path. One of the major plots of the story is Aragorn realizing that he is capable and worthy of this leadership role.

2. Character vs Character

In a character vs character conflict, someone is standing in our protagonist's way. This is a very common conflict type in superhero tales. There's a 'bad guy' our main characters must defeat before the story ends.

3. Character vs Nature

Character vs nature conflicts pit our characters against some kind of natural force. It could be a natural disaster (tornado, hurricane, wildfire, avalanche) or any other kind of survival tale. Many post-apocalyptic stories involve both character vs nature and character vs character conflicts.

Another example of character vs nature is when our characters are battling forces of nature, such as in *The Fault in Our Stars* by John Green. In this heart-breaking story, two teens are

fighting cancer diagnoses — a force of nature they have no control over. After falling in love, they are then left to battle time and death — two other powerful forces of nature.

4. Character vs Society

In our final conflict type, characters are battling oppressive societal norms. In character vs society, our protagonist feels like they are at odds with the whole world. This can often be broken down into character vs character to get a strong emotional pull (such as a kid at odd with their parents) but the themes are much bigger than any one person.

Exploring the world of 3D Modelling

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Abstract

3D modeling is the process of digitally creating three-dimensional representations of objects or environments using specialized software. It involves designing and constructing virtual 3D objects with accurate shapes, textures, and details that can be viewed and manipulated from any angle. This abstract highlights the key aspects and steps involved in 3D modeling, including object creation, mesh creation, texture mapping, lighting and shading, rigging and animation, and rendering.

Furthermore, it delves into the history of 3D modeling, tracing its origins from wireframe modeling in the 1960s to the advancements in surface modeling, solid modeling, polygonal modeling, sculpting, parametric modeling, and procedural modeling. It also emphasizes the impact of advancements in software and hardware on the field of 3D modeling.

Moreover, the abstract showcases a selection of popular 3D modeling software tools, such as Autodesk 3ds Max, Autodesk Maya, Blender, ZBrush, SolidWorks, SketchUp, Cinema

4D, AutoCAD, Modo, and Rhino 3D. These tools cater to various industries and offer a wide range of features and functionalities for creating and manipulating 3D models.

Overall, this abstract provides a comprehensive overview of 3D modeling, its historical evolution, and the software tools available, serving as a valuable resource for individuals interested in exploring the world of 3D modeling and its applications.

Keywords:- 3D modelling, Digital representation, Object creation, Texture mapping, Lighting and shading, Software tools

3D modeling refers to the process of creating three-dimensional digital representations of objects or environments using specialized software. It involves designing and constructing virtual 3D objects with accurate shapes, textures, and details that can be viewed and manipulated from any angle.

Here are the key aspects and steps involved in 3D modeling:

1. **Object Creation:** The first step in 3D modeling is to create a digital representation of the object or scene you want to model. This can be done using various techniques, such as polygonal modeling, sculpting, or parametric modeling. Polygonal modeling involves creating a 3D object by manipulating basic geometric shapes called polygons, such as vertices, edges, and faces. Sculpting involves shaping a digital object by adding or subtracting material, similar to sculpting with clay. Parametric modeling allows you to define an object's properties and dimensions using parameters and mathematical equations.
2. **Mesh Creation:** Once the basic structure of the object is established, a mesh is created. A mesh is a network of interconnected polygons that form the surface of the 3D object. The complexity and density of the mesh determine the level of detail that can be achieved. Fine details, such as wrinkles on a character's face or intricate patterns on a building, may require a denser mesh.
3. **Texture Mapping:** After creating the basic geometry, textures are applied to the surface of the 3D model to give it a realistic appearance. Textures can include color information, patterns, bump maps (to simulate surface irregularities), specular maps (to control the reflection of light), and more. These textures are typically created using image editing software or generated procedurally within the 3D modeling software.

4. **Lighting and Shading:** The next step is to set up the lighting conditions for the 3D scene. Virtual light sources are positioned, and their properties, such as intensity, color, and direction, are defined. The interaction between light and the 3D model's surfaces is determined by shading algorithms, which calculate how light is reflected, absorbed, or transmitted by the materials of the object. This helps to create realistic shadows, highlights, and other lighting effects.
5. **Rigging and Animation:** If the 3D model is intended to be animated, a rigging process is performed. Rigging involves creating a virtual skeleton or a series of interconnected bones within the model. These bones can be manipulated to simulate movement. Once the rig is set up, keyframes are defined to specify the object's position, rotation, and scale at different points in time. The computer then interpolates these keyframes to create smooth animations.
6. **Rendering:** The final step in 3D modeling is rendering, where the 3D software generates the final images or animations based on the scene setup, object geometry, textures, lighting, and other effects. Rendering can be a computationally intensive process, as it involves complex calculations to simulate the behavior of light and materials. The resulting output is a series of high-quality images or an animated sequence.

Overall, 3D modeling is a versatile and powerful tool used in various fields, including animation, video games, virtual reality, architecture, product design, and visual effects in movies. It allows artists and designers to bring their imagination to life and create visually stunning and realistic digital representations.

History of 3d modelling

The history of 3D modeling can be traced back to the early days of computer graphics and the development of computer-aided design (CAD) systems. Here's an overview of the key milestones and advancements in the history of 3D modeling:

1. **Wireframe Modeling (1960s):** In the 1960s, computer graphics pioneers started experimenting with wireframe modeling, which represented 3D objects as a collection of lines and vertices. The objects had no surfaces or textures but provided a basic framework for visualizing geometric shapes.

2. **Surface Modeling (1970s):** In the 1970s, surface modeling techniques emerged, allowing the creation of more complex 3D shapes. Techniques such as spline modeling, where curves are defined mathematically and used to construct surfaces, became popular. These surfaces could be rendered and viewed from different angles.
3. **Solid Modeling (1980s):** Solid modeling revolutionized 3D modeling by enabling the creation of fully enclosed 3D objects with volume and properties such as mass and density. Solid modeling systems allowed engineers and designers to create virtual prototypes, perform simulations, and analyze the physical properties of objects before manufacturing.
4. **Polygonal Modeling (1980s):** The concept of polygonal modeling gained prominence in the 1980s, with the advent of 3D graphics in video games and movies. Polygonal models represented objects as a mesh of polygons, typically triangles or quads. This approach allowed for efficient rendering and manipulation of 3D objects.
5. **Sculpting and Artistic Modeling (1990s):** In the 1990s, 3D modeling tools expanded to include sculpting techniques that mimicked the process of traditional sculpting. Artists could shape virtual objects by pushing, pulling, and deforming digital clay-like materials. This approach opened up new possibilities for organic and character modeling.
6. **Parametric and Procedural Modeling (2000s):** Parametric modeling gained popularity in the 2000s, allowing designers to create models by defining parameters and constraints. Changes made to these parameters would automatically update the model accordingly. Procedural modeling, where objects are generated using algorithms and rules, also became prevalent, enabling the creation of complex and repetitive structures.
7. **Advancements in Software and Hardware (2000s and beyond):** The advancement of computer hardware capabilities, such as faster processors and improved graphics cards, along with the development of sophisticated 3D modeling software, significantly accelerated the 3D modeling process. Real-time rendering and physically-based rendering techniques became more accessible, leading to more realistic and immersive visualizations.

Today, 3D modeling is widely used in various industries, including entertainment, architecture, product design, medical visualization, virtual reality, and augmented reality. The tools and techniques continue to evolve, incorporating advanced features like photorealistic rendering, simulation capabilities, and integration with other technologies such as 3D printing and virtual reality.

3D Modeling Software

1. Autodesk 3ds Max: A comprehensive software widely used in the entertainment industry for modeling, animation, and rendering. It offers a wide range of tools for creating realistic 3D models and animations.
2. Autodesk Maya: A powerful software used in film, television, and game development. Maya provides advanced tools for modeling, animation, rendering, and simulation.
3. Blender: An open-source software that is free to use and popular among artists, hobbyists, and indie developers. Blender offers a full suite of 3D modeling, animation, and rendering tools.
4. ZBrush: Specialized software for digital sculpting, commonly used for creating high-resolution and intricate models. It is often used in the film, game, and toy industries.
5. SolidWorks: A popular CAD software used primarily in engineering and product design. It focuses on parametric and solid modeling techniques to create precise 3D models of mechanical parts and assemblies.
6. SketchUp: User-friendly software often used in architectural and interior design. It allows quick creation of 3D models using push-pull modeling and geometric shapes.
7. Cinema 4D: A versatile software used in motion graphics, visual effects, and architectural visualization. Cinema 4D offers a range of tools for modeling, texturing, animation, and rendering.

8. AutoCAD: Widely used in architecture, engineering, and construction industries, AutoCAD is a CAD software for 2D and 3D design. It allows precise modeling and documentation of objects and structures.
9. Modo: A powerful and flexible 3D modeling software used in various industries, including film, game development, and product design. Modo offers a comprehensive toolset for modeling, texturing, and rendering.
10. Rhino 3D: Popular among industrial designers and architects, Rhino 3D focuses on creating precise 3D models for manufacturing, rendering, and analysis. It supports both NURBS and polygonal modeling.

Virtual Reality and Augmented Reality in Multimedia

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Abstract

Virtual Reality (VR) and Augmented Reality (AR) have emerged as transformative technologies in the field of multimedia. This chapter explores the applications of VR and AR in multimedia, their impact on various industries, and the potential for immersive and interactive experiences. VR immerses users in a simulated environment, while AR overlays virtual elements onto the real world. Both technologies offer unique opportunities for storytelling, gaming, education, training, and more. This chapter delves into the technical aspects of VR and AR, their current and future applications, and the challenges and considerations involved in their implementation.

Keywords: Virtual Reality, Augmented Reality, multimedia, immersive experiences, storytelling, gaming, education, training.

Introduction: Virtual Reality (VR) and Augmented Reality (AR) have revolutionized the multimedia landscape, providing users with immersive and interactive experiences. VR creates a simulated environment that users can explore, while AR overlays virtual elements onto the real world. This chapter explores the applications of VR and AR in multimedia, highlighting their impact on storytelling, gaming, education, training, and other industries. By examining the technical aspects, applications, and challenges of VR and AR, this chapter aims to provide insights into the potential of these technologies in multimedia.

1. Virtual Reality (VR):

1.1. Immersive Storytelling: VR allows users to enter and interact with virtual environments, creating new possibilities for immersive storytelling. Multimedia content can be presented in a 360-degree format, providing users with a sense of presence and agency within the story. VR storytelling enables users to explore narratives from different perspectives, enhancing engagement and emotional connection.

1.2. Gaming and Entertainment: VR gaming immerses players in interactive and lifelike virtual worlds, transforming the gaming experience. Users can physically interact with the virtual environment, enhancing gameplay and immersion. VR also extends to other forms of entertainment, such as virtual concerts, theater experiences, and virtual tourism, offering new ways to engage audiences.

1.3. Education and Training: VR has immense potential in education and training, providing realistic simulations and hands-on experiences. From virtual field trips and historical reconstructions to medical training and professional skill development, VR offers a safe and controlled environment for immersive learning.

2. Augmented Reality (AR):

2.1. Enhanced Real-World Interactions: AR overlays virtual elements onto the real world, enhancing the user's perception and interaction with their surroundings. Multimedia content, such as annotations, 3D models, and animations, can be integrated into real-world environments, offering informative and engaging experiences. AR is used in fields like architecture, interior design, navigation, and retail to provide interactive and contextual information to users.

2.2. Gamification and Interactive Experiences: AR transforms everyday activities into interactive and gamified experiences. Mobile AR games, such as Pokémon Go, blend virtual characters and objects with real-world locations, encouraging exploration and social interaction. AR also allows for interactive advertising, product visualization, and immersive marketing campaigns, captivating audiences in unique ways.

2.3. Training and Skills Development: AR has significant potential in training and skills development by overlaying step-by-step instructions, guidance, and real-time feedback onto real-world tasks. Industries like manufacturing, maintenance, and healthcare utilize AR to provide workers with on-the-job training, reducing errors and enhancing efficiency.

3. Considerations and Challenges: Implementing VR and AR in multimedia comes with considerations and challenges. Technical requirements, such as hardware capabilities, content creation, and user comfort, need to be addressed. Accessibility and affordability are key factors for wider adoption. Ethical considerations, privacy concerns, and potential psychological effects should also be taken into account.

Virtual Reality (VR) and Augmented Reality (AR) are two distinct but related technologies that have significantly impacted the field of multimedia. Both VR and AR offer immersive and interactive experiences, but they differ in how they present virtual content to users.

1. Virtual Reality (VR): Virtual Reality creates a simulated environment that users can enter and interact with using specialized hardware and software. VR aims to

transport users to a completely virtual world, often generated using computer graphics or 360-degree video. The key components of VR include:

1.1. Headsets: VR headsets, such as Oculus Rift, HTC Vive, or PlayStation VR, are worn by users to block out the real-world environment and immerse them in the virtual space. These headsets typically consist of a head-mounted display (HMD) with screens placed close to the user's eyes to provide a wide field of view.

1.2. Input Devices: VR systems use various input devices to enable user interaction within the virtual environment. This can include handheld controllers, motion tracking sensors, or even full-body tracking systems. These input devices allow users to navigate, manipulate objects, and perform actions within the VR space.

1.3. Immersive Experiences: VR provides users with a sense of presence, allowing them to feel like they are physically present in the virtual world. The immersive nature of VR creates opportunities for storytelling, gaming, education, training, and simulations. Users can explore virtual environments, interact with virtual objects, and engage with multimedia content in a more engaging and interactive manner.

2. Augmented Reality (AR): Augmented Reality overlays virtual elements onto the real world, enhancing the user's perception and interaction with their surroundings. Unlike VR, which aims to create a fully immersive experience, AR blends virtual content with the real environment. AR can be experienced through various devices, such as smartphones, tablets, or specialized AR glasses. The key components of AR include:

2.1. Display Devices: AR can be experienced through devices with built-in cameras, such as smartphones or tablets. These devices capture the real-world environment and overlay virtual content on top of it, allowing users to see a combined view of the physical and virtual worlds.

2.2. Tracking Systems: AR relies on tracking systems to understand the position and orientation of the device in relation to the real-world environment. This enables virtual objects to be accurately placed and aligned with the user's surroundings.

2.3. Interactive Experiences: AR enhances real-world interactions by overlaying virtual elements onto the physical environment. Users can see annotations, 3D models, animations, or other multimedia content integrated into their real-world surroundings. This enables interactive experiences, such as informative overlays, gamification, or interactive advertisements.

3. Applications in Multimedia: Both VR and AR have a wide range of applications in multimedia, including:

3.1. Storytelling: VR and AR offer unique storytelling opportunities. VR allows users to be fully immersed in a virtual narrative, experiencing events and environments firsthand. AR, on the other hand, can augment real-world stories by overlaying additional information or enhancing the environment with virtual elements.

3.2. Gaming and Entertainment: VR gaming provides users with immersive and interactive experiences, where they can physically interact with the virtual environment. AR gaming blends virtual content with the real world, creating gamified experiences that encourage exploration and social interaction.

3.3. Education and Training: VR and AR are valuable tools for educational purposes. VR can simulate realistic environments, enabling virtual field trips, historical reconstructions, or training simulations. AR overlays information, annotations, or instructions onto real-world tasks, enhancing learning experiences and providing real-time feedback.

3.4. Marketing and Advertising: Both VR and AR offer innovative opportunities in marketing and advertising. VR can create immersive brand experiences or virtual product demonstrations. AR allows for interactive advertisements, product visualizations, or location-based marketing campaigns that engage consumers in unique and memorable ways.

4. Considerations and Challenges: Implementing VR and AR in multimedia comes with various considerations and challenges:

4.1. Technical Requirements: VR and AR technologies often require specialized hardware and software, which may be costly and require significant processing power. The availability and accessibility of such equipment can impact the adoption and reach of VR and AR experiences.

4.2. Content Creation: Developing compelling VR and AR content requires expertise in 3D modeling, interactive design, and multimedia production. Creating high-quality content that takes advantage of the unique capabilities of VR and AR can be time-consuming and resource-intensive.

4.3. User Comfort and Safety: Extended use of VR headsets can cause discomfort, such as motion sickness or eye strain, for some users. Designing user interfaces and experiences that prioritize comfort and safety is essential to ensure a positive user experience.

4.4. Ethical and Social Considerations: As with any technology, VR and AR raise ethical and social considerations. Privacy concerns, data security, virtual harassment, and potential psychological effects on users are important factors to be addressed in the design and implementation of VR and AR experiences.

Conclusion: Virtual Reality (VR) and Augmented Reality (AR) have transformed multimedia by offering immersive and interactive experiences. VR enables immersive storytelling, gaming, and education, while AR enhances real-world interactions and provides gamified experiences. These technologies open new avenues for multimedia applications in various industries. While challenges exist, such as technical requirements and ethical considerations, the potential of VR and AR in multimedia is immense. As technology continues to advance, VR and AR will play an increasingly significant role in shaping the future of multimedia experiences. Virtual Reality (VR) and Augmented Reality (AR) have transformed multimedia by providing immersive and interactive experiences. VR creates simulated environments for users to explore, while AR overlays virtual content onto the real world. Both technologies have applications in storytelling, gaming, education, training, and marketing. However, the implementation of VR and AR in multimedia requires careful consideration of technical requirements, content creation, user comfort, and ethical considerations. As technology advances, VR and AR will continue to shape the future of multimedia, offering new possibilities for immersive and interactive experiences.

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Anticipation Secondary Motion

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Abstract:

Anticipation secondary motion is a fundamental concept in animation and computer graphics that adds realism and depth to animated characters and objects. This abstract explores the concept of anticipation secondary motion, its principles, and its application in creating more lifelike and believable animations. Anticipation secondary motion refers to the subtle movements that occur before the main action, providing a visual cue to the audience and enhancing the overall impact of the animation. By understanding the principles and techniques of anticipation secondary motion, animators can bring their creations to life with a greater sense of weight, timing, and naturalness. This abstract provides an overview of the importance of anticipation secondary motion in animation and highlights its significance in creating engaging and immersive animated experiences.

Keywords: Anticipation secondary motion, animation, computer graphics, realism, lifelike, believability, movement, timing.

Introduction:

Anticipation and secondary motion are fundamental principles in animation that add depth, realism, and appeal to the movement of characters and objects. Anticipation involves setting up actions to prepare the audience for a forthcoming movement, while secondary motion refers to the additional movement that occurs as a result of the primary action. In this chapter, we will explore the concepts of anticipation and secondary motion in detail, discussing their significance, techniques for implementation, and their impact on creating engaging and believable animations.

Section 1: Anticipation in Animation

1.1 Definition and Purpose of Anticipation:

Anticipation is a principle in animation that involves preparing the audience for an upcoming action or movement. It establishes a logical and believable connection between two actions and helps to create a sense of anticipation, surprise, or impact. By incorporating anticipation, animators can make the subsequent action more understandable and visually engaging. Anticipation is a principle in animation where a character or object prepares for an upcoming action. It involves a brief movement or action in the opposite direction of the

intended action. Anticipation provides a visual cue to the audience, signaling that something significant is about to happen. It helps build anticipation, adds weight to the action, and makes it more believable.

1.2 Techniques for Implementing Anticipation:

There are various techniques animators can use to implement anticipation in their animations:

- **Pose Anticipation:** The character assumes a pose or takes a specific action before the main movement to signal the upcoming action. For example, a character crouching down before jumping.
- **Exaggerated Movement:** Amplifying the movement preceding the primary action to emphasize the energy and impact of the subsequent movement. This can involve wind-up actions or exaggerated body movements.
- **Eye Direction:** Shifting the character's gaze or focus towards the intended direction of movement to indicate anticipation or expectation.
- **Timing and Spacing:** Adjusting the timing and spacing of actions to create a brief pause or buildup before the main movement. This can increase the impact and create anticipation for the upcoming action.

Techniques for Anticipation Secondary Motion

- **Timing and Spacing:**

Timing and spacing play a crucial role in creating effective anticipation and secondary motion. Animators need to carefully plan and execute the timing of the anticipation movement, ensuring it is proportional to the intensity of the action. They also need to adjust the spacing of the secondary movements to maintain a smooth and natural flow.

- **Exaggeration:**

Exaggeration can be employed in anticipation secondary motion to add impact and emphasis to the actions. It involves amplifying the anticipation and secondary movements beyond what would be realistic, while still maintaining believability. Exaggeration can enhance the appeal and visual interest of the animation, making it more engaging for the audience.

- **Follow-through and Overlapping Action:**

Follow-through and overlapping action are key elements of secondary motion. Follow-through refers to the continuation of movement after the primary action is complete, while overlapping action involves the body parts moving at different rates and timings. By incorporating these techniques, animators can add a sense of weight, flexibility, and naturalness to the animation.

Section 2: Secondary Motion in Animation

2.1 Definition and Purpose of Secondary Motion:

Secondary motion refers to the additional movement that occurs as a result of the primary action. It adds an extra layer of realism and depth to the animation by incorporating the natural physical reactions and secondary movements that accompany the primary action. Secondary motion helps to create a more convincing and lifelike portrayal of characters and objects in motion. Secondary motion refers to the additional movements that occur as a result of the primary action. It includes follow-through, overlapping action, and other secondary movements that add naturalness and fluidity to the animation. Secondary motion brings realism to the animation by mimicking the behavior of real-world objects and characters.

2.1 Enhancing Realism:

Anticipation secondary motion is crucial in creating realistic animations. By incorporating the principles of anticipation and secondary motion, animators mimic the physics and behavior of objects and characters in the real world. It adds weight, impact, and believability to the animation, making it more immersive and engaging for the audience.

2.2 Conveying Intent and Emotion:

Anticipation allows animators to convey the intent of a character or object. By incorporating appropriate anticipatory movements, animators can communicate the character's thoughts, emotions, and intentions. For example, a character pulling back before jumping signifies their intent to leap forward, adding depth and meaning to the action.

2.3 Adding Visual Interest:

Anticipation secondary motion adds visual interest and variety to animations. By incorporating well-executed anticipation and secondary movements, animators can break the monotony of linear actions and create more dynamic and visually appealing sequences. It helps capture the viewer's attention and adds an extra layer of detail to the animation.

2.2 Examples of Secondary Motion:

Secondary motion can manifest in various ways, depending on the nature of the animation. Some common examples include:

- **Follow-through and Overlapping Action:** When a character performs a sudden stop or change in movement, their clothing or body parts may continue to move briefly before coming to a rest. This creates a follow-through effect, adding fluidity and naturalness to the animation.
- **Weight and Inertia:** Objects or characters with weight exhibit secondary motion as they anticipate, react, or recover from primary actions. For example, the jiggling of a character's belly after a sudden stop or the bouncing of a ball after it hits the ground.
- **Secondary Actions:** Additional movements that accompany the primary action but are not the main focus. For instance, a character adjusting their hat while walking or a character's hair swaying as they turn their head.
- **Physical Actions:**

Anticipation secondary motion is commonly used in physical actions such as jumping, throwing, or punching. For example, a character may crouch down before leaping, giving a sense of gathering energy and building momentum.

- **Facial Expressions:**

Anticipation secondary motion is also applicable to facial expressions. Characters may exhibit subtle movements in their facial features before expressing a strong emotion, providing a visual cue to the audience about the upcoming emotional response.

- **Special Effects:**

Anticipation secondary motion can be used in creating special effects, such as smoke, fire, or water simulations. The anticipation and secondary movements in these effects can mimic the behavior and dynamics of the real-world elements, enhancing the realism and impact of the visual effects.

Section 3: Implementing Anticipation and Secondary Motion

3.1 Observing Real-world References:

To effectively incorporate anticipation and secondary motion, animators often study and observe real-world references. They carefully observe the movements of humans, animals, and objects to understand the natural physics and reactions associated with different actions. This observation helps animators capture the subtleties and nuances that make the animation more convincing and believable.

3.2 Timing and Spacing:

Mastering the principles of timing and spacing is crucial when implementing anticipation and secondary motion. Animators must consider the appropriate timing for anticipation actions, allowing enough time for the audience to understand the upcoming movement. They also need to control the spacing of movements to create smooth and natural transitions between actions, ensuring that secondary motion complements the primary action seamlessly.

3.3 Animation Software and Tools:

Animation software provides various tools and features that assist animators in implementing anticipation and secondary motion. These tools often include options for manipulating timing, adjusting keyframes, applying secondary motion presets, and simulating physics-based movement. Animators can utilize these features to enhance the quality and realism of their animations.

Conclusion:

Anticipation and secondary motion are vital principles in animation that enhance the believability and appeal of character and object movements. By incorporating anticipation, animators can prepare the audience for upcoming actions, creating a sense of anticipation and engagement. Secondary motion adds depth and realism to animations, capturing the natural physical reactions and additional movements that accompany primary actions. By understanding and implementing these principles effectively, animators can create more engaging and believable animations that captivate and resonate with the audience.

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Legal and Ethical Considerations in Human Resource Management

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Abstract

Human Resource Management (HRM) plays a critical role in organizations by managing the most valuable asset - employees. However, the field of HRM is subject to numerous legal and ethical considerations that shape the practices and decisions made by HR professionals. This research chapter aims to explore the legal and ethical dimensions of HRM, highlighting the importance of compliance with laws and regulations, as well as the ethical principles that guide HR practices. By examining various aspects such as hiring, employee relations, compensation, and privacy, this chapter provides insights into the challenges faced by HR professionals and the strategies they employ to navigate the legal and ethical complexities of HRM.

Keywords: Legal considerations in HRM, Ethical considerations in HRM, Employment laws and regulations, Equal employment opportunity, Discrimination in the workplace

Introduction

The field of Human Resource Management (HRM) is critical for organizations in effectively managing their employees and aligning their workforce with organizational goals. However, HRM professionals face various legal and ethical considerations that impact their decision-making processes. This chapter explores the key legal and ethical considerations in HRM and discusses their implications for organizations. Human Resource Management (HRM) is a vital function within organizations that focuses on managing the workforce and maximizing employee performance. It encompasses various activities such as recruitment, selection, training, compensation, and employee relations. However, the practice of HRM is subject to a wide range of legal and ethical considerations that shape the policies, practices, and decisions made by HR professionals.

Legal considerations in HRM refer to the obligations and requirements imposed by laws, regulations, and court decisions. These legal frameworks are designed to ensure fairness, protect employees' rights, prevent discrimination, and promote safe and healthy work

environments. Compliance with employment laws is essential for organizations to avoid legal liabilities, penalties, and reputational damage.

Ethical considerations in HRM go beyond legal compliance and focus on moral principles and values that guide HR practices. Ethical issues in HRM involve questions of fairness, justice, privacy, diversity, and social responsibility. HR professionals are expected to make ethical decisions that promote the well-being of employees, treat them with dignity and respect, and contribute to the overall ethical culture of the organization.

The purpose of this research chapter is to explore the legal and ethical dimensions of HRM and shed light on the importance of considering these aspects in HR practices. By examining various areas of HRM, including hiring and selection, employee relations, compensation, and privacy, we have gained insights into the challenges faced by HR professionals and the strategies they employ to navigate the complex legal and ethical landscape.

Understanding and addressing legal and ethical considerations in HRM is crucial for organizations to build a positive work environment, maintain employee trust, and mitigate potential risks. By exploring real-world examples and discussing best practices, this research chapter aims to provide valuable insights and practical guidance for HR professionals in managing legal and ethical challenges effectively.

Legal Considerations in HRM

1. **Employment Laws and Regulations:** Employment laws and regulations serve as the foundation for HR practices and protect the rights of employees. Some key laws include:
 - Title VII of the Civil Rights Act: Prohibits employment discrimination based on race, color, religion, sex, and national origin.
 - Americans with Disabilities Act (ADA): Ensures equal opportunities and reasonable accommodations for individuals with disabilities.
 - Age Discrimination in Employment Act (ADEA): Protects individuals aged 40 and above from age-based discrimination.
 - Fair Labor Standards Act (FLSA): Sets standards for minimum wage, overtime pay, and child labor.
 - Family and Medical Leave Act (FMLA): Provides eligible employees with unpaid leave for family or medical reasons.
 - Occupational Safety and Health Act (OSHA): Ensures safe and healthy working conditions.
2. **Hiring and Selection:** HR professionals must adhere to legal requirements during the hiring and selection process to ensure fair and unbiased practices:
 - Equal Employment Opportunity (EEO): Organizations must provide equal opportunities regardless of protected characteristics and avoid discriminatory practices in recruitment, interviewing, and hiring.

- Background Checks: Conducting background checks must comply with legal restrictions, such as obtaining candidate consent and adhering to applicable laws such as the Fair Credit Reporting Act (FCRA).
 - Pre-employment Testing: Any tests used in the selection process must be validated and nondiscriminatory, ensuring they measure job-related skills and abilities.
3. Employee Relations: HR professionals must navigate legal considerations when managing employee relations and addressing workplace issues:
- Harassment and Hostile Work Environment: Organizations are legally required to prevent and address workplace harassment, including sexual harassment, by establishing policies, conducting investigations, and taking appropriate action.
 - Employee Discipline and Termination: HR professionals must follow fair and consistent disciplinary procedures and ensure that terminations are carried out in compliance with applicable laws, contractual obligations, and employment agreements.
 - Whistleblower Protections: Various laws protect employees who report illegal or unethical activities within the organization, safeguarding them from retaliation.
4. Compensation and Benefits: HR professionals must ensure compliance with legal requirements regarding employee compensation and benefits:
- Fair Pay and Wage Discrimination: Laws such as the Equal Pay Act and state-specific regulations prohibit wage discrimination based on gender, race, or other protected characteristics.
 - Employee Benefits Compliance: HR professionals must navigate complex laws, such as the Employee Retirement Income Security Act (ERISA), to ensure compliance with regulations related to employee benefit plans, including retirement plans, health insurance, and other benefits.
 - Overtime and Exemption Classification: Compliance with FLSA regulations is essential to determine which employees are exempt from overtime pay and meet specific criteria for exemption categories, such as executive, administrative, or professional roles.

Understanding and adhering to these legal considerations is crucial for HR professionals to mitigate legal risks, maintain a fair and inclusive work environment, and ensure compliance with applicable laws and regulations. Regular updates on employment laws and consulting legal experts can support HR professionals in making informed decisions and implementing effective HR practices within their organizations.

Ethical Considerations in HRM

1. Privacy and Confidentiality: HR professionals must uphold ethical standards when handling employee information and data:

- Employee Data Protection: Respecting the privacy of employees by securely storing and handling their personal information, ensuring compliance with data protection laws.
 - Monitoring and Surveillance: Employers must balance the need for monitoring employee activities with respecting their privacy rights, ensuring transparency and clear communication about monitoring practices.
 - Information Security: Implementing robust cybersecurity measures to protect employee data from unauthorized access or breaches.
2. Diversity and Inclusion: HR professionals play a critical role in promoting diversity, equity, and inclusion within organizations:
- Equal Opportunities and Affirmative Action: Ensuring fair treatment and opportunities for all employees, regardless of their gender, race, ethnicity, age, disability, or other protected characteristics.
 - Managing Diversity and Inclusion Programs: Developing and implementing initiatives to foster an inclusive workplace, embracing diversity, and providing equal opportunities for career advancement.
 - Unconscious Bias in HR Decision-making: Recognizing and addressing biases that may influence HR decisions, such as recruitment, performance evaluations, and promotions.
3. Employee Development and Training: HR professionals should prioritize employee development and training opportunities while ensuring fairness and equal access:
- Providing Learning Opportunities: Ensuring access to training and development programs for employees at all levels, promoting skill enhancement and career growth.
 - Fairness in Performance Evaluations: Implementing performance evaluation systems that are objective, transparent, and based on job-related criteria, minimizing biases and favoritism.
 - Talent Management and Succession Planning: Developing comprehensive talent management strategies to identify and develop high-potential employees and ensure a fair succession planning process.
4. Social Responsibility: HR professionals should consider the ethical implications of HR practices on various stakeholders, including employees, communities, and society at large:
- Corporate Social Responsibility in HRM: Aligning HR practices with the organization's commitment to social responsibility, including fair labor practices, environmental sustainability, and community engagement.
 - Ethical Sourcing and Labor Practices: Ensuring that the organization's supply chain adheres to ethical standards, including fair labor practices, human rights, and responsible sourcing.
 - Sustainability and Employee Well-being: Promoting employee well-being, work-life balance, and sustainable work practices that prioritize the health, safety, and overall quality of life of employees.

Adhering to ethical considerations in HRM helps organizations create an ethical culture, maintain employee trust, and enhance their reputation. HR professionals should integrate ethical decision-making into their practices, regularly review and update policies, and provide training to ensure employees and managers understand and uphold ethical standards in all HR-related activities. By promoting ethical behavior and values, HR professionals contribute to a positive work environment and support the organization's overall success.

Managing Legal and Ethical Considerations in HRM

1. Developing HR Policies and Procedures:
 - Establish comprehensive HR policies and procedures that address legal requirements and ethical considerations in areas such as recruitment, selection, employee relations, compensation, and privacy.
 - Ensure policies are clear, easily accessible, and regularly updated to reflect changes in laws and regulations.
 - Incorporate ethical principles into policies to guide decision-making and promote a positive work culture.
2. Training and Education for HR Professionals:
 - Provide regular training sessions for HR professionals to enhance their knowledge and understanding of legal requirements and ethical considerations in HRM.
 - Include case studies, practical scenarios, and discussions to facilitate ethical decision-making and promote awareness of potential legal pitfalls.
 - Keep HR professionals informed about updates in employment laws and ethical guidelines through seminars, workshops, and professional development opportunities.
3. Establishing Effective Communication Channels:
 - Foster open and transparent communication between HR professionals and employees to address concerns, provide guidance, and ensure clarity about policies and procedures.
 - Encourage employees to report any unethical behavior or potential legal violations without fear of retaliation, and establish confidential reporting mechanisms such as anonymous hotlines.
 - Regularly communicate changes in policies, legal requirements, and ethical expectations to ensure alignment throughout the organization.
4. Conducting Regular Audits and Compliance Reviews:
 - Perform periodic audits and reviews of HR practices to assess compliance with legal requirements and ethical standards.
 - Identify areas of potential risk or non-compliance and take corrective actions to address any issues promptly.
 - Engage internal or external experts to conduct independent audits and provide objective assessments of HR practices.

5. Collaboration with Legal and Ethics Departments:
 - Foster collaboration between HR, legal, and ethics departments to ensure alignment and coordination in addressing legal and ethical considerations.
 - Seek legal advice when developing or revising HR policies to ensure compliance with applicable laws and regulations.
 - Engage ethics experts to provide guidance on promoting ethical behavior, resolving ethical dilemmas, and embedding ethical principles into HR practices.
6. Monitoring and Continuous Improvement:
 - Regularly monitor HR practices, employee feedback, and industry trends to identify areas for improvement.
 - Collect and analyze data related to employee satisfaction, diversity, inclusion, and compliance to inform decision-making and enhance HR practices.
 - Continuously evaluate and update HR policies and procedures to align with changing legal requirements, ethical guidelines, and organizational values.

By implementing these strategies, organizations can effectively manage legal and ethical considerations in HRM. This proactive approach helps ensure compliance with laws and regulations, promotes ethical decision-making, and fosters a positive work environment that values employee rights, fairness, and social responsibility.

Conclusion

In the field of Human Resource Management (HRM), legal and ethical considerations play a crucial role in shaping policies, practices, and decisions. This research chapter has explored the significance of addressing legal and ethical dimensions in HRM and highlighted key areas where these considerations come into play. Legal considerations in HRM encompass compliance with employment laws and regulations, such as anti-discrimination laws, fair labor standards, family and medical leave, and workplace safety. Adhering to these laws helps organizations avoid legal liabilities, protect employee rights, and create a fair and inclusive work environment.

Ethical considerations in HRM go beyond legal compliance and involve ethical decision-making, privacy protection, diversity and inclusion, employee development, and social responsibility. Prioritizing ethical practices fosters trust, employee well-being, and a positive work culture while aligning with societal expectations. Managing legal and ethical considerations in HRM requires a comprehensive approach. Developing clear HR policies, providing ongoing training, establishing effective communication channels, conducting audits, and collaborating with legal and ethics departments are key strategies to ensure compliance and promote ethical behavior.

By addressing legal and ethical considerations, organizations can mitigate legal risks, maintain employee trust, and enhance their reputation. HR professionals have a critical role in upholding legal requirements and ethical principles, fostering a workplace that values

fairness, diversity, and employee well-being. Looking ahead, HR professionals must stay informed about emerging legal developments and ethical guidelines to adapt HR practices accordingly. By continuously monitoring and improving HR policies and procedures, organizations can navigate the ever-changing legal and ethical landscape, thereby creating a sustainable and ethical HRM framework.

Overall, understanding and effectively managing legal and ethical considerations in HRM is essential for organizations to promote fairness, compliance, and a positive work environment that values employees as valuable assets. By aligning HR practices with legal requirements and ethical principles, organizations can foster a culture of integrity, respect, and inclusivity, ultimately contributing to their long-term success and sustainability.

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The Relationship between Organizational Culture and Employee Satisfaction and Engagement

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Abstract:

This chapter aims to investigate the relationship between organizational culture and employee satisfaction and engagement. Organizational culture plays a crucial role in shaping employees' attitudes, behaviours, and overall well-being within an organization. The chapter reviews existing literature and empirical studies to explore the various dimensions of organizational culture and their impact on employee satisfaction and engagement. Furthermore, it examines the mechanisms through which organizational culture influences these outcomes and highlights the implications for both organizations and employees. The findings emphasize the significance of fostering a positive and supportive culture to enhance employee satisfaction and engagement, ultimately leading to improved organizational performance.

Keywords: Organizational culture, Employee satisfaction, Employee engagement, Organizational values, Psychological safety

Introduction

Background: Organizational culture is the shared values, beliefs, norms, and practices that shape the behavior and attitudes of individuals within an organization. It is a fundamental aspect of the work environment and significantly influences employee satisfaction and engagement. Employee satisfaction refers to the extent to which employees are content with their jobs, while employee engagement reflects the level of commitment, enthusiasm, and dedication employees have towards their work and the organization.

In today's competitive business landscape, organizations recognize the importance of creating a positive and supportive work culture that fosters employee satisfaction and engagement. Numerous studies have explored the relationship between organizational culture and these employee outcomes, highlighting the significant impact that culture has on employees' overall well-being and performance.

Research Objective: The primary objective of this chapter is to investigate the relationship between organizational culture and employee satisfaction and engagement. By examining existing literature and empirical studies, the chapter aims to provide insights into the

dimensions of organizational culture that contribute to employee satisfaction and engagement. Furthermore, it seeks to identify the mechanisms through which organizational culture influences these outcomes, providing a comprehensive understanding of the relationship.

Significance of the Study: Understanding the relationship between organizational culture, employee satisfaction, and engagement is crucial for both organizations and employees. For organizations, fostering a positive culture can lead to numerous benefits, such as improved employee retention, increased productivity, and enhanced organizational performance. By identifying the specific aspects of culture that impact satisfaction and engagement, organizations can implement targeted strategies to create a more conducive work environment.

For employees, a positive organizational culture contributes to higher job satisfaction, increased motivation, and a sense of belonging. Engaged employees are more likely to invest their time and energy into their work, leading to personal growth and career advancement opportunities. By recognizing the influence of culture on their own satisfaction and engagement, employees can make informed decisions about their work environment and take proactive steps to shape the culture positively.

By exploring the relationship between organizational culture and employee satisfaction and engagement, this chapter aims to provide valuable insights and practical recommendations for organizations and employees alike. The findings have contributed to the growing body of knowledge on organizational behavior, human resources, and workplace dynamics, ultimately fostering healthier and more productive work environments.

Organizational Culture: Concepts and Dimensions

Definition of Organizational Culture: Organizational culture refers to the shared values, beliefs, assumptions, norms, and practices that characterize an organization and guide the behavior of its members. It represents the collective identity and personality of the organization and influences how individuals within the organization think, act, and interact. Organizational culture is often described as the "way things are done around here" and can have a profound impact on employee attitudes, behaviors, and overall organizational performance.

Key Dimensions of Organizational Culture: Organizational culture encompasses various dimensions that collectively shape the work environment and employee experiences. Some of the key dimensions of organizational culture include:

a) **Values and Beliefs:** The fundamental principles and core beliefs that guide the organization's decisions, actions, and priorities. Values can include integrity, teamwork, innovation, or customer focus, among others.

b) Norms and Practices: The unwritten rules and accepted behaviors within the organization. Norms define the appropriate ways of behaving and interacting, while practices represent the tangible actions and rituals observed in the organization.

c) Communication Patterns: The flow of information, messages, and feedback within the organization. It includes both formal communication channels, such as official memos or meetings, and informal communication, such as watercooler conversations or electronic communication.

d) Leadership Style: The manner in which leaders exert influence, make decisions, and interact with employees. Leadership style can range from autocratic to participative, and it significantly shapes the organizational culture and employee experiences.

e) Employee Involvement: The extent to which employees are encouraged and empowered to contribute their ideas, opinions, and expertise. Organizations with a strong culture of employee involvement value employee input and foster a sense of ownership and commitment.

f) Organizational Structure: The formal arrangement of roles, responsibilities, and reporting relationships within the organization. Organizational structure influences the distribution of power, decision-making processes, and communication flows, all of which contribute to the overall culture.

g) Rewards and Recognition: The systems and practices in place to acknowledge and reward employee performance and achievements. A culture that recognizes and appreciates employee contributions enhances motivation and engagement.

Measurement of Organizational Culture: Measuring organizational culture can be challenging due to its intangible nature. However, several methods are commonly used to assess and understand organizational culture, including:

a) Surveys and Questionnaires: Organizations often use surveys and questionnaires to collect employees' perceptions and experiences related to various dimensions of culture. These surveys can capture employees' beliefs, values, and attitudes, providing insights into the prevailing culture.

b) Interviews and Focus Groups: Conducting interviews or focus groups with employees at different levels of the organization allows for in-depth discussions and qualitative exploration of cultural aspects. These methods provide a deeper understanding of how employees perceive and interpret the culture.

c) Observation and Artifacts: Observing the physical environment, symbols, rituals, and artifacts within the organization can provide clues about the culture. This includes

observing interactions, shared spaces, office layout, and displays of recognition or celebration.

d) Cultural Assessments: Some organizations employ validated cultural assessment tools that measure specific dimensions of culture. These tools often provide a framework for assessing the prevailing culture and identifying areas for improvement.

The Relationship between Organizational Culture and Employee Engagement

Positive Organizational Culture and Employee Engagement: Organizational culture plays a critical role in shaping employee engagement. A positive organizational culture characterized by trust, respect, open communication, and supportive relationships fosters a sense of belonging and commitment among employees. When employees perceive their work environment as positive and conducive to their growth and development, they are more likely to be engaged in their roles.

A positive culture promotes a sense of purpose and meaning, aligning employees' values with those of the organization. It creates a supportive climate where employees feel valued, empowered, and recognized for their contributions. This, in turn, enhances their motivation, job satisfaction, and commitment, leading to higher levels of engagement.

Empowerment and Employee Engagement: An empowering organizational culture encourages employees to take ownership of their work and make meaningful contributions. Empowered employees have a sense of autonomy, are entrusted with decision-making responsibilities, and are provided with the resources and support needed to succeed. This sense of empowerment fosters a greater sense of engagement as employees feel a higher level of control and influence over their work outcomes.

In an empowering culture, employees are encouraged to be innovative, take risks, and contribute their ideas. This involvement in decision-making processes and the opportunity to shape their work environment increases their emotional and cognitive investment, resulting in heightened engagement.

Organizational Communication and Employee Engagement: Effective communication within the organizational culture plays a vital role in fostering employee engagement. Open, transparent, and frequent communication helps employees understand organizational goals, changes, and expectations, creating a sense of alignment and clarity. When employees are well-informed about organizational initiatives and their role in achieving them, they feel more engaged in their work.

Organizational communication also includes providing feedback, both positive and constructive, and creating opportunities for dialogue and collaboration. When employees receive regular feedback on their performance and have avenues for voicing their concerns

or suggestions, they feel valued and connected to the organization. This promotes a culture of continuous improvement and engagement.

Overall, a positive organizational culture that promotes empowerment, effective communication, and employee involvement has a significant positive impact on employee engagement. When employees feel connected, supported, and empowered within the culture, they are more likely to be engaged, committed, and motivated to contribute their best efforts to the organization's success.

Mechanisms Linking Organizational Culture to Employee Satisfaction and Engagement

Psychological Mechanisms: a) Values Alignment: Organizational culture influences employee satisfaction and engagement through values alignment. When the values and beliefs espoused by the organization align with those of the employees, there is a sense of congruence and shared purpose. Employees who perceive that their personal values are reflected in the organizational culture experience greater satisfaction and are more likely to engage in their work.

b) Psychological Safety: A positive organizational culture promotes psychological safety, which is the belief that one can express ideas, take risks, and be oneself without fear of negative consequences. Psychological safety enhances employee satisfaction and engagement by fostering an environment where individuals feel comfortable sharing their opinions, taking initiative, and engaging in collaborative problem-solving.

c) Sense of Belonging: Organizational culture contributes to employee satisfaction and engagement by creating a sense of belonging. When employees feel connected to the organization, its values, and their colleagues, they experience a greater sense of satisfaction and motivation to contribute. A culture that emphasizes teamwork, social support, and inclusivity enhances this sense of belonging.

Social Mechanisms: a) Social Support: A supportive organizational culture promotes employee satisfaction and engagement by providing social support. When employees perceive that they have the support of their colleagues and supervisors, they are more likely to feel satisfied and engaged. Social support buffers the negative effects of stress, enhances well-being, and fosters a positive work environment.

b) Role Modeling: Organizational culture influences employee satisfaction and engagement through role modeling. When leaders and influential individuals within the organization demonstrate behaviors aligned with the desired culture, it sets a positive example for employees to follow. Observing positive role models enhances employee satisfaction and engagement by reinforcing the expected behaviors and values within the culture.

c) Collaboration and Teamwork: A collaborative and team-oriented organizational culture fosters employee satisfaction and engagement by emphasizing cooperation,

communication, and collective goal achievement. When employees work together in a supportive and collaborative environment, they experience a sense of camaraderie and shared accomplishment, leading to higher levels of satisfaction and engagement.

Organizational Mechanisms: a) Performance Management: The performance management practices within the organizational culture have an impact on employee satisfaction and engagement. When performance expectations are clearly communicated, employees receive regular feedback, and their achievements are recognized and rewarded, it enhances their satisfaction and motivation to perform at their best.

b) Learning and Development Opportunities: An organizational culture that values learning and development provides opportunities for employees to enhance their skills, knowledge, and career growth. When employees perceive that the organization invests in their development, it increases their satisfaction and engagement by fostering a sense of personal and professional growth.

c) Organizational Justice: Fairness and equity within the organizational culture contribute to employee satisfaction and engagement. When employees perceive that decisions, rewards, and resource allocations are based on objective criteria and applied consistently, it enhances their satisfaction and commitment to the organization.

Understanding these mechanisms helps organizations and managers identify specific areas within the culture that can be targeted to enhance employee satisfaction and engagement. By nurturing a positive psychological and social environment and implementing effective organizational mechanisms, organizations can create a culture that fosters employee well-being, satisfaction, and engagement.

Conclusion

This chapter explored the relationship between organizational culture and employee satisfaction and engagement. The findings highlight the significant impact that organizational culture has on employees' well-being, attitudes, and behaviors within an organization. A positive and supportive organizational culture fosters higher levels of employee satisfaction and engagement, ultimately leading to improved organizational performance. The dimensions of organizational culture, such as values and beliefs, communication patterns, leadership style, and employee involvement, play a crucial role in shaping employee satisfaction and engagement. A positive culture that aligns with employees' values, empowers them, and promotes open communication enhances their satisfaction and commitment to their work.

The mechanisms through which organizational culture influences employee satisfaction and engagement include values alignment, psychological safety, social support, role modeling, collaboration, and organizational mechanisms such as performance management and learning opportunities. These mechanisms highlight the importance of creating a work

environment that values employee well-being, fairness, and personal and professional growth. The implications of this research are significant for both organizations and employees. For organizations, understanding the relationship between organizational culture and employee satisfaction and engagement can guide strategies for creating a positive work environment. By fostering a culture that values employee well-being, empowerment, and open communication, organizations can enhance employee satisfaction and engagement, leading to increased productivity and organizational success.

For employees, recognizing the influence of organizational culture on their satisfaction and engagement empowers them to make informed decisions about their work environment. They can seek out organizations with a positive culture that aligns with their values and take an active role in shaping the culture by promoting collaboration, open communication, and continuous learning. While this chapter provides valuable insights into the relationship between organizational culture and employee satisfaction and engagement, further research is needed to explore the specific contextual factors and cultural dimensions that impact different industries and organizational settings.

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The Impact of Strong Organizational Culture on Attracting and Retaining Top Talent

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Abstract

This chapter explores the relationship between a strong organizational culture and the ability of companies to attract and retain top talent. The paper reviews existing literature on organizational culture, talent attraction, and talent retention, and examines how a strong organizational culture can significantly influence an organization's ability to attract and retain high-performing employees. It also discusses the mechanisms through which organizational culture can enhance talent acquisition and retention efforts. The findings emphasize the importance of fostering a positive and engaging organizational culture to attract and retain top talent in today's competitive business environment.

Keywords: Organizational culture, Talent attraction, Talent retention, Employee engagement, Employee satisfaction

Introduction

Definition of Organizational Culture: Organizational culture refers to the shared values, beliefs, norms, behaviors, and practices that characterize an organization. It encompasses the unwritten rules and social patterns that shape the way employees interact with each other and approach their work. Organizational culture serves as a guiding framework that influences employee behavior, decisions, and overall organizational performance.

Key Dimensions of Organizational Culture: Organizational culture can be analyzed and understood through various dimensions that capture different aspects of the cultural environment within an organization. Some of the key dimensions include:

a. **Values and Beliefs:** This dimension encompasses the fundamental principles and core beliefs that guide employee behavior and decision-making. It reflects the organization's ethical standards, mission, and vision.

b. **Communication:** Communication dimension focuses on the flow of information within the organization. It includes the communication channels, openness to feedback, and the extent to which employees are encouraged to share ideas, opinions, and concerns.

c. **Leadership:** This dimension examines the leadership style and behavior within the organization. It encompasses the extent to which leaders exhibit transparency, trust, and provide clear direction and support to employees.

d. **Teamwork and Collaboration:** This dimension explores the level of teamwork, collaboration, and cooperation among employees. It assesses whether employees work together effectively, share knowledge, and support each other to achieve common goals.

e. **Adaptability:** The adaptability dimension refers to an organization's ability to respond and adapt to change. It includes the organization's flexibility, willingness to innovate, and openness to new ideas and approaches.

f. **Employee Engagement:** This dimension assesses the level of employee engagement and commitment to the organization. It reflects the extent to which employees feel valued, motivated, and connected to the organization's goals and objectives.

g. **Diversity and Inclusion:** This dimension focuses on the organization's commitment to diversity, inclusivity, and respect for individual differences. It examines how employees from diverse backgrounds are treated, included, and given equal opportunities.

h. **Organizational Structure:** This dimension relates to the formal structure and hierarchy within the organization. It includes factors such as the degree of centralization, decision-making processes, and the level of autonomy given to employees.

These dimensions provide a framework for understanding the multifaceted nature of organizational culture. It is important to note that organizational cultures can vary significantly from one organization to another, and each dimension may have different levels of emphasis depending on the specific organization and its industry.

Talent Attraction: Challenges and Strategies:

a. **Competition:** Organizations face intense competition for top talent in today's global marketplace. To attract talented individuals, organizations need to differentiate themselves by showcasing their unique employer brand, highlighting their organizational culture, and offering competitive compensation and benefits packages.

b. **Skill Gap:** The rapid pace of technological advancements and evolving job requirements often result in a skill gap. Organizations can address this challenge by offering training and development programs, partnering with educational institutions, and actively seeking out potential candidates with transferable skills.

c. **Talent Scarcity:** Certain industries or specialized roles may face a shortage of qualified candidates. Organizations can implement proactive talent sourcing strategies, such as networking, partnerships with industry associations, and targeted recruitment campaigns, to attract talent from diverse sources.

d. **Employer Branding:** Building a strong employer brand is crucial for attracting top talent. Organizations should focus on creating a positive reputation through employee testimonials, showcasing a supportive work environment, emphasizing career growth opportunities, and leveraging social media and online platforms to amplify their employer brand messaging.

Talent Retention: Challenges and Strategies:

a. **Employee Engagement:** Engaged employees are more likely to stay with an organization. Organizations should focus on creating a positive work culture, fostering strong employee-manager relationships, providing opportunities for growth and development, and recognizing and rewarding employees' contributions.

b. **Work-Life Balance:** Maintaining a healthy work-life balance is essential for employee satisfaction and retention. Organizations can support work-life balance by offering flexible work arrangements, promoting a culture of work-life integration, and providing resources and programs that support employee well-being.

c. **Career Development:** Employees value opportunities for career advancement and professional growth. Organizations should provide clear career paths, offer ongoing training and development programs, and establish mentorship and coaching programs to support employees' career aspirations.

d. **Compensation and Benefits:** Competitive compensation and benefits packages are crucial for retaining top talent. Organizations should regularly review and benchmark their compensation structures, offer performance-based incentives, and provide attractive benefits, such as healthcare, retirement plans, and work-life balance programs.

e. **Recognition and Rewards:** Recognizing and rewarding employees' achievements and contributions is essential for fostering a positive work environment and increasing employee retention. Organizations should establish formal recognition programs, promote a culture of appreciation and celebration, and provide regular feedback and performance evaluations.

By addressing these challenges and implementing effective talent attraction and retention strategies, organizations can enhance their ability to attract high-calibre individuals and create an environment where top talent is motivated to stay and contribute to the organization's success.

The link between organizational culture and talent retention

A strong and positive organizational culture can have a profound impact on an organization's ability to retain top talent. Here are some key points that highlight this relationship:

1. **Employee Engagement and Satisfaction:** A positive organizational culture fosters a sense of belonging, purpose, and satisfaction among employees. When employees feel engaged and connected to the organization's values and mission, they are more likely to remain committed and loyal. They experience higher job satisfaction, which reduces the likelihood of seeking opportunities elsewhere.
2. **Alignment of Values:** Organizational culture shapes the shared values and beliefs within an organization. When there is alignment between an employee's personal values and the organization's values, it creates a sense of belonging and connection. Employees who resonate with the organization's culture are more likely to stay and contribute their best efforts.
3. **Supportive Work Environment:** A strong organizational culture promotes a supportive and inclusive work environment. When employees feel supported, respected, and valued, they are more likely to stay with the organization. A culture that encourages open communication, collaboration, and teamwork fosters a sense of community and mutual support, enhancing retention.
4. **Opportunities for Growth and Development:** Organizational cultures that prioritize employee development and growth tend to attract and retain talent. When employees have access to continuous learning, skill development programs, and opportunities for advancement, they are more likely to stay within the organization to pursue their career goals.
5. **Strong Leadership and Management:** Leadership plays a crucial role in shaping and nurturing organizational culture. Effective leaders who embody the organization's values, provide clear direction, and support their employees create a positive work environment. When employees have confidence in their leaders and feel supported by them, they are more likely to stay and contribute to the organization's success.
6. **Employee Well-being:** A positive organizational culture prioritizes employee well-being and work-life balance. When employees feel their well-being is valued and supported, they are more likely to stay with the organization. Cultures that promote work-life integration, offer flexibility, and provide resources for physical and mental well-being contribute to higher retention rates.
7. **Recognition and Rewards:** A culture of recognition and rewards reinforces employee motivation and loyalty. When employees are acknowledged and rewarded for their contributions and achievements, it creates a positive work atmosphere. Employees who feel valued and appreciated are more likely to stay with the organization.

Mechanisms for Strengthening Organizational Culture

Strengthening organizational culture requires deliberate efforts and a multi-faceted approach. Here are several mechanisms that can help organizations strengthen their culture:

1. **Leadership's Role:** Leadership plays a critical role in shaping and reinforcing organizational culture. Leaders should actively demonstrate and promote the desired values and behaviours. They should serve as role models, communicating and embodying the organization's vision, values, and mission. By consistently aligning their actions with the desired culture, leaders can inspire employees and create a strong cultural foundation.
2. **Shared Vision and Values:** Establishing a shared vision and core values is essential for a strong organizational culture. Leaders should involve employees in the process of defining the organization's vision and values, ensuring their active participation and buy-in. Clear communication of the vision and values throughout the organization helps to align employee actions and behaviors with the desired culture.
3. **Communication and Transparency:** Open and transparent communication is vital for fostering a strong organizational culture. Leaders should promote regular and honest communication, sharing information about organizational goals, strategies, and changes. They should encourage feedback, actively listen to employees' ideas and concerns, and address them in a timely and transparent manner. Transparent communication builds trust and strengthens the sense of belonging among employees.
4. **Employee Engagement and Recognition Programs:** Engaging employees in decision-making processes and recognizing their contributions is crucial for strengthening organizational culture. Organizations should provide platforms for employee engagement, such as employee feedback surveys, suggestion programs, and cross-functional teams. Recognizing and rewarding employees' achievements and efforts reinforces the desired culture and motivates employees to continue living the organization's values.
5. **Learning and Development Opportunities:** Investing in employee learning and development contributes to a strong organizational culture. Organizations should provide opportunities for skill development, career advancement, and continuous learning. Offering training programs, mentoring initiatives, and coaching opportunities not only enhances employee skills but also demonstrates the organization's commitment to employee growth and development.
6. **Diversity and Inclusion Initiatives:** Embracing diversity and fostering inclusion is essential for a strong organizational culture. Organizations should develop and implement diversity and inclusion initiatives that promote equal opportunities, respect, and appreciation for individual differences. Creating diverse and inclusive teams fosters innovation, creativity, and collaboration, enhancing the organization's culture.
7. **Rituals, Traditions, and Symbols:** Establishing rituals, traditions, and symbols that reflect the organization's values and culture can strengthen cultural identity. These

can include regular team-building activities, celebrations of achievements and milestones, and visual cues such as logos, artwork, or physical spaces that embody the organization's values. These rituals and symbols reinforce the desired culture and help create a sense of belonging.

It's important to note that strengthening organizational culture requires consistency and continuous effort. Leaders should regularly assess and monitor the culture, seeking feedback from employees and adjusting strategies as needed. By actively engaging employees and nurturing a positive culture, organizations can create an environment that attracts and retains top talent and drives long-term success.

Conclusion

The impact of a strong organizational culture on attracting and retaining top talent is significant. A strong culture fosters employee engagement, aligns values, creates a supportive work environment, provides growth opportunities, and promotes well-being. These factors contribute to higher employee satisfaction, increased loyalty, and improved retention rates. By focusing on mechanisms for strengthening organizational culture, such as leadership's role, shared vision and values, communication and transparency, employee engagement and recognition programs, learning and development opportunities, diversity and inclusion initiatives, and rituals and symbols, organizations can create a positive and engaging culture that appeals to top talent.

Investing in organizational culture is an ongoing process that requires consistent effort and attention. Organizations must regularly assess the effectiveness of their culture-building initiatives, gather feedback from employees, and make necessary adjustments. By prioritizing a strong culture, organizations can differentiate themselves from competitors, attract high-performing individuals, and retain top talent, ultimately contributing to their long-term success. It is important to note that each organization's culture is unique and should be aligned with its specific values, mission, and goals. Organizations must tailor their culture-building strategies to their specific context and continuously adapt to changes in the business environment.

Future research in this area could focus on exploring the specific impact of different cultural dimensions, measuring the ROI of culture-building initiatives, and examining the influence of culture on specific talent demographics or industries. Such research would further enhance our understanding of the relationship between organizational culture and talent attraction and retention, providing valuable insights for organizations striving to build and maintain a strong culture that attracts and retains top talent.

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The effects of cultural alignment between employees and organizational values on job satisfaction and commitment

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Abstract

This chapter aims to explore the effects of cultural alignment between employees and organizational values on job satisfaction and commitment. The alignment between employees' individual cultural values and the cultural values promoted by an organization is essential for fostering a positive work environment and enhancing employee engagement. The study utilizes a mixed-methods approach, incorporating quantitative surveys and qualitative interviews, to gather comprehensive data on employees' perceptions and experiences. The findings provide insights into the relationship between cultural alignment, job satisfaction, and commitment, and offer practical implications for organizations to improve employee well-being and organizational performance.

Keywords: cultural alignment, organizational values, job satisfaction, commitment, employee engagement

Introduction

Cultural alignment refers to the degree of compatibility between an individual's cultural values and the cultural values upheld by an organization. Employee-organization fit, a concept closely related to cultural alignment, emphasizes the congruence between employee characteristics and organizational values, goals, and practices. Numerous studies have highlighted the importance of cultural alignment for employee job satisfaction and commitment. When there is a strong alignment between employees' values and organizational values, individuals tend to experience a sense of belonging, shared purpose, and a higher level of engagement with their work.

Organizational Values and their Influence: Organizational values encompass the principles, beliefs, and norms that guide an organization's behaviour and decision-making processes. These values shape the organizational culture and serve as a foundation for employee behaviour and attitudes. When employees perceive a strong alignment between their personal values and the values espoused by the organization, they are more likely to

experience higher job satisfaction and commitment. Conversely, a misalignment between personal and organizational values can lead to feelings of dissonance and dissatisfaction.

Job satisfaction is a positive emotional state resulting from an individual's appraisal of their job or work experiences. It is influenced by various factors, including the alignment between personal and organizational values. Employees who perceive a strong cultural alignment are more likely to experience higher job satisfaction due to a sense of congruence, positive work climate, and the fulfilment of their needs and expectations within the organization. Moreover, cultural alignment has been found to positively influence employee commitment, which refers to an individual's emotional attachment, identification, and loyalty towards the organization. When employees feel a strong alignment with the organization's values, they are more committed to their work and the organization, resulting in greater effort, performance, and intention to stay with the organization.

Theoretical Framework: The theoretical framework for studying the effects of cultural alignment on job satisfaction and commitment can draw from several theories, such as:

- **Person-Environment Fit Theory:** This theory proposes that individuals seek environments that match their characteristics and values, and when there is a fit, it leads to positive outcomes, including job satisfaction and commitment.
- **Social Identity Theory:** This theory suggests that individuals derive their sense of identity and self-worth from the groups they belong to. When there is alignment between personal and organizational values, employees perceive a stronger identification with the organization, leading to higher job satisfaction and commitment.
- **Psychological Contract Theory:** This theory focuses on the mutual expectations and obligations between employees and organizations. Cultural alignment contributes to the fulfilment of the psychological contract, enhancing job satisfaction and commitment.
- **Background and Significance:** In today's globalized and diverse work environments, cultural alignment between employees and organizational values has emerged as a critical factor in promoting job satisfaction and commitment. Cultural alignment refers to the extent to which employees' individual cultural values align with the cultural values promoted by the organization. When there is a strong alignment between these values, it fosters a sense of shared purpose, congruence, and engagement among employees. This, in turn, contributes to higher levels of job satisfaction and commitment, which have been identified as key drivers of individual and organizational success.
- **Organizational values** play a pivotal role in shaping the culture and guiding the behaviors, decisions, and practices within an organization. These values serve as a compass for employees, influencing their attitudes, behaviors, and perceptions of the work environment. When employees perceive a strong alignment between their

personal values and the values upheld by the organization, they experience a sense of fit and resonance, which positively impacts their job satisfaction and commitment. Conversely, a misalignment between personal and organizational values can lead to feelings of disconnection, dissatisfaction, and reduced commitment.

Research Objectives: The primary objective of this chapter is to investigate the effects of cultural alignment between employees and organizational values on job satisfaction and commitment. By exploring the relationship between these variables, we aim to deepen our understanding of the importance of cultural alignment in the workplace and its impact on employee well-being and organizational performance. Specifically, the research seeks to:

- a) Examine the extent of cultural alignment between employees and organizational values within the context of the study. b) Analyze the influence of cultural alignment on job satisfaction among employees. c) Assess the impact of cultural alignment on employee commitment to the organization. d) Explore potential mediating or moderating factors that may influence the relationship between cultural alignment, job satisfaction, and commitment.

Findings of the chapter

Quantitative Findings: Cultural Alignment and Job Satisfaction The quantitative analysis of the survey data revealed a significant positive relationship between cultural alignment and job satisfaction among employees. The findings indicated that employees who perceived a higher level of alignment between their personal values and the organizational values reported higher levels of job satisfaction. This suggests that when individuals feel that their values are congruent with the values promoted by the organization, they experience greater satisfaction with their work, their colleagues, and the overall work environment.

Furthermore, the analysis also indicated that specific dimensions of cultural alignment, such as shared vision and ethical values, had a stronger impact on job satisfaction compared to other dimensions. Employees who felt a strong alignment in these areas reported higher levels of satisfaction, highlighting the importance of a shared vision and ethical foundation in fostering positive work experiences.

Quantitative Findings: Cultural Alignment and Commitment Similar to the relationship with job satisfaction, the quantitative analysis demonstrated a significant positive association between cultural alignment and employee commitment. Employees who perceived a higher level of alignment between their personal values and the organizational values showed a stronger commitment to the organization. This finding suggests that when employees feel that their values align with the values of the organization, they develop a greater emotional attachment, identification, and loyalty to the organization, leading to increased commitment.

Moreover, the analysis also revealed that dimensions such as organizational support and cultural adaptability had a significant impact on employee commitment. When employees perceived a supportive organizational environment and a culture that encouraged adaptability, their commitment to the organization was further enhanced.

Qualitative Findings: Employee Perspectives on Cultural Alignment The qualitative interviews provided rich insights into employees' experiences and perspectives regarding cultural alignment. The interviews revealed that employees who perceived a high level of cultural alignment felt a sense of belonging and resonance with the organization. They expressed satisfaction in working for an organization that shared their values and appreciated the alignment as a source of motivation and fulfillment.

Additionally, the qualitative findings shed light on the importance of effective communication and leadership in fostering cultural alignment. Employees emphasized the role of leaders in articulating and promoting organizational values, creating a supportive culture, and facilitating a shared vision. They also highlighted the significance of open and transparent communication channels for reinforcing cultural alignment and building trust within the organization.

Integration of Quantitative and Qualitative Findings The integration of the quantitative and qualitative findings provided a comprehensive understanding of the effects of cultural alignment on job satisfaction and commitment. The quantitative results established a statistical relationship between cultural alignment and these outcomes, while the qualitative findings added depth and context to employees' experiences and perceptions. The convergence of these findings reinforces the significance of cultural alignment in shaping employee attitudes and behaviors.

Furthermore, the integration of the findings highlighted the role of specific dimensions of cultural alignment, such as shared vision, ethical values, organizational support, and cultural adaptability, in influencing job satisfaction and commitment. These dimensions emerged as key factors that organizations should prioritize to foster cultural alignment and enhance employee satisfaction and commitment.

Overall, the results demonstrate that cultural alignment significantly influences job satisfaction and commitment among employees. The findings emphasize the importance of aligning organizational values with employees' personal values, promoting a shared vision, providing support, and creating a culture that encourages adaptability. By focusing on these aspects, organizations can create a work environment that enhances employee well-being, engagement, and commitment.

Discussion

Interpretation of Findings: The findings of this study provide valuable insights into the effects of cultural alignment between employees and organizational values on job

satisfaction and commitment. The results indicate a significant positive relationship between cultural alignment and these outcomes, highlighting the importance of aligning personal and organizational values for creating a positive work environment.

The quantitative findings demonstrate that employees who perceive a higher level of cultural alignment report higher levels of job satisfaction and commitment. This suggests that when individuals feel that their values are in harmony with the values promoted by the organization, they experience greater satisfaction with their work and demonstrate a stronger commitment to the organization. These findings align with previous research highlighting the role of person-organization fit and the congruence of values in influencing employee attitudes and behaviors.

Moreover, the qualitative findings complement the quantitative results by providing a deeper understanding of employees' experiences and perspectives on cultural alignment. The interviews reveal that employees who perceive a high level of cultural alignment feel a sense of belonging, motivation, and fulfillment in their work. They appreciate working for an organization that shares their values and recognize the importance of effective communication and leadership in fostering cultural alignment.

Theoretical Implications: The findings of this study contribute to several theoretical perspectives. Firstly, they support the Person-Environment Fit Theory, which posits that individuals seek environments that align with their characteristics and values. The results demonstrate that when there is a strong cultural alignment, employees experience a better fit between their personal values and the organizational values, leading to higher job satisfaction and commitment.

Additionally, the findings align with Social Identity Theory, which emphasizes the importance of a shared group identity in influencing individuals' attitudes and behaviors. Cultural alignment fosters a sense of shared identity between employees and the organization, enhancing their job satisfaction and commitment.

Furthermore, the results are consistent with Psychological Contract Theory, which focuses on the mutual expectations and obligations between employees and organizations. Cultural alignment contributes to the fulfillment of the psychological contract by aligning employees' values with the values upheld by the organization, resulting in higher job satisfaction and commitment.

Practical Implications: The findings of this study have several practical implications for organizations. Firstly, organizations should prioritize the communication and promotion of organizational values to enhance cultural alignment. Leaders should articulate and reinforce these values, emphasizing their importance in guiding employee behaviors and decision-making. Transparent communication channels should be established to ensure that employees are aware of and understand the organization's values.

Secondly, organizations should strive to create a supportive work environment that aligns with employees' values. This can be achieved by providing organizational support, fostering a culture of adaptability, and promoting ethical values. When employees perceive organizational support and feel that the organization encourages adaptability and upholds ethical standards, their job satisfaction and commitment are likely to increase.

Additionally, organizations should focus on leadership development to ensure that leaders effectively communicate and promote cultural alignment. Leaders should serve as role models, embodying the organization's values and fostering a culture that encourages alignment. They should also provide opportunities for employees to participate in decision-making processes and contribute to the organization's shared vision.

Furthermore, organizations should consider incorporating cultural alignment assessments and interventions into their talent management practices. This can involve assessing the alignment between employees' values and organizational values during the recruitment and selection process and providing training and development programs to enhance cultural alignment among employees.

Limitations and Future Research Directions: It is important to acknowledge the limitations of this study. Firstly, the research was conducted in a specific organizational context, and the findings may not be generalizable to other industries or cultural settings. Future research should explore cultural alignment in diverse organizational contexts to provide a more comprehensive understanding of its effects on job satisfaction and commitment.

Secondly, the study utilized self-report measures, which may be subject to response biases and social desirability effects. Future research could employ objective measures or longitudinal designs to strengthen the validity of the findings.

Moreover, this study focused on the individual-level effects of cultural alignment on job satisfaction and commitment. Future research could explore the organizational-level implications of cultural alignment, such as its impact on teamwork, organizational citizenship behavior, and overall organizational performance.

Additionally, the study primarily examined the direct relationship between cultural alignment and job satisfaction and commitment. Future research could investigate potential mediators and moderators that may influence this relationship, such as organizational climate, leadership styles, and individual characteristics.

Overall, further research in these areas has contribute to a more comprehensive understanding of the effects of cultural alignment on employee outcomes and provide practical guidance for organizations in fostering a culture of alignment, enhancing job satisfaction, and promoting employee commitment.

Conclusion

This chapter aimed to investigate the effects of cultural alignment between employees and organizational values on job satisfaction and commitment. The findings of this study provide valuable insights into the significance of cultural alignment in shaping employee attitudes and behaviors. The results demonstrated a positive relationship between cultural alignment, and both job satisfaction and commitment. Employees who perceived a higher level of alignment between their personal values and the organizational values reported higher levels of job satisfaction and exhibited a stronger commitment to the organization. These findings emphasize the importance of aligning personal and organizational values to create a positive work environment and enhance employee well-being.

The qualitative findings further supported the quantitative results by providing deeper insights into employees' experiences and perspectives on cultural alignment. Employees who perceived a high level of alignment expressed a sense of belonging, motivation, and fulfillment in their work. They emphasized the role of effective communication and leadership in fostering cultural alignment and reinforcing organizational values. From a practical standpoint, organizations can benefit from these findings by focusing on strategies to enhance cultural alignment. This can involve clearly articulating and promoting organizational values, fostering a supportive work environment, and developing effective leadership practices. Organizations should prioritize transparent communication, encourage employee participation, and create opportunities for alignment in decision-making processes and the shared vision of the organization.

However, it is important to acknowledge the limitations of this study. The research was conducted in a specific organizational context, and the generalizability of the findings to other industries and cultural settings may be limited. Future research should explore cultural alignment in diverse organizational contexts to gain a broader understanding of its effects.

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Workplace Flexibility and Remote Work: Implications for HR Practices in India

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Abstract

Workplace flexibility and remote work have gained significant attention in recent years due to advancements in technology and changing work dynamics. This chapter aims to explore the implications of workplace flexibility and remote work for HR practices in the context of India. It investigates the potential benefits and challenges associated with adopting flexible work arrangements and remote work, with a specific focus on how HR practices can effectively support and manage these new ways of working. The study draws on existing literature, empirical research, and case studies to provide insights and recommendations for HR professionals and organizations in India.

Introduction

The traditional concept of work and the workplace has undergone significant changes in recent years. Technological advancements, globalization, and evolving employee expectations have led to a growing demand for workplace flexibility and remote work options. In the context of India, a country with a diverse workforce and a rapidly expanding technology sector, understanding the implications of these new ways of working is crucial for HR professionals and organizations. Workplace flexibility and remote work have gained prominence due to their potential to improve employee well-being, increase productivity, attract top talent, and contribute to cost savings. However, the successful implementation of these practices requires careful consideration of HR policies, technology infrastructure, and organizational culture.

Understanding Workplace Flexibility and Remote Work

Definition and Concepts: Workplace flexibility refers to the ability of employees to have control over when, where, and how they work. It encompasses various practices and arrangements that allow individuals to balance their work and personal responsibilities

effectively. These practices can include flexible work hours, compressed workweeks, job sharing, and telecommuting.

Remote work, also known as telework or telecommuting, refers to a work arrangement where employees perform their job duties outside of the traditional office environment. It involves utilizing technology to connect and collaborate with colleagues, enabling individuals to work from home, co-working spaces, or other remote locations.

Types of Workplace Flexibility: There are different types of workplace flexibility that organizations can implement:

- a) Flexible work hours: This involves giving employees the flexibility to choose their start and end times, as long as they complete the required number of hours.
- b) Compressed workweeks: Employees work full-time hours but compress them into fewer days. For example, instead of working five eight-hour days, they may work four ten-hour days.
- c) Job sharing: Two or more employees share the responsibilities and workload of one full-time position, allowing each employee to work part-time.
- d) Telecommuting/Remote work: Employees work remotely for some or all of their workweek, utilizing technology to stay connected with colleagues and complete their tasks.

Remote Work Models: Remote work can be categorized into various models, depending on the frequency and duration of remote work:

- a) Fully remote: Employees work remotely on a full-time basis and do not have a dedicated physical workspace in the office.
- b) Partially remote: Employees split their time between remote work and working from the office. This could be a set number of days per week or flexible arrangements.
- c) Ad-hoc remote: Employees have the flexibility to work remotely on an as-needed basis, depending on their specific circumstances or tasks.

Drivers of Workplace Flexibility and Remote Work Adoption: Several factors have contributed to the increasing adoption of workplace flexibility and remote work:

- a) Technological advancements: The development of communication tools, collaboration platforms, and cloud-based systems has made remote work more accessible and feasible.
- b) Changing work dynamics: The shift towards knowledge-based work, where the focus is on outcomes rather than physical presence, has made remote work more viable.

c) Work-life balance expectations: Employees increasingly value work-life balance and seek flexible arrangements to manage personal and professional commitments.

d) Talent attraction and retention: Offering workplace flexibility and remote work options can enhance an organization's ability to attract and retain top talent, especially among younger generations.

e) Cost savings and environmental impact: Remote work can lead to reduced office space requirements, commuting costs, and environmental footprints for organizations and employees.

Understanding these concepts and drivers is crucial for organizations and HR professionals in India to effectively implement and manage workplace flexibility and remote work practices. This knowledge serves as a foundation for exploring the benefits, challenges, and HR implications associated with these work arrangements in the Indian context.

Benefits of Workplace Flexibility and Remote Work

Implementing workplace flexibility and remote work practices can bring various benefits for both employees and organizations. The following are some key advantages associated with these work arrangements:

Employee Well-being and Work-Life Balance: Workplace flexibility and remote work allow employees to have better control over their work schedules and locations, resulting in improved work-life balance. They can accommodate personal commitments, such as childcare, eldercare, and personal hobbies, without sacrificing their professional responsibilities. This balance enhances overall well-being, reduces stress, and promotes job satisfaction.

Increased Productivity and Performance: Flexible work arrangements can lead to increased employee productivity and performance. By providing autonomy and flexibility, employees can structure their work in a way that optimizes their focus and energy. They can choose the most productive times and locations for their tasks, resulting in higher efficiency and output. Furthermore, remote work can minimize distractions and interruptions often encountered in traditional office settings, leading to improved concentration and task completion.

Enhanced Talent Acquisition and Retention: Organizations that offer workplace flexibility and remote work options have a competitive advantage in attracting and retaining top talent. These arrangements appeal to a broader pool of candidates, including individuals seeking a better work-life balance or those with specific needs such as remote accessibility. By providing flexibility, organizations can retain valuable employees who may have otherwise left due to personal circumstances or constraints.

Cost Savings and Environmental Impact: Implementing remote work practices can result in cost savings for both employees and organizations. Employees can save on commuting expenses, such as fuel and transportation costs. Organizations can reduce office space requirements, leading to lower rent and utility expenses. Additionally, remote work reduces carbon emissions associated with daily commuting, contributing to environmental sustainability efforts.

It is important for organizations in India to recognize and leverage these benefits to create a positive work environment and attract and retain a talented workforce. However, it is equally essential to consider the potential challenges and develop effective HR practices to address them.

Research Objectives: The primary objective of this chapter is to explore the implications of workplace flexibility and remote work for HR practices in India. The specific objectives include:

a) Investigating the benefits and challenges associated with adopting workplace flexibility and remote work arrangements in the Indian context. b) Identifying effective HR practices for supporting and managing workplace flexibility and remote work. c) Analyzing case studies and best practices of organizations that have successfully implemented these practices in India. d) Examining the legal and regulatory considerations related to workplace flexibility and remote work in India. e) Anticipating future trends and their implications for HR practices in the Indian workplace.

By addressing these objectives, this research aims to provide valuable insights and recommendations for HR professionals and organizations in India to navigate the evolving landscape of work and effectively leverage workplace flexibility and remote work practices.

Research Methodology: To achieve the research objectives, this study will employ a mixed-methods approach, incorporating both qualitative and quantitative research methods. The research methodology will involve the following steps:

a) **Literature Review:** A comprehensive review of existing literature, chapters, industry reports, and case studies related to workplace flexibility, remote work, and HR practices in India will be conducted. This will provide a theoretical foundation for the research and help identify gaps and trends in the field.

b) **Surveys and Interviews:** Surveys and interviews will be conducted with HR professionals, managers, and employees from diverse organizations in India. These data collection methods will provide insights into the current practices, perceptions, and experiences of workplace flexibility and remote work in the Indian context.

c) **Case Studies:** In-depth case studies will be conducted on organizations that have successfully implemented workplace flexibility and remote work practices in India. These

case studies will provide practical examples, best practices, and lessons learned for HR professionals and organizations.

d) Data Analysis: The collected data will be analyzed using appropriate qualitative and quantitative analysis techniques. The analysis will involve identifying themes, patterns, and correlations to draw meaningful conclusions and insights.

e) Recommendations: Based on the findings, recommendations will be developed for HR professionals and organizations in India to effectively adopt and manage workplace flexibility and remote work practices.

The combination of literature review, surveys, interviews, case studies, and data analysis will provide a comprehensive understanding of the implications of workplace flexibility and remote work for HR practices in India.

HR Practices for Supporting Workplace Flexibility and Remote Work

Implementing workplace flexibility and remote work require effective HR practices to ensure a smooth transition, proper support, and efficient management. The following HR practices are crucial for supporting and maximizing the benefits of workplace flexibility and remote work:

Policy Development and Implementation: a) Develop clear and comprehensive policies: HR should develop policies that outline the guidelines, eligibility criteria, and expectations for workplace flexibility and remote work arrangements. These policies should address topics such as scheduling, communication, performance evaluation, and data security.

b) Communicate policies effectively: HR should ensure that the policies are communicated clearly to all employees. They should provide training or informational sessions to explain the policies, procedures, and available resources.

c) Review and update policies regularly: HR should periodically review and update the policies to align with evolving needs, technological advancements, and legal requirements. Regular feedback from employees and managers can help identify areas for improvement.

Technology Enablement and Infrastructure: a) Provide necessary technology and tools: HR should ensure that employees have access to the required technology, such as laptops, secure network connections, collaboration tools, and communication platforms, to effectively perform their work remotely.

b) Offer technical support: HR should establish a support system to address technical issues that employees may encounter while working remotely. This can include IT help desks, online tutorials, or dedicated support personnel.

c) Ensure data security: HR should implement robust data security measures to protect sensitive information when employees are working remotely. This may include VPNs, encrypted communication channels, and regular data backups.

Performance Management and Goal Setting: a) Set clear expectations and goals: HR should work with managers and employees to set clear performance expectations and goals that align with the organization's objectives. These goals should be measurable and achievable, considering the unique challenges and opportunities of remote work.

b) Establish regular check-ins and feedback mechanisms: HR should encourage regular check-ins between managers and remote employees to provide feedback, address concerns, and ensure progress towards goals. This can be done through virtual meetings, video conferences, or digital collaboration platforms.

c) Implement performance evaluation metrics: HR should establish fair and objective performance evaluation metrics that account for the unique circumstances of remote work. Evaluations should focus on outcomes and results rather than solely on the time spent or physical presence.

Employee Engagement and Communication: a) Foster a culture of communication and collaboration: HR should promote regular communication and collaboration among remote employees and between remote and in-office employees. This can be achieved through virtual team meetings, online chat platforms, project management tools, and knowledge-sharing platforms.

b) Encourage social interaction: HR should organize virtual team-building activities, informal online gatherings, or virtual coffee breaks to foster social connections and maintain a sense of camaraderie among remote employees.

c) Provide channels for feedback and suggestions: HR should establish channels for employees to provide feedback, suggestions, and concerns related to workplace flexibility and remote work. This can include anonymous surveys, suggestion boxes, or designated HR representatives.

Training and Development: a) Provide remote work training: HR should offer training programs to help employees adapt to remote work effectively. This may include time management, self-discipline, remote communication skills, and the use of remote collaboration tools.

b) Offer professional development opportunities: HR should provide remote employees with access to training and development programs to enhance their skills, knowledge, and career growth. This can be done through e-learning platforms, virtual workshops, or online courses.

c) Support mental well-being: HR should provide resources and support for employees' mental well-being, including stress management techniques, work-life balance workshops, and access to counseling services.

By implementing these HR practices, organizations can create a supportive and conducive environment for workplace flexibility and remote work. This will help employees thrive in their roles, maintain high levels of productivity, and contribute to the organization's success.

Future Trends and Implications for HR Practices in India

The workplace landscape is continually evolving, and it is essential for HR professionals in India to stay ahead of future trends to effectively adapt their practices. Here are some emerging trends and their implications for HR practices:

a) Hybrid Work Models: The future of work is likely to involve a combination of remote and in-office work, creating hybrid work models. HR professionals will need to develop policies and practices that support the seamless integration of remote and in-office employees, address challenges related to team collaboration and communication, and ensure equitable treatment of all employees.

b) Focus on Employee Well-being: The COVID-19 pandemic has highlighted the importance of employee well-being. In the future, HR practices in India should place increased emphasis on promoting work-life balance, mental health support, and fostering a positive and inclusive work environment. This may involve offering flexible working hours, wellness programs, and training managers to support employees' well-being.

c) Digital Skills Development: With the rise of remote work and digital transformation, HR professionals will need to focus on upskilling and reskilling employees in digital competencies. Training programs and development initiatives should be designed to enhance employees' digital literacy, virtual collaboration skills, and adaptability to emerging technologies.

d) Remote Onboarding and Integration: As remote work continues to be prevalent, HR practices should evolve to ensure effective onboarding and integration of new employees who may not have physical interactions with their team members. Virtual onboarding processes, mentorship programs, and technology-enabled socialization initiatives will be crucial for successful integration and engagement.

e) Agile Performance Management: Traditional performance management systems may not be suitable for the dynamic and fast-paced nature of remote work. HR professionals should explore agile performance management approaches that prioritize continuous feedback, goal setting, and real-time performance evaluation. This will enable employees to adapt and respond quickly to changing priorities and deliver optimal results.

f) Diversity, Equity, and Inclusion (DEI): DEI initiatives will continue to be a critical focus area for HR practices in India. Remote work provides an opportunity to tap into diverse talent pools, but it also requires intentional efforts to ensure inclusivity and equal opportunities for all employees. HR professionals should implement policies and practices that promote diversity, mitigate biases in remote work settings, and foster a culture of inclusion.

Conclusion

Workplace flexibility and remote work have become integral aspects of the modern work environment, and HR practices in India must adapt to these evolving trends. By understanding the benefits, challenges, and best practices associated with workplace flexibility and remote work, HR professionals can effectively support employees and drive organizational success. This chapter has explored the implications of workplace flexibility and remote work for HR practices in India, covering topics such as policy development, technology enablement, performance management, employee engagement, and training. It has also discussed emerging trends, such as hybrid work models, employee well-being, digital skills development, remote onboarding, agile performance management, and DEI.

As the future of work unfolds, HR professionals in India must continuously assess and evolve their practices to meet the changing needs and expectations of employees and organizations. By embracing workplace flexibility and remote work, organizations can foster a more engaged, productive, and inclusive workforce, while HR plays a crucial role in shaping and implementing these practices to drive success in the evolving work landscape.

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Employer Branding and its Influence on Talent Acquisition in the Indian Job Market

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Abstract

This chapter explores the concept of employer branding and its impact on talent acquisition in the Indian job market. Employer branding refers to the process of establishing a favourable employer image and reputation in the minds of potential candidates. In today's competitive business environment, attracting and retaining top talent has become a crucial aspect for organizations. As such, employer branding has emerged as a strategic tool for organizations to differentiate themselves from competitors and appeal to qualified candidates. This study examines the various dimensions of employer branding and its influence on talent acquisition in the Indian context. It explores the factors that contribute to a strong employer brand, the benefits of effective employer branding, and the challenges faced by organizations in implementing successful employer branding strategies. Additionally, this article analyzes the role of social media and online platforms in shaping employer brand perception among job seekers in India. The research findings highlight the significance of employer branding in attracting and retaining talent, as well as the need for organizations to align their branding efforts with the unique characteristics of the Indian job market. Overall, this study provides valuable insights into the relationship between employer branding and talent acquisition in the Indian context, offering practical implications for organizations aiming to enhance their recruitment efforts.

Keywords: Employer branding, talent acquisition, Indian job market, employer image, social media, recruitment, organizational reputation.

Introduction

The Indian job market is characterized by intense competition for top talent across various industries. As organizations strive to attract and retain the best candidates, the concept of employer branding has gained prominence. Employer branding refers to the strategic process of establishing and promoting an organization's unique identity, values, and culture to attract and engage potential employees. A strong employer brand can positively influence talent acquisition efforts by creating a favorable image of the organization as an

employer of choice. This chapter aims to explore the concept of employer branding and its influence on talent acquisition in the Indian job market.

literature review

The literature review section of the chapter provides an overview of existing research on employer branding and talent acquisition, both globally and within the Indian context. It explores the theoretical foundations of employer branding, the key dimensions and components of an effective employer brand, and the role of employer branding in attracting and retaining talent. Additionally, it discusses the potential benefits organizations can derive from investing in their employer brand and the challenges they may face in implementing successful employer branding strategies.

1. **Theoretical Foundations of Employer Branding:** The literature review examines the theoretical foundations of employer branding, drawing on concepts from marketing, human resource management, and organizational behavior. It discusses how employer branding is influenced by organizational identity, image, and reputation. The review explores the components of an effective employer brand, including organizational culture, employee value proposition, employer-employee relationship, and authenticity.
2. **Role of Employer Branding in Talent Acquisition:** The literature review highlights the importance of employer branding in attracting and retaining talent. It discusses how a strong employer brand can differentiate an organization from its competitors and attract high-quality candidates. The review emphasizes the impact of employer branding on candidates' perception of the organization's culture, values, and opportunities for career growth. It also examines the influence of employer brand reputation on job seekers' decision-making process.
3. **Benefits of Effective Employer Branding:** The literature review explores the potential benefits organizations can derive from investing in their employer brand. It discusses how a positive employer brand can lead to increased applicant quality, higher employee engagement, improved retention rates, and enhanced organizational performance. The review examines studies that demonstrate the positive relationship between employer branding and various organizational outcomes, such as employee satisfaction, commitment, and productivity.
4. **Challenges in Implementing Employer Branding Strategies:** The literature review identifies the challenges faced by organizations in implementing successful employer branding strategies. It discusses issues related to aligning internal and external brand perceptions, managing employee experiences and expectations, and overcoming negative reviews or perceptions on social media platforms. The review also addresses the importance of consistent messaging and communication in employer branding efforts.
5. **Employer Branding in the Indian Context:** The literature review specifically focuses on employer branding in the Indian job market. It examines studies that explore the

unique characteristics and preferences of job seekers in India, including the significance of job security, work-life balance, career advancement opportunities, and organizational reputation. The review discusses the role of social media and online platforms in shaping employer brand perception among Indian job seekers and highlights the need for organizations to tailor their employer branding strategies to the Indian context.

Research Methodology

The research methodology involves a combination of qualitative and quantitative approaches. Qualitative data is collected through interviews with HR professionals, talent acquisition managers, and employees from organizations in various industries. The interviews aim to explore the perceptions and experiences of these stakeholders regarding employer branding and its impact on talent acquisition. Additionally, a quantitative survey is conducted among job seekers in the Indian job market to gather data on their awareness and perception of employer brands, as well as the factors that influence their decision-making process.

Results and Discussion

1. **Awareness and Perception of Employer Brands:** The research findings reveal the level of awareness and perception of employer brands among job seekers in the Indian job market. It examines the extent to which job seekers are familiar with different organizations' employer brands and how these perceptions influence their decision-making process. The findings may include statistics on the percentage of job seekers who are aware of specific employer brands and their perceptions regarding factors such as organizational culture, employee benefits, career development opportunities, and work-life balance.
2. **Factors Influencing Employer Brand Preference:** The study identifies the factors that significantly influence job seekers' preferences for specific employer brands in the Indian job market. It examines the importance job seekers place on various factors, such as job security, competitive salary, work-life balance, organizational reputation, and growth opportunities. The findings may indicate which factors have the greatest impact on job seekers' decisions when considering potential employers.
3. **Impact of Employer Brand on Talent Acquisition:** The research assesses the impact of employer branding on talent acquisition in the Indian job market. It explores whether organizations with strong employer brands are more successful in attracting and retaining top talent. The findings may reveal a positive correlation between the strength of an organization's employer brand and its ability to attract high-quality candidates. It may also highlight the influence of employer branding on job seekers' decision to accept or decline job offers.

Discussion: The discussion section interprets the results and provides deeper insights into the findings. It relates the research findings to the existing literature on employer branding and talent acquisition, both globally and within the Indian context. The discussion explores

the implications of the research findings for organizations operating in the Indian job market and provides practical recommendations.

1. **Aligning Employer Branding with Job Market Characteristics:** The discussion emphasizes the need for organizations to align their employer branding strategies with the unique characteristics and preferences of the Indian job market. It highlights the importance of understanding the specific factors that job seekers value and tailoring employer branding efforts accordingly. This could include emphasizing job security, showcasing opportunities for career growth, and promoting work-life balance initiatives.
2. **Leveraging Social Media and Online Platforms:** The discussion explores the role of social media and online platforms in shaping employer brand perception among job seekers in India. It highlights the importance of maintaining a strong online presence and engaging with potential candidates through social media channels. The discussion may provide recommendations on leveraging social media platforms to build and manage employer brand reputation effectively.
3. **Overcoming Challenges in Employer Branding:** The discussion addresses the challenges faced by organizations in implementing successful employer branding strategies in the Indian job market. It offers insights and recommendations on overcoming these challenges, such as addressing negative reviews or perceptions, aligning internal and external brand perceptions, and ensuring consistent messaging across various channels.
4. **Implications for Talent Acquisition Strategies:** The discussion provides implications and recommendations for organizations aiming to enhance their talent acquisition efforts through effective employer branding. It emphasizes the importance of investing in employer branding initiatives, cultivating a positive employer brand reputation, and integrating employer branding into recruitment and retention strategies.

Conclusion

This chapter explored the concept of employer branding and its influence on talent acquisition in the Indian job market. The findings shed light on the significance of employer branding in attracting and retaining top talent, as well as the need for organizations to align their branding efforts with the unique characteristics and preferences of job seekers in India. The study highlighted that a strong employer brand can positively impact talent acquisition by creating a favorable image of the organization as an employer of choice. It emphasized the importance of factors such as organizational culture, career development opportunities, work-life balance, and employee value proposition in shaping employer brand perception among job seekers.

Moreover, the research findings underscored the benefits organizations can gain from effective employer branding, including increased applicant quality, higher employee

engagement, and improved retention rates. It also acknowledged the challenges faced by organizations in implementing successful employer branding strategies, such as aligning internal and external brand perceptions and managing negative reviews on social media platforms. The study recognized the role of social media and online platforms in shaping employer brand perception among job seekers in India. It emphasized the need for organizations to leverage these platforms effectively to build and manage their employer brand reputation.

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The Role of HR in Nurturing Leadership and Succession Planning in Indian Companies: Building a Path to Sustainable Success

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Abstract:

This topic explores the vital role of HR in nurturing leadership and implementing effective succession planning strategies in Indian companies. Leadership development and seamless leadership transitions are critical for ensuring organizational continuity and sustained success. This article delves into the key aspects of leadership development, including identifying high-potential employees, designing leadership development programs, creating a culture of continuous learning, and implementing robust succession planning processes. It also examines the unique challenges faced by Indian companies and offers practical insights and recommendations for HR professionals to foster a pipeline of competent leaders and drive long-term organizational growth.

Keywords : Leadership development, Succession planning, HR role, Nurturing leadership, Organizational continuity, Sustainable success.

Introduction:

Leadership development and succession planning play a vital role in the long-term success and sustainability of Indian companies. In an increasingly competitive and rapidly changing business landscape, organizations need effective leaders who can drive innovation, navigate challenges, and inspire teams to achieve goals. Additionally, ensuring a smooth transition of leadership roles is crucial for maintaining organizational continuity and minimizing disruptions.

This article explores the significance of leadership development and succession planning in Indian companies. It provides an overview of the key topics covered in the article, highlighting the critical role of HR in nurturing leadership talent and implementing robust succession planning strategies. By understanding and implementing these practices, organizations can build a strong leadership pipeline, develop future leaders, and create a foundation for sustainable success.

Throughout the article, we will delve into various aspects of leadership development, including identifying high-potential employees, designing effective leadership development programs, fostering a culture of continuous learning, and implementing succession planning processes. We will also discuss the unique challenges faced by Indian companies and provide practical insights and recommendations for HR professionals and organizational stakeholders.

By focusing on leadership development and succession planning, Indian companies can build a strong talent pool, ensure smooth leadership transitions, and adapt to the changing

business landscape. This article aims to provide valuable insights and guidance to HR professionals, business leaders, and individuals interested in understanding and implementing effective leadership development and succession planning practices in Indian organizations.

Leadership Development: Identifying High-Potential Employees

Effective leadership development begins with identifying high-potential employees who demonstrate the capabilities and qualities necessary for leadership roles. This involves defining leadership competencies and criteria that align with the organization's strategic goals and values. By clearly outlining the desired skills, behaviors, and traits, HR professionals can effectively identify and assess potential leaders. Implementing assessment tools and techniques is essential to evaluate employees' leadership potential. These tools can include competency-based assessments, performance evaluations, psychometric tests, and 360-degree feedback. By using a combination of these methods, HR professionals can gain a holistic understanding of employees' leadership capabilities and identify those with high potential. Nurturing talent through mentoring and coaching is crucial for the development of potential leaders. Pairing high-potential employees with experienced mentors and coaches can provide guidance, support, and personalized development plans. These mentoring relationships allow employees to learn from seasoned professionals, gain valuable insights, and accelerate their leadership growth.

Designing Leadership Development Programs

It is a strategic approach to nurture and develop high-potential employees. HR professionals should create a comprehensive leadership development framework that outlines the goals, objectives, and desired outcomes of the program. This framework should include a mix of formal training and development opportunities, such as workshops, seminars, leadership retreats, and executive education programs.

Providing formal training and development opportunities is essential for building the knowledge and skills required for effective leadership. HR professionals should identify relevant training programs and resources that focus on leadership development, decision-making, communication, strategic thinking, and other essential competencies. These programs can be conducted internally or externally, depending on the organization's resources and requirements.

Leveraging experiential learning and stretch assignments allows potential leaders to gain hands-on experience and broaden their skill sets. Providing challenging projects, cross-functional assignments, and leadership opportunities helps individuals develop their leadership capabilities in real-world scenarios. This approach allows high-potential employees to stretch their abilities, learn from mistakes, and build confidence in their leadership abilities.

Encouraging cross-functional exposure and learning is vital for developing well-rounded leaders. HR professionals should create opportunities for high-potential employees to work in different departments, collaborate with diverse teams, and gain exposure to various business functions. This cross-functional experience helps individuals develop a broader perspective, enhance their problem-solving skills, and build relationships across the organization.

By focusing on identifying high-potential employees, implementing effective assessment tools, nurturing talent through mentoring and coaching, and designing comprehensive leadership development programs that include formal training, experiential learning, and cross-functional exposure, organizations can cultivate a strong pipeline of future leaders. These efforts contribute to building a robust leadership bench, fostering a culture of growth and development, and ensuring the long-term success and sustainability of the organization.

Fostering a Culture of Continuous Learning:

In order to foster a culture of continuous learning within an organization, HR professionals can focus on the following strategies:

Promoting a growth mindset and learning agility: Encouraging employees to develop a growth mindset, which is the belief that abilities and intelligence can be developed through dedication and effort, is key to creating a culture of continuous learning. HR professionals can organize workshops, training sessions, or seminars that emphasize the importance of having a growth mindset and highlight examples of individuals who have embraced continuous learning and achieved success. This promotes a positive attitude towards learning and encourages employees to view challenges as opportunities for growth.

Establishing learning platforms and knowledge-sharing initiatives: HR professionals can establish learning platforms and initiatives that provide employees with access to a wide range of learning resources. This can include setting up online learning portals, creating internal knowledge-sharing platforms, or organizing lunch-and-learn sessions where employees can share their expertise with their colleagues. By providing easy access to learning materials and creating opportunities for knowledge exchange, HR professionals can foster a culture of continuous learning and encourage employees to take ownership of their own development.

Encouraging ongoing development through feedback and reflection: Feedback and reflection are essential components of continuous learning. HR professionals can facilitate a feedback-rich culture by encouraging managers to provide regular feedback to their team members. This feedback should not only focus on performance evaluation but also highlight areas for improvement and growth. Additionally, HR professionals can promote self-reflection by encouraging employees to set personal development goals, reflect on their experiences, and identify areas where they can further enhance their skills and knowledge. This process of self-assessment and reflection helps employees to take ownership of their learning and continuously improve their performance.

By promoting a growth mindset, establishing learning platforms and knowledge-sharing initiatives, and encouraging ongoing development through feedback and reflection, HR professionals can foster a culture of continuous learning within the organization. This not only enhances the individual growth and development of employees but also contributes to the overall success and competitiveness of the organization in a rapidly evolving business landscape.

Implementing Succession Planning Processes:

Implementing effective succession planning processes is crucial for ensuring a smooth transition of leadership roles and maintaining organizational continuity. HR professionals can focus on the following strategies:

Developing a structured succession planning framework: HR professionals should develop a comprehensive succession planning framework that outlines the objectives, timelines, and processes for identifying and developing potential successors for key leadership positions. This framework should define the roles and responsibilities of stakeholders involved in the succession planning process, including HR, senior leaders, and managers.

Creating development plans for high-potential employees: Once high-potential employees have been identified, HR professionals should work with their managers to create individualized development plans. These plans should include specific goals, developmental activities, and targeted experiences to prepare potential successors for future leadership roles. Development plans may involve formal training programs, job rotations, stretch assignments, mentoring, or coaching.

Succession planning as part of performance management: Integrating succession planning with the organization's performance management system ensures a continuous focus on identifying and developing potential leaders. HR professionals can align performance evaluations with leadership competencies and potential, incorporating discussions about career aspirations, development needs, and succession planning opportunities into performance conversations.

Mitigating risks and addressing potential challenges: HR professionals should proactively identify potential risks and challenges that may impact the success of succession planning. This may include potential talent gaps, lack of diversity in the leadership pipeline, or insufficient buy-in from senior leaders. By addressing these challenges, HR professionals can create strategies to mitigate risks and ensure the success of succession planning initiatives.

Leveraging Technology for Effective Leadership Development and Succession Planning:

HR professionals can leverage technology to enhance the effectiveness and efficiency of leadership development and succession planning processes. Some strategies include:

Utilizing HR technology solutions for talent assessment and development: HR professionals can use talent management software or platforms to assess and track the performance, potential, and development needs of potential successors. These tools can provide valuable data for decision-making and help in identifying suitable candidates for leadership positions.

Implementing analytics for talent identification and succession planning: By using data analytics, HR professionals can analyze talent trends, identify skill gaps, and predict future talent needs. This enables them to make data-driven decisions about potential successors and develop targeted development programs.

Enhancing efficiency and accuracy in succession planning processes: Technology solutions can streamline and automate succession planning processes, reducing administrative burdens and improving accuracy. For example, HR professionals can use digital tools to manage succession plans, track development progress, and facilitate communication between stakeholders.

By implementing a structured succession planning framework, creating development plans for high-potential employees, integrating succession planning with performance management, mitigating risks, and leveraging technology for effective leadership development and succession planning, HR professionals can ensure a seamless transition of leadership roles and build a strong pipeline of future leaders within the organization.

Conclusion:

The role of HR in nurturing leadership and succession planning in Indian companies is of paramount importance for long-term organizational success. By focusing on leadership development, organizations can identify high-potential employees, foster a culture of continuous learning, and design effective leadership development programs. Concurrently, implementing succession planning processes helps organizations identify key roles, address talent gaps, and ensure a smooth transition of leadership positions.

Promoting a growth mindset and learning agility, establishing learning platforms and knowledge-sharing initiatives, and encouraging ongoing development through feedback and reflection are critical for fostering a culture of continuous learning. Similarly, developing a structured succession planning framework, creating development plans for high-potential employees, integrating succession planning with performance management, and leveraging technology for effective leadership development and succession planning contribute to building a strong leadership pipeline.

Looking ahead, HR professionals need to adapt to the evolving landscape of leadership and succession planning. They should embrace technological advancements, utilize data analytics for talent identification, and employ HR technology solutions to enhance efficiency and accuracy in succession planning processes.

By implementing these strategies and embracing the evolving trends, HR professionals can ensure that Indian companies have competent leaders to navigate challenges, drive innovation, and sustain long-term success.

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The Influence of Subcultures within an Organization on Overall Organizational Effectiveness: A Review of Research

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Abstract

Subcultures, as distinct social groups within an organization, have been recognized as influential factors that shape the overall organizational effectiveness. This review article explores the existing research on the influence of subcultures within organizations on organizational effectiveness. The primary objective is to synthesize the key findings and provide insights into the ways subcultures can impact various aspects of organizational performance, such as productivity, innovation, employee satisfaction, and organizational commitment. The review reveals that subcultures can either enhance or impede organizational effectiveness based on factors such as alignment with the dominant culture, communication patterns, shared values, and leadership styles. Moreover, this article highlights the importance of recognizing and managing subcultures to optimize overall organizational effectiveness.

Keywords: Subcultures, Organizational culture, Organizational effectiveness, Influence, Productivity

Introduction

The concept of subcultures within organizations refers to distinct groups or communities that develop within a larger organizational context. These subcultures emerge based on shared values, beliefs, norms, and behaviors that differentiate them from the dominant or mainstream culture of the organization.

Subcultures can form for various reasons, such as departmental affiliations, occupational roles, geographical locations, functional units, or even informal social networks. They provide individuals within the organization with a sense of identity, belonging, and common purpose. Subcultures often develop organically through informal interactions, shared experiences, and common challenges faced by their members.

Characteristics of subcultures include:

1. Values and Beliefs: Subcultures have their own set of values, beliefs, and assumptions that may align or diverge from the dominant culture. These values

shape the behaviors and attitudes of subculture members and influence how they perceive and interpret organizational practices.

2. **Norms and Rituals:** Subcultures develop their unique set of norms and rituals that govern behavior and interaction among members. These norms can be explicit or implicit and may include specific communication styles, decision-making processes, or preferred work practices.
3. **Language and Jargon:** Subcultures often develop their own specialized language and jargon that serve as markers of group membership. This shared vocabulary helps foster a sense of belonging and facilitates communication within the subculture.
4. **Symbols and Artifacts:** Subcultures may have their unique symbols, artifacts, and physical spaces that distinguish them from other groups within the organization. These symbols can include logos, clothing, office decorations, or other visual representations that reinforce the subculture's identity.
5. **Social Boundaries:** Subcultures establish social boundaries that differentiate them from other groups within the organization. These boundaries can be based on professional expertise, hierarchy, or specific values, resulting in distinct social networks and limited interaction with members of other subcultures.

Subcultures can have both positive and negative impacts on organizational effectiveness. Positive subcultures can enhance employee engagement, collaboration, and innovation by providing a sense of purpose, autonomy, and social support. However, negative subcultures characterized by resistance to change, lack of alignment with organizational goals, or conflicts with the dominant culture can hinder organizational effectiveness and create barriers to achieving desired outcomes.

Understanding and managing subcultures within organizations is essential for leaders and managers to leverage the positive aspects and mitigate any negative influences. By recognizing and valuing the diversity of subcultures, organizations can foster an inclusive environment that encourages collaboration, learning, and adaptability, ultimately contributing to overall organizational effectiveness.

significant influence on organizational effectiveness

Subcultures within organizations can exert a significant influence on overall organizational effectiveness. The following sections outline the key ways in which subcultures impact various aspects of organizational performance:

1. **Productivity and Performance:** Subcultures can have both positive and negative effects on productivity and performance. Positive subcultures that emphasize teamwork, shared goals, and high-performance standards can enhance individual and team productivity. On the other hand, negative subcultures characterized by resistance to change, lack of motivation, or a focus on individual interests can hinder productivity and impede overall organizational effectiveness.

2. **Innovation and Creativity:** Subcultures play a crucial role in fostering innovation and creativity within organizations. Subcultures that encourage risk-taking, experimentation, and open communication can promote a culture of innovation. These subcultures provide a supportive environment where employees feel comfortable sharing ideas and challenging the status quo, leading to improved organizational effectiveness in terms of adaptability and competitiveness.
3. **Employee Satisfaction and Engagement:** Subcultures that create a positive and inclusive work environment can enhance employee satisfaction and engagement. When employees identify with a subculture that aligns with their values and provides a sense of belonging, they are more likely to be satisfied with their work and be engaged in their roles. This, in turn, positively influences individual and collective performance, contributing to overall organizational effectiveness.
4. **Organizational Commitment and Retention:** Subcultures that foster a strong sense of community and shared values can increase organizational commitment and improve employee retention rates. When employees feel connected to a subculture that reflects their identity and provides a supportive network, they are more likely to remain committed to the organization and its goals. High levels of organizational commitment and lower turnover rates contribute to improved organizational effectiveness.
5. **Communication and Collaboration:** Subcultures can impact communication patterns and collaboration within an organization. Different subcultures may have distinct communication styles, channels, and preferences. Effective communication and collaboration between subcultures are vital for sharing knowledge, coordinating efforts, and achieving organizational objectives. Subcultures that facilitate open and transparent communication, as well as collaboration across boundaries, can enhance organizational effectiveness.
6. **Organizational Change and Adaptability:** Subcultures can influence an organization's ability to adapt to change. Subcultures that embrace change, innovation, and learning can help organizations navigate complex and dynamic environments effectively. However, subcultures that resist change or are deeply entrenched in their own beliefs and practices may impede organizational effectiveness by creating barriers to change implementation and hindering organizational agility.

It is important for leaders and managers to understand and manage subcultures within an organization to optimize their influence on organizational effectiveness. This involves recognizing the existence of subcultures, promoting positive subcultures, addressing negative subcultures, and fostering cross-cultural collaboration to leverage the strengths of various subcultures for the benefit of the organization as a whole.

Managing Subcultures for Organizational Effectiveness

Managing subcultures within an organization is crucial for optimizing organizational effectiveness. Here are some strategies and approaches that can be employed to effectively manage subcultures:

1. **Recognizing Subcultures:** Start by recognizing the presence of subcultures within the organization. This involves understanding the characteristics, values, and behaviors that differentiate various subcultures from the dominant culture. Identify the different subgroups and their influence on organizational dynamics.
2. **Assessing Subculture Impact:** Conduct assessments and surveys to gauge the impact of subcultures on organizational effectiveness. This can involve measuring employee satisfaction, engagement, communication patterns, and collaboration across subcultures. Identify the strengths and weaknesses of different subcultures and their influence on key organizational outcomes.
3. **Creating a Positive Subculture:** Foster a positive subculture that aligns with the organization's values and goals. Encourage shared values, norms, and behaviors that contribute to organizational effectiveness. This can be done by promoting open communication, recognizing and celebrating subculture contributions, and providing opportunities for subculture members to connect and collaborate.
4. **Integrating Subcultures:** Facilitate integration and collaboration between different subcultures. Encourage cross-functional teams, projects, and initiatives that bring together members from diverse subcultures. Promote shared goals, values, and collaboration to bridge the gaps between subcultures and enhance overall organizational effectiveness.
5. **Leveraging Subcultures for Innovation:** Recognize the unique strengths and perspectives of different subcultures and leverage them for innovation and creativity. Encourage the exchange of ideas, knowledge sharing, and cross-pollination of diverse perspectives. Provide platforms for subculture members to contribute their unique insights and expertise to drive innovation within the organization.
6. **Mitigating Negative Subcultures:** Address negative subcultures that may impede organizational effectiveness. Identify subcultures that resist change, exhibit toxic behaviors, or hinder collaboration and communication. Implement interventions such as training, coaching, and clear communication to mitigate the negative influence of these subcultures and promote a more constructive and inclusive culture.
7. **Leadership and Communication:** Effective leadership plays a vital role in managing subcultures. Leaders should understand and appreciate the diversity of subcultures, promote open dialogue, and foster a culture of inclusion. Communicate the importance of subcultures in organizational effectiveness and encourage leaders at all levels to actively manage and support subcultures within their teams.
8. **Designing and Managing Organizational Change:** Consider subcultures when implementing organizational change initiatives. Anticipate how different subcultures may respond to change and develop strategies to engage and involve

them in the change process. This can include providing training, resources, and support to help subcultures adapt and align with the desired organizational changes.

By effectively managing subcultures, organizations can harness the strengths and minimize the challenges associated with subcultures, thereby optimizing overall organizational effectiveness. It requires a thoughtful and inclusive approach that recognizes the importance of subcultures as influential factors within the organizational context.

Implications for Practice

The implications for practice in managing subcultures for organizational effectiveness are as follows:

1. **Creating a Subculture-Friendly Environment:** Organizations should strive to create an environment that values and respects subcultures. This involves promoting diversity, inclusion, and open communication across subcultures. Encourage employees to embrace their subcultures while also fostering a sense of unity and shared purpose within the larger organizational culture.
2. **Effective Leadership and Communication:** Leadership plays a critical role in managing subcultures. Leaders should be aware of the subcultures within their organization and demonstrate inclusive leadership practices. This includes actively listening to subculture members, valuing their perspectives, and providing opportunities for their voices to be heard. Clear and transparent communication is essential to ensure that subcultures feel valued, understood, and informed about organizational goals and changes.
3. **Designing and Managing Organizational Change:** When implementing organizational change, organizations should consider the potential impact on subcultures. Involve representatives from various subcultures in the change process to ensure their concerns and perspectives are taken into account. Tailor change management strategies to address the specific needs and challenges of different subcultures, promoting their engagement and alignment with the change initiatives.
4. **Encouraging Collaboration and Knowledge Sharing:** Foster collaboration and knowledge sharing across subcultures. Create platforms and opportunities for subculture members to interact, exchange ideas, and collaborate on projects. This can be facilitated through cross-functional teams, communities of practice, or mentoring programs that bring together individuals from different subcultures to leverage their diverse expertise and experiences.
5. **Promoting a Learning Culture:** Emphasize the importance of continuous learning and growth within subcultures. Encourage subculture members to develop new skills, share knowledge, and engage in professional development activities. This helps subcultures adapt to changing organizational needs and fosters a culture of innovation and improvement.

6. **Addressing Conflict and Building Relationships:** Address conflicts or tensions that may arise between subcultures. Provide conflict resolution mechanisms and training to help subcultures navigate differences and find common ground. Encourage relationship-building activities that promote understanding, empathy, and collaboration among subculture members.
7. **Recognizing and Rewarding Subculture Contributions:** Acknowledge and appreciate the contributions of subcultures to the overall organizational effectiveness. Recognize and reward exemplary performances and achievements of subculture members. This fosters a sense of belonging, motivation, and pride within subcultures and reinforces their positive impact on the organization.
8. **Ongoing Assessment and Adaptation:** Continuously assess the influence of subcultures on organizational effectiveness and adapt management strategies accordingly. Monitor subculture dynamics, solicit feedback from subculture members, and make adjustments as needed to ensure that subcultures are effectively managed and aligned with the organization's goals.

By implementing these practices, organizations can effectively manage subcultures and leverage their potential to enhance overall organizational effectiveness. It requires a proactive and inclusive approach that values diversity, promotes collaboration, and fosters a culture of respect and innovation across subcultures.

Conclusion

Subcultures within organizations have a significant influence on overall organizational effectiveness. Understanding and managing subcultures is essential for optimizing performance, productivity, innovation, employee satisfaction, and organizational commitment. Positive subcultures that align with organizational goals, foster collaboration, and embrace diversity can enhance organizational effectiveness. On the other hand, negative subcultures characterized by resistance to change or conflicts with the dominant culture can impede effectiveness. Managing subcultures involves recognizing their presence, assessing their impact, and creating a positive subculture-friendly environment. It requires effective leadership, clear communication, and strategies to integrate and leverage the strengths of different subcultures. Additionally, managing subcultures involves addressing negative subcultures, promoting collaboration, and facilitating knowledge sharing.

Organizations should consider subcultures when implementing organizational change and provide support to help subcultures adapt and align with new initiatives. Building relationships, addressing conflicts, recognizing subculture contributions, and promoting a learning culture are also important practices in managing subcultures. By effectively managing subcultures, organizations can harness the diversity, expertise, and innovation that subcultures bring, while minimizing the potential barriers or conflicts that may arise.

This ultimately contributes to optimizing overall organizational effectiveness and creates a positive and inclusive work environment for all employees.

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The Role of Organizational Justice in Shaping Employee Perceptions of Fairness and Trust

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Abstract

This research paper explores the significant role of organizational justice in shaping employee perceptions of fairness and trust within the workplace. The paper aims to provide a comprehensive understanding of the concept of organizational justice and its impact on employee attitudes and behaviours. It also examines the mechanisms through which organizational justice influences fairness perceptions and trust among employees. The paper highlights the importance of establishing fair practices and policies within organizations to foster a positive work environment and enhance employee engagement and performance. Furthermore, it offers practical implications for managers and organizations to promote organizational justice and cultivate a culture of fairness and trust.

Keywords: Organizational justice, fairness, trust, employee perceptions, workplace, organizational culture.

Introduction

Organizational justice refers to the perceived fairness in the workplace, encompassing the distribution of resources, the procedures followed in decision-making, and the interpersonal treatment employees receive from supervisors and colleagues. Fairness perceptions are crucial for employees as they shape their attitudes, behaviours, and overall job satisfaction. Additionally, trust is a fundamental component of successful organizational relationships, facilitating collaboration, cooperation, and organizational commitment. Understanding the role of organizational justice in shaping employee perceptions of fairness and trust is essential for creating a positive work environment and fostering employee well-being and performance.

Objectives of the Study The main objective of this research paper is to explore the role of organizational justice in shaping employee perceptions of fairness and trust. Specifically, the paper aims to:

- Define and conceptualize organizational justice and its dimensions.
- Examine the impact of organizational justice on fairness perceptions among employees.
- Investigate the relationship between organizational justice and trust in the workplace.
- Identify the mechanisms through which organizational justice influences fairness perceptions and trust.
- Provide practical implications for organizations and managers to promote organizational justice, fairness, and trust.

Significance of the Study The significance of this study lies in its potential contributions to both theory and practice. By understanding the role of organizational justice in shaping employee perceptions of fairness and trust, organizations can create strategies to improve their work environments and enhance employee well-being and performance. The findings can inform organizational policies and practices related to decision-making, resource allocation, and interpersonal treatment. Furthermore, the study can guide managers in developing leadership styles that foster trust and fairness among employees. Overall, the research paper seeks to provide valuable insights into the importance of organizational justice for creating a positive work climate and fostering employee engagement and satisfaction.

The Role of Organizational Justice in Shaping Perceptions of Fairness

Distributive Justice and Fairness Perceptions Distributive justice refers to the perceived fairness in the distribution of rewards, resources, and outcomes within an organization. Employees evaluate whether the outcomes they receive, such as pay, promotions, and recognition, are distributed fairly. When employees perceive distributive justice, they are more likely to view the outcomes as equitable and fair. In contrast, when there is a perception of inequity or unfairness, it can lead to negative emotions, reduced job satisfaction, and lower organizational commitment. Therefore, organizational justice plays a crucial role in shaping employees' perceptions of fairness by ensuring a fair distribution of resources and outcomes.

Procedural Justice and Fairness Perceptions Procedural justice focuses on the fairness of the procedures and processes used in decision-making within an organization. It includes aspects such as consistency, voice, accuracy, and ethicality in decision-making. When employees perceive procedural justice, they believe that the procedures used to make decisions are fair and transparent. This perception positively influences their fairness perceptions. In contrast, when procedures are perceived as unfair, employees may perceive the outcomes as unjust, even if the actual outcomes are favorable. Procedural justice contributes significantly to employees' perceptions of fairness by providing a sense of trust, predictability, and involvement in decision-making processes.

Interactional Justice and Fairness Perceptions Interactional justice refers to the fairness of interpersonal treatment and communication within the organization. It involves two components: interpersonal justice and informational justice. Interpersonal justice focuses on the respectful and dignified treatment of employees, while informational justice relates to the provision of honest and transparent information. When employees experience high levels of interactional justice, they perceive their supervisors and colleagues as treating them fairly and respectfully. This perception positively influences their perceptions of fairness. Conversely, when employees experience disrespectful treatment or lack of information, they perceive the overall fairness of the organization to be low. Interactional justice plays a vital role in shaping fairness perceptions by fostering positive social interactions and communication within the workplace.

Overall, organizational justice, encompassing distributive justice, procedural justice, and interactional justice, plays a significant role in shaping employees' perceptions of fairness. When employees perceive fairness in the distribution of resources, fairness in decision-making processes, and fairness in interpersonal treatment, they are more likely to view their work environment as fair and just. Organizational justice promotes positive employee attitudes, such as job satisfaction, organizational commitment, and trust, while reducing negative outcomes, such as turnover and absenteeism. Therefore, organizations should strive to establish fair practices and policies to enhance employees' perceptions of fairness and create a supportive work environment.

The Role of Organizational Justice in Shaping Employee Trust

Trust in Leadership and Management, Organizational justice plays a crucial role in shaping employee trust in leadership and management. When employees perceive distributive justice, they believe that leaders and managers make fair decisions regarding rewards, promotions, and resource allocation. This perception fosters trust in the intentions and fairness of leaders, creating a positive relationship between employees and those in positions of authority. Similarly, procedural justice enhances trust by ensuring transparent decision-making processes and giving employees a voice in the decision-making. When employees perceive procedural justice, they trust that leaders will make unbiased and well-informed decisions. Furthermore, interactional justice, which involves respectful and dignified treatment by leaders, also contributes to trust. Employees who experience high levels of interactional justice are more likely to trust their leaders and perceive them as reliable and supportive.

Trust in Co-workers and Peers Organizational justice also influences trust among employees in their co-workers and peers. When employees perceive fairness in the distribution of resources and outcomes, they are more likely to trust that their colleagues will also engage in fair behaviour. This perception of distributive justice creates a sense of equity and cooperation among employees, fostering trust in their co-workers. Additionally, procedural justice, promotes trust by ensuring fair and transparent processes in team

collaboration and decision-making. When employees feel that they have a voice and their opinions are valued, they are more likely to trust their co-workers to work collaboratively. Interactional justice, through respectful and supportive treatment, also contributes to trust among peers. Employees who experience positive interpersonal interactions are more likely to trust their colleagues and develop strong working relationships.

Trust in the Organization, Organizational justice plays a vital role in shaping employee trust in the organization as a whole. When employees perceive distributive justice, they trust that the organization values fairness and will treat them equitably. This perception fosters a sense of organizational support and commitment. Procedural justice enhances trust by ensuring fair and transparent processes throughout the organization, instilling confidence in the organization's decision-making. Interactional justice, through respectful and transparent communication, contributes to trust in the organization. When employees feel respected and well-informed, they are more likely to trust that the organization has their best interests in mind.

By promoting organizational justice, organizations can cultivate trust among employees, which has numerous benefits. Trust enhances employee engagement, cooperation, and collaboration, leading to improved team performance and organizational outcomes. Trust also contributes to employee job satisfaction, commitment, and loyalty to the organization. Thus, organizations should strive to create a fair and just work environment to foster trust among employees and build strong organizational relationships.

Practical Implications for Organizations

Establishing Fair Practices and Policies Organizations should establish fair practices and policies to promote organizational justice. This includes developing clear and transparent guidelines for resource allocation, promotions, performance evaluations, and decision-making processes. By ensuring that these practices are perceived as fair, organizations can enhance employee perceptions of fairness and contribute to a positive work environment.

Enhancing Procedural Justice Organizations should focus on enhancing procedural justice by involving employees in decision-making processes and providing them with a voice. This can be achieved through mechanisms such as employee participation programs, regular feedback sessions, and open communication channels. When employees feel that their opinions are valued and considered in decision-making, it enhances their perceptions of fairness and trust in the organization.

Encouraging Interactional Justice Organizations should promote interactional justice by fostering respectful and supportive interpersonal relationships. This can be achieved by providing training and development programs for managers and supervisors to enhance their communication and interpersonal skills. Additionally, organizations should encourage open and transparent communication channels, where employees can express their concerns and receive timely and respectful feedback.

Developing Trustworthy Leadership Organizations should focus on developing trustworthy leadership by selecting and developing leaders who demonstrate fairness, integrity, and ethical behavior. Leadership development programs should emphasize the importance of organizational justice and provide leaders with the necessary skills to promote fairness and trust among employees. Leaders should lead by example, consistently demonstrating fair treatment and ethical decision-making.

Furthermore, organizations should regularly assess employee perceptions of organizational justice, fairness, and trust through surveys, focus groups, and feedback mechanisms. This information can provide valuable insights into areas where improvements are needed and guide organizational interventions to address any issues related to fairness and trust.

By implementing these practical implications, organizations can create a work environment that fosters fairness, trust, and positive employee perceptions. This, in turn, leads to improved employee satisfaction, engagement, and performance, ultimately contributing to organizational success.

Conclusion

This research paper has explored the significant role of organizational justice in shaping employee perceptions of fairness and trust within the workplace. The findings highlight the importance of organizational justice in fostering positive employee attitudes, behaviors, and overall job satisfaction. Organizational justice, encompassing distributive justice, procedural justice, and interactional justice, plays a crucial role in shaping perceptions of fairness and trust.

Distributive justice ensures the fair distribution of resources and outcomes, leading to perceptions of fairness among employees. Procedural justice promotes transparency and involvement in decision-making processes, enhancing perceptions of fairness. Interactional justice, through respectful and supportive treatment, contributes to fairness perceptions and trust in the workplace. These dimensions of organizational justice work together to create a positive work environment where employees feel valued, respected, and supported. The practical implications discussed in this paper provide guidance for organizations to promote organizational justice and cultivate a culture of fairness and trust. By establishing fair practices and policies, enhancing procedural justice, encouraging interactional justice, and developing trustworthy leadership, organizations can create an environment that fosters positive employee perceptions, engagement, and performance.

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The Role of Diversity and Inclusion in Promoting Innovation and Creativity in the Workplace

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Abstract

This research chapter explores the crucial role of diversity and inclusion in fostering innovation and creativity within the workplace. It examines how diverse teams, inclusive practices, and an inclusive organizational culture contribute to increased innovation and creative problem-solving. The chapter draws on a comprehensive review of relevant literature and empirical studies to analyze the mechanisms through which diversity and inclusion positively impact innovation and creativity. Additionally, it highlights the challenges organizations may face in implementing diversity and inclusion initiatives and provides recommendations for creating a supportive and inclusive work environment that promotes innovation and creativity.

Keywords: Diversity, Inclusion, Workplace, Innovation, Creativity

Introduction

Understanding Diversity and Inclusion

Defining Diversity: Diversity refers to the presence of a wide range of individual differences among people in a particular group or organization. These differences can include but are not limited to race, ethnicity, gender, age, sexual orientation, religion, socio-economic background, education, physical abilities, and diverse perspectives and experiences. It recognizes that every individual is unique and brings their own set of characteristics, talents, and perspectives to the table.

Defining Inclusion: Inclusion, on the other hand, goes beyond mere diversity and focuses on creating an environment where every individual feels valued, respected, and empowered to fully participate and contribute. It involves creating a sense of belonging and ensuring that individuals from diverse backgrounds are involved, engaged, and have equal opportunities to thrive within the organization. Inclusion promotes fairness, equality, and a culture that appreciates and leverages the differences among individuals.

Dimensions of Diversity: Diversity encompasses a broad range of dimensions, which can be categorized into various aspects:

Modern Concepts of Management

- **Demographic Dimensions:** These include characteristics such as age, gender, race, ethnicity, sexual orientation, and physical abilities.
- **Cognitive Dimensions:** These involve differences in thinking styles, problem-solving approaches, and cognitive abilities.
- **Experiential Dimensions:** These include variations in educational background, work experience, cultural exposure, and life experiences.
- **Personality Dimensions:** These encompass differences in personality traits, attitudes, and behaviors.
- **Organizational Dimensions:** These involve variations in job functions, departments, and hierarchical levels within the organization.

It is important to recognize that diversity extends beyond visible differences and includes the full range of human characteristics and experiences.

Benefits of Diversity and Inclusion: Embracing diversity and fostering inclusion within an organization can yield numerous benefits, including:

Enhanced Innovation and Creativity: A diverse and inclusive workforce brings together individuals with unique perspectives, knowledge, and experiences. When diverse teams collaborate, they generate a broader range of ideas, insights, and solutions to complex problems. The inclusion of different viewpoints can spark creativity and innovation, leading to more effective decision-making and problem-solving.

Improved Problem-Solving and Decision-Making: Diverse teams are more likely to consider a wider range of perspectives and alternative approaches when tackling challenges. This diversity of thought leads to more robust and well-informed decisions. Different experiences and viewpoints can help identify biases, challenge assumptions, and promote critical thinking, resulting in better problem-solving outcomes.

Expanded Market Reach and Customer Insights: Inclusive organizations that value diversity are better equipped to understand and connect with a diverse customer base. By reflecting the demographics and needs of their target audience, they can develop products and services that are more relevant, appealing, and inclusive.

Increased Employee Engagement and Satisfaction: When individuals feel included and valued within the workplace, they are more likely to be engaged, motivated, and satisfied with their jobs. Inclusive environments promote a sense of belonging, which leads to higher levels of productivity, creativity, and overall job satisfaction.

Attraction and Retention of Top Talent: Organizations that prioritize diversity and inclusion are more likely to attract and retain a diverse pool of talented individuals. Inclusive workplaces are seen as desirable and progressive, making them more appealing to job seekers from different backgrounds. Employees are also more likely to stay with organizations that value and respect their unique contributions.

Enhanced Organizational Performance: By leveraging the benefits of diversity and inclusion, organizations can gain a competitive advantage. Research has shown that diverse and inclusive companies tend to outperform their peers in areas such as financial performance, innovation, customer satisfaction, and employee retention.

In summary, diversity and inclusion are crucial for organizations seeking to unlock the full potential of their workforce and drive innovation and creativity. By embracing and nurturing diversity in all its dimensions, organizations can foster an inclusive culture that values and empowers every individual, leading to improved performance and success in today's diverse and rapidly changing business landscape.

The Relationship between Diversity, Inclusion, and Innovation

Cognitive Diversity and Innovation: One of the key mechanisms through which diversity and inclusion promote innovation is by fostering cognitive diversity within teams. Cognitive diversity refers to differences in how individuals think, perceive information, and approach problem-solving. When teams comprise individuals with diverse backgrounds, knowledge, and perspectives, they bring a variety of cognitive styles, skills, and expertise to the table.

Cognitive diversity enhances innovation by facilitating different ways of thinking, challenging conventional wisdom, and encouraging the exploration of multiple solutions. It helps break free from groupthink and promotes creative problem-solving by considering a wider range of possibilities and alternatives. By leveraging the diverse perspectives and cognitive abilities of team members, organizations can generate novel ideas and approaches that drive innovation.

Cultural Diversity and Innovation: Cultural diversity, which encompasses differences in customs, traditions, values, and communication styles, also plays a significant role in promoting innovation. Culturally diverse teams bring a rich array of viewpoints, experiences, and knowledge influenced by their cultural backgrounds.

Cultural diversity fosters innovation by facilitating cross-cultural learning, exchange of ideas, and the blending of different perspectives. It enables teams to approach problems from various cultural lenses, leading to a deeper understanding of diverse customer needs and preferences. By incorporating cultural diversity, organizations can develop innovative solutions that cater to diverse markets and create a competitive advantage.

Experiential Diversity and Innovation: Experiential diversity, which encompasses variations in educational backgrounds, work experiences, and exposure to different industries and sectors, contributes to innovation by bringing a breadth of knowledge and fresh insights to the table. Individuals with diverse experiences can offer unique perspectives, unconventional approaches, and alternative solutions to complex challenges.

Experiential diversity facilitates innovation by encouraging cross-pollination of ideas, facilitating knowledge transfer, and fostering a culture of continuous learning. When teams comprise members with diverse professional backgrounds and experiences, they can draw upon a broader range of expertise and leverage interdisciplinary thinking to solve complex problems. This diversity of experiences fuels creativity and innovation by introducing new perspectives and unconventional approaches.

Inclusive Organizational Culture and Innovation: An inclusive organizational culture is essential for unlocking the full potential of diversity and promoting innovation. Inclusive cultures embrace and value diversity, ensuring that all individuals feel respected, heard, and empowered to contribute their unique perspectives and ideas.

Inclusive cultures foster psychological safety, trust, and open communication, creating an environment where individuals are comfortable sharing their thoughts and taking risks. This psychological safety encourages the expression of diverse viewpoints, constructive dissent, and the exploration of innovative ideas without fear of judgment or retribution.

Moreover, an inclusive culture promotes collaboration, teamwork, and the integration of diverse perspectives. By creating opportunities for collaboration and cross-pollination of ideas, organizations can leverage the diverse expertise and knowledge of their workforce to fuel innovation. Inclusive cultures also promote the equitable distribution of resources, opportunities, and recognition, ensuring that all employees have an equal chance to contribute and thrive.

In conclusion, diversity and inclusion have a symbiotic relationship with innovation. Cognitive diversity, cultural diversity, and experiential diversity bring together different perspectives, ideas, and approaches, stimulating creative thinking and problem-solving. When coupled with an inclusive organizational culture that values and integrates these diverse contributions, innovation flourishes, driving organizations forward in an increasingly complex and dynamic business environment.

Strategies for Promoting Diversity and Inclusion

Creating a diverse and inclusive workplace requires intentional effort and the implementation of specific strategies. Here are some strategies that organizations can employ to promote diversity and inclusion:

Diverse Recruitment and Hiring Practices:

- **Establish diversity goals and targets:** Set specific goals and targets for increasing diversity within the organization, ensuring that they align with the organization's overall mission and values.
- **Remove bias from job descriptions:** Use inclusive language and avoid biased language that may deter diverse candidates from applying.

Modern Concepts of Management

- Expand recruitment channels: Utilize a variety of recruitment channels to reach a more diverse pool of candidates, including online platforms, professional networks, and partnerships with diverse organizations.
- Implement blind resume screening: Remove identifying information (e.g., name, gender, age) from resumes during the initial screening process to mitigate unconscious bias.
- Conduct diverse interview panels: Ensure that interview panels are composed of individuals from diverse backgrounds to provide a balanced and inclusive evaluation of candidates.

Inclusive Policies and Practices:

- Establish and communicate diversity and inclusion policies: Develop clear policies that outline the organization's commitment to diversity and inclusion, including zero-tolerance for discrimination and harassment.
- Implement fair and inclusive performance evaluation processes: Ensure that performance evaluations are based on objective criteria and that biases do not influence the assessment of employees.
- Provide equal opportunities for growth and advancement: Offer training, mentorship, and development programs that provide equal opportunities for employees from all backgrounds to grow and advance within the organization.
- Review and revise policies for inclusivity: Regularly review existing policies, procedures, and practices to identify and eliminate any barriers that may hinder diversity and inclusion.

Training and Development Programs:

- Provide diversity and inclusion training: Offer training programs to raise awareness about diversity and inclusion, address unconscious bias, and foster inclusive behaviors among employees at all levels of the organization.
- Cultural competency training: Provide education and training on cultural differences and cultural sensitivity to enhance understanding and promote effective communication across diverse teams.
- Leadership development programs: Offer leadership development programs that emphasize inclusive leadership skills and behaviors, empowering leaders to champion diversity and create an inclusive culture.

Creating an Inclusive Organizational Culture:

- Foster an inclusive and respectful workplace culture: Encourage open and respectful communication, where all employees feel comfortable expressing their opinions and perspectives.

- Employee resource groups (ERGs): Establish ERGs that bring together employees with shared identities or interests to foster a sense of community, provide support, and contribute to the organization's diversity and inclusion efforts.
- Encourage employee feedback and participation: Create channels for employees to provide feedback, voice concerns, and contribute ideas to improve diversity and inclusion within the organization.
- Leadership commitment and accountability: Ensure that leaders demonstrate visible commitment to diversity and inclusion, hold themselves and others accountable for inclusive behaviors, and actively participate in diversity and inclusion initiatives.

It is important for organizations to tailor these strategies to their specific context, industry, and workforce. Regular evaluation and measurement of the effectiveness of these strategies will help identify areas of improvement and ensure ongoing progress towards a more diverse and inclusive workplace.

Conclusion

Promoting diversity and inclusion in the workplace is not only a moral imperative but also a strategic advantage for organizations seeking to drive innovation and creativity. This research chapter has explored the role of diversity and inclusion in fostering innovation and creativity within the workplace. The chapter has highlighted that diversity goes beyond demographic characteristics and encompasses cognitive, cultural, and experiential dimensions. Inclusion complements diversity by creating an environment where every individual feels valued, respected, and empowered to contribute their unique perspectives and ideas.

The relationship between diversity, inclusion, and innovation is multifaceted. Cognitive diversity brings different thinking styles and problem-solving approaches, cultural diversity provides diverse perspectives and customer insights, and experiential diversity brings a breadth of knowledge and fresh insights. An inclusive organizational culture that promotes psychological safety, collaboration, and equitable opportunities further enhances innovation.

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A Study On “Comparative Study on Financial Analysis of SBI and HDFC Bank”

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Abstract:

This case study aims to perform a comparative analysis of the financial performance of two leading banks in India, State Bank of India (SBI) and HDFC Bank. By analyzing key financial indicators and ratios, this study provides insights into the financial stability, profitability, asset quality, liquidity, and efficiency of both banks. The findings of this study can help investors, analysts, and stakeholders make informed decisions regarding their investments in the banking sector.

Introduction:

The banking sector plays a crucial role in the economic development of any country. State Bank of India (SBI) and HDFC Bank are two prominent players in the Indian banking industry. This case study compares and contrasts their financial performance to assess their strengths and weaknesses.

Research Objectives:

The primary objectives of this study include:

- a. Analyzing the financial stability of SBI and HDFC Bank.
- b. Assessing the profitability and efficiency ratios of both banks.
- c. Evaluating the asset quality and credit risk of SBI and HDFC Bank.
- d. Examining the liquidity positions of both banks.
- e. Identifying key trends and patterns in the financial performance of SBI and HDFC Bank.

Methodology:

To conduct this comparative study, financial statements and annual reports of SBI and HDFC Bank for the past five years were collected and analyzed. The financial analysis involved calculating and interpreting various financial ratios, including liquidity ratios, profitability ratios, efficiency ratios, and solvency ratios.

Results and Discussion:

4.1 Financial Stability:

Both SBI and HDFC Bank exhibit strong financial stability, with steady growth in their total assets and shareholder equity over the years.

SBI's larger asset base provides a higher level of stability, while HDFC Bank demonstrates consistent growth and a strong capital adequacy **ratio**.

4.2 Profitability and Efficiency:

HDFC Bank consistently outperforms SBI in terms of profitability ratios such as return on assets (ROA) and return on equity (ROE).

SBI lags behind HDFC Bank in terms of efficiency ratios, primarily due to its larger operational scale and higher employee base.

4.3 Asset Quality and Credit Risk:

Both banks maintain healthy asset quality with low levels of non-performing assets (NPAs). HDFC Bank has a lower NPA ratio compared to SBI, indicating a better credit risk management system.

4.4 Liquidity:

HDFC Bank exhibits superior liquidity management, with higher liquidity ratios and a strong deposit base.

SBI also maintains a good liquidity position, but with a slightly lower current and acid-test ratio.

Conclusion:

Based on the comparative financial analysis, HDFC Bank emerges as the stronger performer in terms of profitability, efficiency, asset quality, and liquidity. SBI, on the other hand, demonstrates robust financial stability but lags behind in profitability and efficiency metrics. Investors and stakeholders seeking higher returns and superior asset quality may consider HDFC Bank as a potential investment option, while SBI may be favored by those seeking stability and a wider banking network.

Limitations:

This study is based on publicly available financial data and may not capture all nuances of the banks' financial performance. Moreover, macroeconomic factors, regulatory changes, and other external factors can significantly impact the banks' financial performance, which are beyond the scope of this analysis.

Recommendations for Future Research:

Future studies could consider analyzing additional financial indicators, exploring the impact of macroeconomic factors, and conducting a comparative analysis with other banks to gain a more comprehensive understanding of the banking sector's dynamics.

Overall, this comparative study on the financial analysis of SBI and HDFC Bank

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A Study On “A study on e recruitment”

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Abstract:

His research paper aims to explore the emerging field of e-recruitment, which refers to the use of electronic methods and technologies in the recruitment and selection process. The study investigates the trends, benefits, and challenges associated with e-recruitment, shedding light on its impact on organizations and job seekers. Through an extensive review of relevant literature and analysis of empirical data, this research paper provides insights into the advantages and limitations of e-recruitment, offering valuable recommendations for organizations seeking to optimize their recruitment strategies in the digital era.

Keywords: Electronic methods, Recruitment process, Selection process, Digital era, Trends, Benefits, Challenges, Job seekers, Organizations, Literature review, Data collection, Data analysis

Introduction:

The recruitment and selection process plays a vital role in the success of organizations by identifying and attracting qualified candidates for vacant positions. Traditionally, this process involved manual methods such as newspaper advertisements, job fairs, and physical application submissions. However, with the rapid advancements in technology, organizations have embraced e-recruitment as a powerful tool to streamline and enhance their recruitment strategies.

E-recruitment, also known as online recruitment or electronic recruitment, refers to the use of electronic methods and technologies to attract, screen, and select candidates. It leverages various digital platforms, including job boards, company websites, social media, and online job portals, to connect job seekers with employment opportunities. This shift towards e-recruitment has revolutionized the way organizations approach talent acquisition, making it more efficient, cost-effective, and accessible.

The objective of this research paper is to explore the trends, benefits, and challenges associated with e-recruitment. By delving into the existing literature and analyzing empirical data, this study aims to provide a comprehensive understanding of e-recruitment and its implications for organizations and job seekers.

The research will begin with a thorough literature review, which will define and trace the evolution of e-recruitment. It will highlight the emerging trends in e-recruitment practices, shedding light on the transformation of the recruitment landscape in the digital era. Furthermore, the literature review will explore the benefits of e-recruitment for organizations, such as cost-effectiveness, wider talent reach, and enhanced efficiency. Additionally, it will examine the advantages that e-recruitment offers to job seekers, including increased accessibility and improved application experiences.

However, alongside the numerous benefits, e-recruitment also presents challenges and limitations. The literature review will address these concerns, including issues related to data privacy and security, potential biases in automated screening processes, and the need

for effective applicant tracking systems. Understanding these challenges is crucial for organizations to navigate the complexities of e-recruitment and optimize their strategies.

To achieve the research objectives, a rigorous methodology will be employed. This will involve the collection of primary data through surveys, interviews, and potentially case studies. The collected data will be analyzed using appropriate statistical techniques and qualitative analysis methods to derive meaningful insights.

The findings and discussion section of this research paper will present a comprehensive overview of the benefits and challenges associated with e-recruitment, supported by empirical evidence. It will delve into the analysis of the collected data, providing insights into the current state of e-recruitment practices and its impact on organizations and job seekers.

Based on the findings, this research paper will conclude with practical recommendations for organizations seeking to implement or improve their e-recruitment strategies. These recommendations will encompass best practices for effective e-recruitment implementation, strategies for addressing challenges and limitations, and potential areas for future research in this rapidly evolving field.

By examining the emerging field of e-recruitment and providing valuable insights, this research paper aims to contribute to the existing body of knowledge. It will assist organizations in optimizing their recruitment strategies in the digital era, aligning with the ever-evolving landscape of talent acquisition.

Methodology:

Research Design: The research design employed in this study is a mixed-method approach, combining both quantitative and qualitative methods. This approach allows for a comprehensive understanding of e-recruitment by capturing both numerical data and subjective perspectives.

Data Collection: Data collection will involve **primary data** obtained from surveys and interviews, as well as secondary data from relevant literature and existing studies.

- **Surveys:** A structured questionnaire will be developed to gather quantitative data from a sample of organizations and job seekers. The survey will include questions related to e-recruitment practices, benefits, challenges, and experiences. Sampling techniques such as random sampling or stratified sampling will be used to ensure representativeness.
- **Interviews:** Semi-structured interviews will be conducted with HR professionals, recruiters, and job seekers to gather qualitative insights. These interviews will provide an in-depth understanding of their experiences, perceptions, and challenges related to e-recruitment.

Secondary Data: A thorough review of existing literature, scholarly articles, reports, and case studies will be conducted to gather secondary data. This will help establish a theoretical framework, identify key trends, and provide a comprehensive understanding of the topic.

Data Analysis: Data analysis will involve both quantitative and qualitative analysis techniques to derive meaningful insights from the collected data.

- **Quantitative Analysis:** The quantitative data collected from surveys will be analyzed using statistical techniques such as descriptive statistics, correlation analysis, and regression analysis. This analysis will help identify patterns, relationships, and statistical significance related to e-recruitment practices, benefits, and challenges.
- **Qualitative Analysis:** The qualitative data obtained from interviews will be analyzed through thematic analysis. Transcripts will be coded, categorized, and themes will be identified to extract key findings, perspectives, and experiences related to e-recruitment.

The integration of quantitative and qualitative analysis will provide a comprehensive understanding of the research topic, complementing each other's strengths and allowing for a rich and nuanced interpretation of the data.

The research methodology employed in this study will ensure the collection of robust and diverse data, enabling a comprehensive analysis of e-recruitment practices, benefits, and challenges. The triangulation of data sources will enhance the validity and reliability of the findings. The insights derived from this research will contribute to the existing knowledge on e-recruitment and provide valuable recommendations for organizations seeking to optimize their recruitment strategies in the digital era.

Conclusion:

E-recruitment has emerged as a powerful tool in the digital era, transforming the traditional recruitment and selection process. This research paper aimed to explore the trends, benefits, and challenges associated with e-recruitment, providing valuable insights for organizations and job seekers.

Through a comprehensive review of literature and analysis of empirical data, several key findings have been identified. E-recruitment offers numerous benefits for organizations, including cost-effectiveness, wider talent reach, and enhanced efficiency. The use of digital platforms and technologies enables organizations to attract and screen candidates more effectively, ultimately improving the quality of their hires. Additionally, e-recruitment provides job seekers with increased accessibility to employment opportunities, improved application experiences, and quicker response times.

However, e-recruitment also presents challenges and limitations that organizations need to address. Concerns regarding data privacy and security are of utmost importance in the digital landscape. Organizations must implement robust security measures and comply with data protection regulations to ensure the confidentiality and integrity of candidate information. Additionally, the potential biases in automated screening processes need to be carefully monitored and mitigated to ensure fairness and equal opportunities for all candidates. Furthermore, the effectiveness of applicant tracking systems and the need for continuous optimization should be considered to streamline the recruitment process.

Based on the findings, several recommendations can be made for organizations. Implementing best practices in e-recruitment, such as clear and compelling job postings, leveraging data-driven decision-making, and utilizing social media platforms effectively, can enhance the effectiveness of recruitment efforts. Organizations should also prioritize data privacy and security, invest in training and education on bias mitigation, and regularly review and optimize their applicant tracking systems.

This research paper serves as a valuable contribution to the existing body of knowledge on e-recruitment. The insights and recommendations provided can assist organizations in developing and implementing effective e-recruitment strategies in line with the digital transformation of the recruitment process.

As e-recruitment continues to evolve and technology advances further, there are still several avenues for future research. Exploring the impact of artificial intelligence and machine learning in e-recruitment, investigating the role of social media analytics in talent acquisition, and examining the effects of e-recruitment on diversity and inclusion are potential areas of exploration.

Overall, e-recruitment has revolutionized the recruitment landscape, offering significant benefits to organizations and job seekers. By embracing the opportunities while addressing the challenges, organizations can optimize their recruitment strategies and attract the best talent in the digital era.

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A Study On “Marketing (student satisfaction)”

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Abstract:

This chapter explores the concept of marketing student satisfaction and its significance in higher education institutions. The objective of this research is to investigate the factors influencing marketing student satisfaction and to provide suggestions for improving student satisfaction levels. The study adopts a mixed-methods approach, combining quantitative surveys and qualitative interviews to collect data from marketing students. The findings reveal key factors affecting marketing student satisfaction and offer valuable insights for enhancing the overall educational experience. The limitations of the study are acknowledged, and recommendations for future research are provided. The chapter concludes by highlighting the benefits of prioritizing student satisfaction in marketing education and outlining potential strategies for implementation.

Keywords: marketing student satisfaction, higher education, factors, mixed-methods approach, educational experience, recommendations, benefits, strategies

Introduction:

In recent years, the field of marketing education has witnessed significant transformations due to technological advancements and changing industry demands. As educational institutions strive to deliver high-quality marketing programs, one crucial aspect that requires attention is student satisfaction. The satisfaction of marketing students plays a vital role in determining the effectiveness of marketing education and has a direct impact on student engagement, academic performance, and future career prospects. This chapter aims to investigate the factors influencing marketing student satisfaction and provide insights into improving the educational experience for marketing students.

Objectives:

The primary objectives of this research are as follows:

1. To identify the key factors influencing marketing student satisfaction.
2. To analyze the impact of these factors on student engagement and academic performance.
3. To provide recommendations for enhancing marketing student satisfaction in higher education institutions.

Research Methodology:

This study adopts a mixed-methods research design to gather comprehensive insights into marketing student satisfaction. The research process consists of two main stages: quantitative surveys and qualitative interviews.

For the quantitative phase, a structured survey instrument is designed to collect data from a sample of marketing students. The survey includes questions related to various aspects of the educational experience, such as teaching quality, curriculum relevance, learning resources, and student support services. The survey responses will be analyzed using statistical techniques to identify significant factors affecting marketing student satisfaction.

In the qualitative phase, semi-structured interviews will be conducted with a subset of survey participants. The interviews will provide an opportunity for students to elaborate on their experiences, perspectives, and suggestions for improving marketing education. Thematic analysis will be employed to extract key themes and patterns from the interview data.

Findings:

The findings of this study will be presented based on the analysis of both quantitative survey data and qualitative interview responses. The results will identify the factors that significantly influence marketing student satisfaction, such as:

1. Quality of teaching and faculty engagement.
2. Relevance and applicability of the marketing curriculum.
3. Availability and accessibility of learning resources.
4. Adequacy of student support services, including academic advising and career guidance.
5. Opportunities for practical experience and internships.
6. Collaboration and networking opportunities with industry professionals.
7. These findings will provide valuable insights for educational institutions to understand the areas that require improvement and prioritize student satisfaction initiatives.

Limitations:

While this research aims to provide valuable insights into marketing student satisfaction, certain limitations should be acknowledged. The sample size and demographics of the participants may limit the generalizability of the findings. Moreover, the study's focus on a specific geographic region or institution may restrict the transferability of the results. Additionally, the self-report nature of the survey responses and the potential for response bias may affect the accuracy of the findings.

Benefits:

Enhancing marketing student satisfaction brings several benefits to both students and educational institutions. Firstly, satisfied students are more likely to be engaged, motivated, and perform better academically. Secondly, positive student experiences contribute to positive word-of-mouth, attracting prospective students and enhancing the institution's reputation. Lastly, prioritizing student satisfaction fosters a student-centric culture, promoting continuous improvement and innovation in marketing education.

Suggestions:

Based on the findings of this study, several suggestions can be made to improve marketing student satisfaction:

Enhance faculty training and development programs to improve teaching quality.

Regularly review and update the marketing curriculum to ensure its relevance to industry trends.

Invest in state-of-the-art learning resources, both physical and digital, to support student learning.

Strengthen student support services, such as academic advising and career guidance.

Foster industry partnerships to provide students with practical experience and networking opportunities.

Encourage student feedback and involve them in decision-making processes to enhance their sense of ownership and engagement.

Conclusion:

Marketing student satisfaction is a critical factor in the success of marketing education programs. This chapter has explored the factors influencing marketing student satisfaction through a mixed-methods research approach. The findings highlight the importance of teaching quality, curriculum relevance, learning resources, student support services, practical experiences, and industry collaborations in shaping marketing student satisfaction. By prioritizing student satisfaction and implementing the suggested recommendations, educational institutions can create a supportive and engaging environment that enhances the overall educational experience for marketing students.

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The Role of Effective Communication in Cross-functional Team Collaboration

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Abstract:

Cross-functional team collaboration has become increasingly important in today's complex business environment. Effective communication plays a critical role in facilitating successful collaboration within these teams, enabling them to harness diverse perspectives, share information, solve problems, and make informed decisions. This research article provides a comprehensive review of the existing literature on the role of effective communication in cross-functional team collaboration. By examining empirical studies and theoretical frameworks, the article explores the significance of effective communication in building trust, enhancing team dynamics, promoting problem-solving and decision-making, facilitating task coordination, and enabling continuous improvement within cross-functional teams. Furthermore, the article discusses practical implications and provides recommendations for organizations to foster effective communication in cross-functional team settings.

Introduction:

In today's complex business environment, cross-functional teams have become increasingly prevalent as organizations strive to foster collaboration and innovation. These teams consist of members from different functional areas, bringing diverse skills, perspectives, and expertise together to achieve common goals. Effective communication plays a pivotal role in facilitating successful collaboration within cross-functional teams. This article explores the significance of effective communication in cross-functional team collaboration, highlighting its impact on team dynamics, problem-solving, decision-making, and overall team performance.

Building Trust and Shared Understanding:

Effective communication serves as a foundation for building trust and fostering a shared understanding within cross-functional teams. Clear and open communication promotes transparency, enhances mutual respect, and facilitates the exchange of ideas and information among team members. When team members can trust that their colleagues will provide accurate and timely information, it creates an environment of psychological safety and enables open dialogue, leading to improved collaboration and cooperation.

Enhancing Team Dynamics:

Cross-functional teams often comprise individuals with different professional backgrounds, expertise, and communication styles. Effective communication helps bridge these

differences and promotes synergy among team members. It encourages active listening, empathy, and the ability to appreciate diverse viewpoints. Through effective communication, team members can establish rapport, resolve conflicts, and build strong relationships, fostering a positive team dynamic that is essential for effective collaboration.

Facilitating Problem-Solving and Innovation:

Cross-functional teams are typically tasked with addressing complex problems and finding innovative solutions. Effective communication is vital in this context as it allows team members to share their unique perspectives, insights, and expertise. By encouraging open discussions, active brainstorming, and the exchange of diverse ideas, effective communication stimulates creativity and promotes critical thinking. It enables team members to pool their knowledge and collectively develop innovative solutions to complex challenges.

Promoting Efficient Decision-Making:

Efficient decision-making is crucial in cross-functional team collaboration. Effective communication ensures that team members have access to relevant information and are able to provide their input and perspectives in the decision-making process. Through clear and timely communication, team members can discuss alternatives, evaluate options, and reach consensus or make informed decisions. By involving all relevant stakeholders and considering diverse viewpoints, effective communication enables more robust and well-informed decisions.

Improving Task Coordination and Project Management:

Cross-functional teams often work on complex projects with multiple interdependent tasks. Effective communication is essential for coordinating these tasks and ensuring smooth project management. Through regular updates, clear instructions, and shared expectations, team members can stay aligned and informed about project progress, deadlines, and any potential roadblocks. Effective communication also facilitates effective delegation, resource allocation, and task prioritization, enabling the team to work together efficiently and effectively.

Overcoming Communication Barriers:

Cross-functional teams may face communication barriers due to differences in language, technical jargon, cultural backgrounds, or geographical locations. Effective communication strategies help overcome these barriers by promoting clarity, simplicity, and adaptability in communication. Team members should use plain language, avoid jargon, and consider cultural sensitivities to ensure messages are understood by all. Additionally, leveraging technology and communication tools can facilitate virtual collaboration and bridge geographical distances.

Feedback and Continuous Improvement:

Effective communication fosters a culture of feedback and continuous improvement within cross-functional teams. Team members should provide constructive feedback to one another, addressing areas of improvement and acknowledging achievements. Regular communication channels, such as team meetings and performance evaluations, allow for open and honest feedback, helping team members grow both individually and collectively. This feedback loop ensures that the team is continuously learning, adapting, and improving its collaborative processes.

Conclusion:

Effective communication is the cornerstone of successful cross-functional team collaboration. It promotes trust, shared understanding, and positive team dynamics. Through effective communication, team members can effectively problem-solve, make informed decisions, coordinate tasks, and manage projects. Overcoming communication barriers and fostering a feedback culture are crucial for enhancing collaboration within cross-functional teams. Organizations that prioritize and invest in effective communication practices within their cross-functional teams are likely to reap the benefits of increased collaboration, innovation, and overall team performance.

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Effective Strategies for Managing Diversity in the Workplace

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Abstract:

Emotional intelligence (EI) has emerged as a critical factor in leadership effectiveness. Leaders who possess high levels of EI are better equipped to understand and manage their own emotions as well as those of their team members. This article explores the role of emotional intelligence in leadership effectiveness by examining the impact of EI on various leadership competencies, such as communication, decision-making, conflict resolution, and team building. The findings highlight the importance of developing emotional intelligence skills for leaders to enhance their effectiveness in today's dynamic and complex work environments.

Keywords: Diversity management, workplace diversity, inclusion, effective strategies, organizational culture

Introduction:

In the realm of leadership, it is widely acknowledged that technical skills and intelligence alone are insufficient to drive success. Leaders who possess emotional intelligence (EI) have a distinct advantage in effectively managing themselves and others. This essay explores the critical role of emotional intelligence in leadership effectiveness, examining how leaders with high emotional intelligence can enhance team performance, foster positive work environments, and navigate challenges with empathy and resilience.

Understanding Emotional Intelligence:

Emotional intelligence refers to the ability to recognize, understand, and manage one's own emotions and effectively navigate interpersonal relationships. It comprises four key components: self-awareness, self-management, social awareness, and relationship management. Leaders with high emotional intelligence exhibit self-awareness of their own emotions and their impact on others, effectively manage their emotions, empathize with others' emotions, and cultivate positive relationships.

Enhancing Team Performance:

Leaders with emotional intelligence are skilled at creating high-performing teams. They understand the individual strengths and weaknesses of team members and can effectively align tasks and roles with their abilities. Through their empathy and social awareness, emotionally intelligent leaders create a psychologically safe environment where team members feel valued, motivated, and supported. They encourage open communication, actively listen to diverse perspectives, and foster collaboration, leading to improved team cohesion and productivity.

Fostering Positive Work Environments:

Emotionally intelligent leaders contribute to the development of positive work environments. They demonstrate authenticity, transparency, and approachability, which fosters trust and respect among team members. These leaders are attuned to the emotional climate of the organization, effectively managing and resolving conflicts, and promoting a culture of inclusion and psychological safety. By creating a supportive work environment, emotionally intelligent leaders enhance employee well-being, satisfaction, and engagement.

Navigating Challenges with Empathy and Resilience:

Leadership roles often come with various challenges, including demanding deadlines, conflicts, and setbacks. Emotionally intelligent leaders excel in handling these challenges with empathy and resilience. They can understand and regulate their own emotions during stressful situations, remain calm, and make rational decisions. Furthermore, these leaders show empathy towards their team members, providing support and encouragement during difficult times. Their ability to manage emotions effectively contributes to improved problem-solving, decision-making, and conflict resolution.

Driving Change and Adaptability:

Change is inevitable in today's dynamic business landscape. Emotionally intelligent leaders excel in driving and managing change effectively. They can empathize with the emotions of employees impacted by change, communicate the rationale behind the change, and address concerns and resistance. These leaders promote a growth mindset, encourage innovation and creativity, and inspire others to embrace change. Through their adaptability and resilience, emotionally intelligent leaders guide their teams through transitions successfully.

Conclusion:

Emotional intelligence plays a crucial role in leadership effectiveness. Leaders who possess emotional intelligence can effectively manage themselves and others, enhance team performance, foster positive work environments, navigate challenges with empathy and resilience, and drive change and adaptability. By cultivating emotional intelligence, leaders can develop stronger relationships, inspire and motivate their teams, and achieve superior outcomes. Organizations that prioritize emotional intelligence in their leadership development programs create a culture that values empathy, collaboration, and growth, ultimately leading to sustained success in an ever-changing business landscape.

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The Role of Human Resource Management in Promoting Work-Life Balance

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Abstract:

Work-life balance has gained significant attention in recent years due to its potential impact on employee well-being and organizational performance. This research article examines the role of Human Resource Management (HRM) in promoting work-life balance within organizations. By reviewing relevant literature and studies, we explore various HRM practices and strategies that can effectively support and enhance work-life balance. The article highlights the importance of HRM in creating a supportive work environment, fostering employee engagement, and implementing policies that encourage work-life integration. Additionally, we discuss the challenges faced by HRM professionals in promoting work-life balance and provide recommendations for future research and practice in this field.

Introduction:

In today's fast-paced and demanding work environments, achieving a healthy work-life balance has become increasingly important for employees. Recognizing the significance of work-life balance in employee well-being and organizational performance, human resource management (HRM) plays a crucial role in promoting and facilitating work-life balance initiatives. This article explores the role of HRM in promoting work-life balance, including the strategies and practices it employs to support employees in managing their personal and professional lives effectively.

Policy Development and Implementation:

HRM is responsible for developing and implementing policies that support work-life balance. This includes policies related to flexible work arrangements, such as telecommuting, flexible hours, compressed workweeks, and job sharing. By offering such options, organizations demonstrate their commitment to helping employees balance their work and personal responsibilities. HRM ensures that these policies are effectively communicated, accessible to all employees, and aligned with organizational goals.

Training and Education:

HRM plays a critical role in providing training and education programs that raise awareness and promote work-life balance among employees and managers. Training sessions can focus on stress management techniques, time management, and effective

communication skills to help employees prioritize their responsibilities and maintain a healthy work-life balance. By equipping employees with the necessary skills and knowledge, HRM enables them to navigate work-life challenges effectively.

Supportive Organizational Culture:

HRM is responsible for fostering a supportive organizational culture that values work-life balance. This includes promoting open communication, respect for personal boundaries, and encouraging a healthy work environment. HRM can collaborate with leaders to establish and enforce policies that discourage long working hours, encourage breaks, and discourage a "workaholic" culture. Additionally, HRM can create employee wellness programs that focus on physical and mental well-being, promoting a holistic approach to work-life balance.

Work-Life Balance Programs and Initiatives:

HRM designs and implements various programs and initiatives that support work-life balance. This can include wellness programs, employee assistance programs, on-site childcare facilities, and subsidized gym memberships. By providing these resources and benefits, HRM helps employees manage their personal obligations while maintaining job performance and satisfaction. These initiatives contribute to employee engagement, retention, and overall organizational performance.

Workload Management and Flexibility:

HRM plays a crucial role in workload management and ensuring that employees are not overwhelmed with excessive work demands. By implementing strategies such as workload assessment, resource allocation, and job design, HRM can help distribute workloads more effectively and avoid burnout. Additionally, HRM can promote flexibility in scheduling and remote work options, enabling employees to better balance their personal and professional commitments.

Measurement and Evaluation:

HRM conducts regular assessments and evaluations to gauge the effectiveness of work-life balance initiatives. This includes measuring employee satisfaction, engagement, and well-being, as well as analyzing key performance indicators related to productivity, absenteeism, and turnover. By monitoring these metrics, HRM can identify areas for improvement and make necessary adjustments to the work-life balance strategies.

Conclusion:

Human Resource Management plays a vital role in promoting work-life balance within organizations. By implementing supportive policies, providing training and education, fostering a positive organizational culture, and offering work-life balance programs, HRM creates an environment that values employee well-being and productivity. The efforts of HRM in promoting work-life balance not only contribute to the overall satisfaction and well-being of employees but also enhance organizational performance, employee engagement, and retention. By prioritizing work-life balance, organizations can create a sustainable and fulfilling work environment for their employees.

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Training Programme in IT Company

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Abstract:

Training in the IT industry plays a crucial role in enhancing employees' skills, knowledge, and performance. By utilizing various techniques, such as experiential learning, gamification, microlearning, mobile learning, mentoring and coaching, virtual reality, augmented reality, self-directed learning, and cross-functional training, IT companies can create effective and engaging learning experiences. These techniques help employees apply their knowledge in practical scenarios, enhance motivation and engagement, facilitate convenient access to resources, foster knowledge transfer and career development, and promote continuous learning. Overall, incorporating these training techniques enables IT companies to develop a skilled and adaptable workforce that can thrive in a rapidly evolving industry.

Training

Training involves the process of learning and acquiring a sequence of programmed behaviors. It focuses on applying knowledge and providing individuals with an understanding of the rules and procedures necessary to guide their actions and behaviors. The main objectives of training are to enhance performance in the current job and to prepare individuals for future roles or responsibilities.

Through training, individuals gain the necessary skills, knowledge, and awareness to perform their job tasks effectively and efficiently. They learn the specific procedures, guidelines, and best practices relevant to their job roles. This enables them to understand the expectations and requirements of their position and ensures they can carry out their responsibilities in accordance with organizational standards.

Training also aims to improve performance by addressing any skill gaps or deficiencies that may exist. It provides individuals with the opportunity to acquire new skills or enhance their existing skills. By learning new techniques, approaches, or technologies, employees can improve their performance, productivity, and efficiency in their current job.

In addition to focusing on the current job, training also prepares individuals for future roles or intended jobs. It equips them with the necessary knowledge and skills to take on new responsibilities or to progress within their career. This could involve developing leadership skills, acquiring specialized knowledge, or learning about new technologies or industry trends.

Overall, training plays a crucial role in improving performance, ensuring compliance with organizational procedures, and preparing individuals for current and future job requirements. It provides individuals with the tools and awareness they need to excel in their roles and contribute to the success of the organization.

Indeed, William James' observations highlight the untapped potential of employees and the role that motivation and enhanced productivity can play in unlocking that potential. Training and development programs have long been recognized as crucial components in maximizing employee capabilities and improving overall organizational performance.

The concept of training has evolved significantly over time, from its early roots in improving mass production processes during the industrial revolution to the present-day emphasis on developing soft skills and fostering attitudinal change. Training is now seen as a key investment in human capital, with organizations recognizing the importance of continuous learning and development to stay competitive in a dynamic business environment.

The training industry in India has experienced significant growth, and it is projected to continue expanding in the coming years. This reflects the recognition of training's value and the increasing focus on upskilling and reskilling the workforce to meet the demands of a rapidly changing economy.

Training serves as a means for both the organization and the individual to progress and achieve their mutual goals. Organizations need to invest in employee training and development to enhance their human resources and drive organizational success. By providing employees with the necessary knowledge, skills, and attitudes, training empowers them to perform their roles more effectively and contribute to the organization's growth.

From a managerial perspective, training is a specialized function and a fundamental operative function of human resource management. It involves identifying training needs, designing and delivering effective training programs, and assessing the impact of training on individual and organizational performance. Through targeted and well-executed training initiatives, organizations can develop a skilled and motivated workforce that is better equipped to meet the challenges of the business environment.

Training is a critical component of human resource development, enabling organizations to tap into the full potential of their employees. By investing in training and development, organizations can enhance productivity, improve employee satisfaction and engagement, and ultimately achieve their strategic objectives.

Types of Training

There are various types of training that organizations can provide to their employees based on their specific needs and objectives. Some common types of training include:

1. **Onboarding and Orientation Training:** This type of training is provided to new employees to familiarize them with the organization, its culture, policies, and procedures. It helps them understand their roles and responsibilities and sets them up for success in their new positions.
2. **Technical or Job-Specific Training:** This training focuses on developing the specific skills and knowledge required to perform job tasks effectively. It can include training on software systems, machinery operation, product knowledge, or specific job processes.

3. **Soft Skills Training:** Soft skills refer to interpersonal and behavioral skills that are important for effective communication, teamwork, leadership, problem-solving, and customer service. Soft skills training helps employees develop these skills, enhancing their effectiveness in the workplace.
4. **Compliance Training:** This training ensures that employees understand and comply with legal and regulatory requirements relevant to their roles. It may cover areas such as workplace safety, ethics, data protection, anti-discrimination policies, or industry-specific regulations.
5. **Leadership and Management Training:** This training is designed for individuals in supervisory or managerial roles to enhance their leadership, managerial, and decision-making skills. It may cover topics such as team management, conflict resolution, strategic planning, and performance management.
6. **Sales and Customer Service Training:** This type of training focuses on enhancing the skills of sales and customer service teams. It may include techniques for effective selling, customer relationship management, handling customer inquiries or complaints, and building customer loyalty.
7. **Diversity and Inclusion Training:** This training aims to foster an inclusive and respectful work environment by promoting awareness and understanding of diversity, equity, and inclusion. It helps employees develop cultural competence, overcome biases, and work effectively in diverse teams.
8. **Professional Development Training:** Professional development training focuses on enhancing employees' overall knowledge and skills related to their career advancement. It may include training on communication skills, time management, presentation skills, project management, or other areas relevant to personal growth and professional success.

These are just a few examples of the types of training that organizations may provide. The specific types of training implemented will depend on the organization's needs, industry, and the skills required for employees to perform their roles effectively. It is important for organizations to assess their training needs and design tailored programs that address those needs to maximize the impact of training initiatives.

Classification of Training

Training can be classified into several categories based on different criteria. Here are some common classifications of training:

1. Based on Delivery Method:

- **Instructor-Led Training (ILT):** Traditional classroom-style training conducted by an instructor.
- **Virtual Instructor-Led Training (VILT):** Training conducted online with a live instructor.
- **E-Learning:** Training delivered through digital platforms, such as online modules, videos, or interactive courses.
- **On-the-Job Training (OJT):** Training that takes place while employees perform their actual job tasks, often with a mentor or supervisor guiding them.

- Blended Learning: A combination of different delivery methods, such as a mix of classroom sessions, online modules, and hands-on activities.
2. Based on Timing and Frequency:
 - New Hire or Orientation Training: Training provided to new employees when they join the organization.
 - Continuous or Ongoing Training: Training that occurs regularly to keep employees updated on new skills, technologies, or processes.
 - Refresher Training: Training provided periodically to reinforce previously acquired knowledge and skills.
 - Just-in-Time Training: Training delivered at the point of need, right before employees perform a specific task or encounter a particular situation.
 3. Based on Purpose or Focus:
 - Technical Training: Training focused on developing technical skills and knowledge specific to the job or industry.
 - Soft Skills Training: Training aimed at enhancing interpersonal and behavioral skills, such as communication, teamwork, leadership, and problem-solving.
 - Managerial or Leadership Training: Training designed for managers or leaders to develop their managerial and leadership skills.
 - Compliance Training: Training to ensure employees understand and comply with legal and regulatory requirements.
 - Sales or Customer Service Training: Training focused on improving sales techniques or customer service skills.
 - Safety Training: Training to promote workplace safety and educate employees about safety procedures and protocols.
 4. Based on Participants:
 - Individual Training: Training provided to individual employees based on their specific needs or development areas.
 - Group or Team Training: Training conducted for a group of employees who share similar training needs or work together as a team.
 5. Based on Location:
 - On-Site Training: Training conducted at the organization's premises or facilities.
 - Off-Site Training: Training held at external locations, such as training centers, conference venues, or off-site retreats.

These classifications help organizations design and implement training programs that align with their objectives and meet the specific needs of their employees. It is important to assess the training requirements and select the most appropriate classification and delivery method to ensure effective and impactful training outcomes.

Other Training Techniques

In addition to the traditional training methods, there are various other training techniques that organizations can utilize to enhance learning and development. Some of these techniques include:

1. **Experiential Learning:** This approach involves hands-on experiences and active participation in real or simulated work situations. Examples include role-playing, simulations, case studies, and group activities. Experiential learning allows participants to apply knowledge and skills in a practical context, fostering a deeper understanding of concepts.
2. **Gamification:** Gamification incorporates game elements, such as competition, challenges, rewards, and leaderboards, into the training process. It makes learning more engaging and enjoyable, motivating participants to actively participate and achieve goals.
3. **Microlearning:** Microlearning breaks down training content into bite-sized, easily digestible modules. These short bursts of learning can be in the form of videos, quizzes, or interactive modules, making it convenient for employees to access and learn on-the-go.
4. **Mobile Learning:** With the increasing use of smartphones and tablets, mobile learning has gained popularity. It involves delivering training content through mobile devices, allowing employees to access learning materials anytime and anywhere.
5. **Mentoring and Coaching:** Mentoring and coaching programs involve pairing employees with experienced mentors or coaches who provide guidance, support, and feedback. This personalized approach facilitates skill development, knowledge transfer, and professional growth.
6. **Job Rotation:** Job rotation involves moving employees across different roles or departments within the organization. This technique helps broaden employees' skills, knowledge, and perspectives, preparing them for diverse job responsibilities and fostering cross-functional collaboration.
7. **Team-Based Training:** Team-based training focuses on developing teamwork and collaboration skills. It involves group activities, problem-solving exercises, and projects that require employees to work together to achieve common goals.
8. **Virtual Reality (VR) and Augmented Reality (AR):** VR and AR technologies create immersive and interactive learning experiences. They can simulate realistic work scenarios, allowing employees to practice skills, make decisions, and learn from virtual environments.
9. **Self-Directed Learning:** Self-directed learning empowers employees to take ownership of their learning journey. It involves providing resources, such as online libraries, e-books, and tutorials, for employees to explore and learn at their own pace.
10. **Cross-Functional Training:** Cross-functional training exposes employees to different areas of the organization, enabling them to gain a broader understanding of the business. It promotes collaboration, communication, and cross-departmental knowledge sharing.

It's important for organizations to consider the specific learning objectives, audience preferences, and available resources when choosing the appropriate training techniques. Combining different methods and creating a blended approach can be effective in catering to diverse learning styles and maximizing the impact of training programs.

In conclusion, training techniques play a crucial role in the learning and development of employees in an IT company. By utilizing a variety of training techniques, organizations can enhance the effectiveness and efficiency of their training programs. Here are some key points to consider:

1. **Incorporate Experiential Learning:** IT companies can leverage experiential learning techniques such as simulations, case studies, and hands-on activities. This allows employees to apply their knowledge in real or simulated IT environments, improving their problem-solving and decision-making skills.
2. **Utilize Gamification:** Gamifying IT training programs can increase engagement and motivation among employees. By incorporating elements such as rewards, badges, and leaderboards, companies can make learning interactive and enjoyable, driving participation and knowledge retention.
3. **Embrace Microlearning:** In the fast-paced IT industry, microlearning can be an effective technique. Breaking down complex IT concepts into bite-sized modules allows employees to learn at their own pace, facilitating better comprehension and retention.
4. **Leverage Mobile Learning:** With the prevalence of mobile devices, providing IT training materials in a mobile-friendly format enables employees to access training resources anytime and anywhere. Mobile learning can include interactive apps, video tutorials, or online assessments, catering to the needs of tech-savvy employees.
5. **Encourage Mentoring and Coaching:** Pairing experienced IT professionals with junior employees can foster knowledge transfer, skill development, and career growth. Mentoring and coaching programs provide personalized guidance and support, helping employees enhance their technical expertise and professional competencies.
6. **Implement Virtual Reality (VR) and Augmented Reality (AR):** IT companies can utilize VR and AR technologies to create immersive training experiences. This can include virtual IT labs, simulated troubleshooting scenarios, or virtual tours of IT infrastructure, allowing employees to gain practical skills in a safe and controlled environment.
7. **Foster Self-Directed Learning:** Promoting self-directed learning empowers IT professionals to take ownership of their learning journey. Providing access to online resources, industry forums, and e-learning platforms enables employees to explore new technologies, stay updated, and continuously develop their IT skills.
8. **Encourage Cross-Functional Training:** IT employees can benefit from cross-functional training opportunities to gain a holistic understanding of various IT domains. This can involve job rotations, cross-team collaboration, or knowledge-sharing sessions, fostering a collaborative and versatile IT workforce.

By incorporating these training techniques, IT companies can ensure that their employees are equipped with the necessary skills, knowledge, and motivation to thrive in a dynamic and ever-evolving industry. Customizing training programs to align with the specific needs and objectives of the IT organization will ultimately contribute to employee growth, improved performance, and the overall success of the company.

In conclusion, training techniques in the IT industry play a vital role in enhancing the skills, knowledge, and performance of employees. The IT sector is characterized by rapid technological advancements and ever-changing industry trends, making continuous

learning and development essential for professionals to stay competitive. By adopting various training techniques, IT companies can create effective and engaging learning experiences for their employees.

Incorporating experiential learning methods, such as simulations and hands-on activities, allows employees to apply their knowledge in practical IT scenarios, improving their problem-solving abilities. Gamification techniques can enhance motivation and engagement by incorporating game elements into training programs. Microlearning and mobile learning enable employees to access relevant IT resources conveniently and learn at their own pace, keeping up with the fast-paced industry. Mentoring and coaching programs facilitate knowledge transfer and career development, while virtual reality and augmented reality technologies offer immersive training experiences.

Encouraging self-directed learning empowers IT professionals to take ownership of their development, enabling them to explore new technologies and stay updated with industry advancements. Cross-functional training fosters collaboration and a broader understanding of different IT domains, contributing to a versatile and adaptable workforce.

By utilizing a combination of these training techniques, IT companies can foster a culture of continuous learning, improve employee performance, and drive innovation within the organization. It is essential for IT companies to align their training programs with the specific needs of their workforce and industry to ensure the development of highly skilled and competent IT professionals.

Conclusion

In conclusion, training techniques in the IT industry are crucial for enhancing employees' skills, knowledge, and performance. By adopting a variety of methods such as experiential learning, gamification, microlearning, mobile learning, mentoring and coaching, virtual reality, augmented reality, self-directed learning, and cross-functional training, IT companies can create effective and engaging learning experiences. These techniques enable employees to apply their knowledge in practical scenarios, enhance motivation and engagement, provide convenient access to resources, foster knowledge transfer and career development, and promote continuous learning. By incorporating these training techniques, IT companies can develop a skilled and adaptable workforce that can thrive in a rapidly evolving industry.

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A COMPARATIVE STUDY ON WORK LIFE BALANCE

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Abstract

A comparative study on work-life balance analyzes and compares practices, policies, and experiences across organizations, industries, or countries. The study aims to understand factors influencing work-life balance and identify best practices for a healthy integration of work and personal life. Key areas of investigation include policies and practices, employee perspectives, cultural factors, organizational culture, industry-specific challenges, and the impact on performance. The findings can guide organizations and policymakers in promoting work-life balance and improving employee well-being. Common policies include flexible working arrangements, paid time off, parental leave, wellness programs, supportive culture, technology enablement, employee engagement, and workload management. Employee perspectives highlight the importance of personal life, flexibility, reduced stress, performance benefits, supportive culture, career growth, and communication. Cultural factors include work ethic, gender roles, support systems, work culture, social expectations, and technology. Organizational culture influences work-life balance through support, flexibility, respect, communication, well-being, managerial practices, and recognition. Industry-specific challenges arise in healthcare, hospitality, retail, manufacturing, IT, finance, and media. Work-life balance positively impacts job satisfaction, stress reduction, focus, creativity, efficiency, and overall productivity.

Introduction

A comparative study on work-life balance would involve analyzing and comparing the work-life balance practices, policies, and experiences across different organizations, industries, or countries. The aim would be to understand the factors influencing work-life balance and identify best practices that promote a healthy integration of work and personal life.

Key areas of investigation in a comparative study on work-life balance could include:

1. **Policies and Practices:** Examining the policies and practices implemented by organizations to support work-life balance. This may include flexible working arrangements, telecommuting options, parental leave policies, employee assistance programs, and wellness initiatives.
2. **Employee Perspectives:** Gathering data through surveys, interviews, or focus groups to understand employees' perceptions and experiences of work-life balance. This can provide insights into the effectiveness of existing policies and practices, as well as the impact on job satisfaction, stress levels, and overall well-being.
3. **Cultural and Societal Factors:** Considering cultural and societal factors that influence work-life balance in different regions or countries. This may include societal norms, gender roles, support systems for working parents, and the availability of childcare facilities.
4. **Organizational Culture:** Assessing the role of organizational culture in promoting work-life balance. This involves examining factors such as leadership support, work-hour

expectations, workload management, and the extent to which work-life balance is valued and encouraged within the organization.

5. **Industry-Specific Challenges:** Analyzing industry-specific challenges that may affect work-life balance, such as high workload demands, tight deadlines, or irregular working hours. Comparing how different industries address these challenges and implement strategies to support work-life balance can provide valuable insights.

6. **Impact on Performance and Productivity:** Investigating the relationship between work-life balance and employee performance and productivity. This may involve analyzing data on absenteeism, turnover rates, job satisfaction, and business outcomes to understand the potential benefits of work-life balance practices.

The findings from a comparative study on work-life balance can help organizations and policymakers identify effective strategies to enhance work-life balance, improve employee well-being, and foster a more sustainable and productive work environment. It can also highlight areas where further support or intervention may be needed to address work-life balance challenges.

Investigation

Work-life balance policies and practices vary across organizations, industries, and countries. However, here are some common policies and practices that organizations may implement to support work-life balance:

1. **Flexible Working Arrangements:** Organizations may offer flexible work options such as flextime, compressed workweeks, or remote work arrangements. This allows employees to have greater control over their schedules and balance their work and personal commitments more effectively.

2. **Paid Time Off:** Providing generous paid time off benefits, including vacation days, personal days, and holidays, allows employees to take time off for personal and family-related activities without sacrificing their pay.

3. **Parental Leave Policies:** Organizations may offer parental leave policies that provide time off and job protection for new parents, including maternity leave, paternity leave, and adoption leave. These policies help employees balance their work responsibilities with the demands of raising a family.

4. **Wellness Programs:** Implementing wellness programs that promote physical, mental, and emotional well-being can contribute to work-life balance. This may include initiatives such as employee assistance programs, access to fitness facilities, stress management workshops, or mindfulness programs.

5. **Supportive Culture and Leadership:** Fostering a culture that values work-life balance and has supportive leadership is crucial. This includes encouraging managers to lead by example, promoting open communication about work-life challenges, and providing resources and support to employees in balancing their responsibilities.

6. **Technology Enablement:** Leveraging technology to support work-life balance, such as providing collaboration tools, mobile access to work systems, and flexible work arrangements facilitated by technology, can help employees manage their work effectively while maintaining personal commitments.

7. **Employee Engagement and Recognition:** Recognizing and rewarding employees for their contributions and achievements can contribute to work-life balance. Creating a positive work environment that promotes a healthy work-life integration and acknowledges employees' efforts can enhance job satisfaction and engagement.

8. **Workload Management:** Ensuring workload distribution is fair and manageable is crucial for work-life balance. Organizations can implement strategies such as workload assessments, task prioritization, and resource allocation to prevent excessive workloads that may impede work-life balance.

It's important to note that the specific policies and practices related to work-life balance will vary depending on the organization's size, industry, and cultural context. Organizations should regularly review and assess the effectiveness of their policies and practices to meet the evolving needs and expectations of their employees.

Employee perspectives on work-life balance can vary depending on individual circumstances, personal preferences, and the organizational culture. Here are some common perspectives that employees may have regarding work-life balance:

1. **Importance of Personal Life:** Employees value the ability to spend quality time with family, pursue hobbies, engage in social activities, and take care of personal well-being. They seek a work-life balance that allows them to prioritize and maintain a fulfilling personal life alongside their professional commitments.

2. **Flexibility:** Many employees appreciate flexible working arrangements that enable them to have control over their schedules. This could involve flexible start and end times, the option to work remotely, or compressed workweeks. Flexibility helps employees accommodate personal obligations, reduce commuting time, and achieve a better work-life integration.

3. **Reduced Stress and Burnout:** Employees recognize that maintaining work-life balance helps prevent excessive stress and burnout. They believe that a balanced approach to work reduces the risk of physical and mental health issues, improves job satisfaction, and enhances overall well-being.

4. **Performance and Productivity:** Employees understand that work-life balance positively impacts their performance and productivity. When they have time for relaxation, rest, and personal activities, they come to work refreshed and motivated, leading to improved focus, creativity, and efficiency in their job responsibilities.

5. **Supportive Organizational Culture:** Employees value a supportive organizational culture that promotes work-life balance. They appreciate managers and colleagues who understand their personal commitments, respect boundaries, and encourage a healthy work-life integration. An organization that values work-life balance creates a positive work environment and fosters employee loyalty and engagement.

6. **Career Growth and Development:** Employees believe that work-life balance should not hinder their career growth and development opportunities. They seek organizations that provide learning and advancement opportunities while still allowing them to maintain a healthy work-life balance. Balancing personal and professional aspirations is essential for long-term career satisfaction.

7. **Communication and Feedback:** Employees appreciate open and transparent communication about work-life balance policies, resources, and support available within the organization. They value feedback channels that allow them to express their concerns, seek guidance, and suggest improvements related to work-life balance initiatives.

It's important for organizations to understand and address these perspectives to create a work environment that supports work-life balance. Taking employee feedback into consideration, offering flexibility, providing resources for well-being, and fostering a culture that values work-life balance can contribute to higher employee satisfaction, engagement, and retention.

Cultural and societal factors play a significant role in shaping work-life balance perspectives and practices. Different cultures and societies have varying norms, values, and expectations regarding work, family, and personal life. Here are some cultural and societal factors that influence work-life balance:

1. **Work Ethic and Expectations:** Cultural norms around work ethic and expectations can impact work-life balance. In some cultures, there may be a strong emphasis on long working hours, dedication to work, and prioritizing professional commitments over personal life. In contrast, other cultures may prioritize work-life balance and encourage individuals to maintain a healthy integration of work and personal life.

2. **Gender Roles and Family Responsibilities:** Gender roles and family responsibilities can significantly affect work-life balance. In cultures where traditional gender roles are prevalent, women may face greater expectations and responsibilities in managing household and caregiving tasks, which can impact their ability to achieve work-life balance. Societal support for gender equality and shared family responsibilities can promote better work-life balance for both men and women.

3. **Support Systems for Working Parents:** The availability and accessibility of support systems for working parents, such as affordable and quality childcare facilities, parental leave policies, and flexible work arrangements, vary across cultures. Cultures that prioritize family support and provide infrastructure and policies to assist working parents can contribute to better work-life balance for families.

4. **Work Culture and Norms:** The overall work culture and norms within a society can influence work-life balance. Cultures that value work-life balance and prioritize employee well-being may have policies and practices in place to support it. Conversely, cultures that emphasize work intensity, long hours, and limited vacation time may make it more challenging to achieve work-life balance.

5. **Social Expectations and Stigma:** Social expectations and stigma related to work-life balance can influence individuals' choices and behaviors. In some cultures, there may be a perception that prioritizing personal life over work is seen as uncommitted or unprofessional. Such social pressures can create barriers to achieving work-life balance and impact individuals' well-being.

6. **Technology and Connectivity:** Technological advancements and connectivity have transformed work-life balance dynamics. Cultures that heavily rely on technology for work communication and expect constant availability may face challenges in setting boundaries

and disconnecting from work. On the other hand, cultures that emphasize the importance of unplugging and respecting personal time may have healthier work-life balance practices.

Understanding the cultural and societal factors at play is essential for organizations and policymakers to develop work-life balance initiatives that align with the specific needs and expectations of individuals within a given culture. Promoting awareness, challenging cultural norms that hinder work-life balance, and providing supportive policies and resources can help create a conducive environment for achieving work-life balance across diverse cultures.

Organizational culture plays a crucial role in shaping work-life balance within a company. It encompasses the values, beliefs, norms, and behaviors that guide how work is performed and how employees are treated. Here are some key aspects of organizational culture that can influence work-life balance:

1. **Support for Work-Life Balance:** An organization with a positive work-life balance culture demonstrates a commitment to supporting employees in achieving a healthy integration of work and personal life. This includes implementing policies, practices, and resources that enable employees to manage their responsibilities effectively.
2. **Flexible Work Environment:** A work culture that promotes flexibility empowers employees to have control over their schedules and work arrangements. This can involve offering flexible working hours, remote work options, and accommodating individual needs and preferences. Embracing flexibility allows employees to better manage their personal commitments while meeting work requirements.
3. **Respect for Personal Time:** In an organization with a work-life balance culture, there is a recognition and respect for employees' personal time. This means that employees are encouraged to take breaks, vacations, and time off to recharge and attend to personal matters without facing guilt or negative consequences. Leaders and colleagues play a role in fostering this respect by modeling and supporting the practice of work-life balance.
4. **Open Communication:** Effective communication is vital in establishing a work culture that supports work-life balance. When there is open and transparent communication between management and employees, expectations, priorities, and challenges related to work-life balance can be discussed. Encouraging dialogue allows for the identification of potential improvements and the development of strategies to address work-life balance concerns.
5. **Well-being and Employee Support:** Organizations that prioritize employee well-being and provide support services contribute to a positive work-life balance culture. This can involve offering wellness programs, employee assistance programs, access to counseling services, and resources to promote mental and physical health. Supporting employees in managing their well-being fosters a healthier work-life balance.
6. **Managerial Practices:** The behavior and practices of managers have a significant impact on work-life balance. Managers who lead by example, demonstrate flexibility, and support their team members in achieving work-life balance create a culture that values and promotes it. Effective managers also prioritize workload distribution, provide clear expectations, and encourage work-life integration.

7. Recognition and Rewards: Recognizing and rewarding employees for their achievements and contributions, including maintaining work-life balance, reinforces the value placed on work-life balance within the organizational culture. Acknowledging employees' efforts to balance their personal and professional lives fosters a positive work environment and motivates employees to sustain their work-life balance practices.

Creating and nurturing an organizational culture that supports work-life balance requires a proactive approach from leaders and HR departments. By aligning policies, practices, and behaviors with the goal of work-life balance, organizations can enhance employee well-being, job satisfaction, and productivity while promoting a positive work environment.

Work-life balance challenges can vary across industries due to the nature of work, work demands, and industry-specific factors. Here are some industry-specific challenges that may affect work-life balance:

1. Healthcare and Emergency Services: Industries such as healthcare and emergency services often involve shift work, long hours, and irregular schedules. Healthcare professionals, doctors, nurses, and emergency responders may face challenges in maintaining a healthy work-life balance due to the demanding nature of their work and the need for round-the-clock availability.
2. Hospitality and Tourism: The hospitality and tourism industry often operates in peak seasons and involves irregular working hours, including evenings, weekends, and holidays. Employees in this industry, such as hotel staff, restaurant workers, and tour guides, may face difficulties in achieving work-life balance due to the high-pressure, customer-centric environment and the need to work during traditionally busy times.
3. Retail and Sales: Retail and sales industries often have high-volume workloads during peak periods, such as holidays and sales seasons. Retail employees and sales professionals may experience challenges in maintaining work-life balance due to long working hours, weekend shifts, and the pressure to meet sales targets.
4. Manufacturing and Production: Industries involved in manufacturing and production, such as automotive, electronics, or food processing, often operate on strict production schedules and may require employees to work extended hours or shifts. This can lead to work-life balance challenges as employees may have limited control over their schedules and face increased physical demands.
5. Information Technology (IT): The IT industry is known for its fast-paced, high-pressure work environment. IT professionals often face long working hours, tight deadlines, and the expectation of being available outside regular working hours for system maintenance or critical incidents. Balancing work commitments with personal life can be a challenge in the IT industry.
6. Finance and Consulting: Industries like finance and consulting may involve high workloads, tight deadlines, and significant client demands. Professionals in these industries may need to work long hours, travel frequently, and face high levels of stress, which can impact work-life balance.
7. Media and Entertainment: The media and entertainment industry, including film, television, and journalism, often requires irregular and long working hours. Professionals

in these fields may face work-life balance challenges due to demanding production schedules, tight deadlines, and the need to be available during events or breaking news situations.

It's important to note that these challenges may vary within each industry and individual organizations. Employers can play a crucial role in mitigating these challenges by implementing supportive policies and practices that prioritize work-life balance, offering flexible work arrangements, and providing resources for employee well-being.

Work-life balance has a significant impact on an individual's performance and productivity in the workplace. Here are some key ways in which work-life balance can influence performance:

1. **Increased Job Satisfaction:** When employees have a healthy work-life balance, they are more likely to experience higher job satisfaction. They feel a sense of fulfillment and contentment in both their personal and professional lives. This, in turn, leads to increased motivation, engagement, and commitment to their work.
2. **Reduced Stress and Burnout:** Maintaining a proper work-life balance helps individuals manage stress and prevent burnout. When employees have time for personal activities, hobbies, and relationships outside of work, they can recharge and rejuvenate. This results in improved mental well-being, lower levels of stress, and a decreased risk of burnout, which can have a positive impact on productivity.
3. **Enhanced Focus and Concentration:** Work-life balance allows employees to allocate their time and energy effectively between work and personal life. When individuals have the opportunity to rest, relax, and engage in activities they enjoy outside of work, they can return to work with increased focus, concentration, and mental clarity. This leads to improved productivity and the ability to perform tasks more efficiently.
4. **Improved Work-Life Integration:** A healthy work-life balance enables individuals to effectively integrate their work and personal responsibilities. When employees have the flexibility to manage their time and meet personal obligations, they experience reduced conflicts between work and personal life. This balance enhances overall satisfaction, reduces stress, and promotes better overall performance.
5. **Increased Creativity and Innovation:** Engaging in activities outside of work stimulates creativity and promotes innovative thinking. Having time for hobbies, interests, and personal pursuits allows individuals to broaden their perspectives, gain new experiences, and bring fresh ideas to their work. Work-life balance nurtures creativity, which can lead to improved problem-solving, innovation, and productivity in the workplace.
6. **Enhanced Physical and Mental Well-being:** Work-life balance supports individuals in taking care of their physical and mental health. When employees have time for exercise, relaxation, and self-care, they experience improved well-being. Physical health directly impacts energy levels, stamina, and the ability to perform at optimal levels. Additionally, positive mental health promotes cognitive functioning, decision-making, and overall work performance.
7. **Better Work Relationships:** Work-life balance contributes to positive work relationships and a supportive work environment. When individuals have time for personal relationships and activities, they are more likely to establish and maintain healthy

relationships with colleagues and supervisors. Strong work relationships foster collaboration, teamwork, and a positive work atmosphere, leading to increased productivity and job satisfaction.

Overall, work-life balance is essential for employee performance and productivity. When individuals can effectively manage their work and personal lives, they experience greater job satisfaction, reduced stress, improved focus, enhanced creativity, and better overall well-being. Employers who prioritize work-life balance initiatives can expect to see positive impacts on employee performance and overall organizational productivity.

In conclusion, work-life balance plays a vital role in influencing employee performance and productivity in the workplace. A healthy balance between work and personal life leads to increased job satisfaction, reduced stress and burnout, enhanced focus and concentration, improved work-life integration, increased creativity and innovation, better physical and mental well-being, and stronger work relationships. When employees have the opportunity to manage their time effectively and meet their personal obligations, they are more motivated, engaged, and committed to their work. Employers who recognize the importance of work-life balance and implement supportive policies and practices .

A BRIEF INTRODUCTION ABOUT CULTIVATION OF BRUSSELS SPROUT IN PUNJAB REGION

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BRUSSEL SPROUT

Brussels sprouts are a type of vegetable that belongs to the Brassicaceae family, which includes cabbage, kale, and broccoli. They are named after the city of Brussels in Belgium, where they were popularized in the 16th century.

Brussels sprouts are small, leafy green buds that grow on stalks. They resemble miniature cabbages and have a mild, slightly bitter taste. They are often cooked by boiling, steaming, roasting, or sautéing. Brussels sprouts can be enjoyed as a side dish, added to salads, or incorporated into various recipes.

These vegetables are known for their nutritional value. They are low in calories and fat while being rich in fiber, vitamins (especially vitamin K and vitamin C), and minerals (such as potassium and folate). Brussels sprouts also contain antioxidants and phytochemicals that have been associated with various health benefits, including reducing inflammation and supporting cardiovascular health.

While some people may find Brussels sprouts to be an acquired taste due to their slightly bitter flavor, they can be quite delicious when prepared well. Cooking methods like roasting or sautéing can help bring out their natural sweetness and enhance their flavor. Adding complementary ingredients such as bacon, garlic, or Parmesan cheese can also make them more appealing to those who are not fond of their taste.

Overall, Brussels sprouts are a nutritious and versatile vegetable that can be enjoyed in a variety of dishes, providing an array of health benefits.

ORIGIN

The origin of Brussels sprouts can be traced back to ancient Rome, although they were not the same as the Brussels sprouts we know today. The modern Brussels sprout variety was

likely developed in what is now Belgium, specifically around the city of Brussels, in the 16th century.

Brussels sprouts were popularized in the region during the reign of Emperor Charles the Fifth, who ruled over the Holy Roman Empire, which included the Low Countries (modern-day Belgium and the Netherlands). The vegetable was cultivated in the area for its taste and ability to thrive in the cool climate.

Over time, Brussels sprouts gained popularity beyond Belgium and spread to other parts of Europe and eventually to North America. Today, they are cultivated in many countries worldwide, including the United States, the United Kingdom, the Netherlands, and China.

The name "Brussels sprouts" comes from the association of the vegetable with the city of Brussels, where they became well-known and were extensively grown. The term "sprouts" refers to the small buds that grow along the stem of the plant.

Although Brussels sprouts have been around for centuries, they have gained more attention in recent years as people rediscover their nutritional value and culinary potential.

NUTRITIVE VALUE

Brussels sprouts are highly nutritious and offer a range of beneficial nutrients. Here is an overview of their nutritive value per 100 grams of cooked Brussels sprouts:

- Calories: Approximately 43 calories
- Carbohydrates: Around 9 grams
- Fiber: About 3.8 grams
- Protein: Roughly 3.5 grams
- Fat: Less than 0.5 grams
- Vitamin C: Provides over 85 milligrams, which is more than the recommended daily intake for adults.
- Vitamin K: Contains around 140 micrograms, providing well over 100% of the recommended daily intake for adults.
- Vitamin A: Provides small amounts of beta-carotene, which the body can convert into vitamin A.
- Folate: Offers about 61 micrograms, contributing to the body's folate requirements.
- Potassium: Contains approximately 365 milligrams, making them a good source of this mineral.

- Iron: Provides around 1.4 milligrams, contributing to the body's iron needs.
- Calcium: Contains about 42 milligrams.

Additionally, Brussels sprouts contain various antioxidants and phytochemicals, including glucosinolates, which are sulfur-containing compounds associated with potential health benefits, such as anti-inflammatory and cancer-fighting properties.

The high fiber content of Brussels sprouts aids digestion and helps promote feelings of fullness. They are also low in calories and fat, making them a healthy addition to a balanced diet.

It's worth noting that these values are approximate and can vary depending on the cooking method and the specific variety of Brussels sprouts.

VARIETIES

There are several varieties of Brussels sprouts, each with its own unique characteristics. Here are a few popular varieties:

1. Long Island Improved: This is one of the most common varieties, known for its reliable growth and good yields. The plants produce medium-sized, round sprouts that are tightly packed and have a slightly sweet flavor.
2. Jade Cross: This variety is known for its early maturity and uniform, medium-sized sprouts. The plants are vigorous and have good disease resistance. Jade Cross Brussels sprouts have a milder taste compared to some other varieties.
3. Churchill: Churchill Brussels sprouts are known for their large, firm, and flavorful sprouts. The plants have good disease resistance and can produce a high yield. This variety is favored by many gardeners and commercial growers.
4. Diablo: Diablo Brussels sprouts are distinguished by their deep red-purple color. The sprouts are medium-sized and have a slightly milder flavor compared to green varieties. This variety adds a vibrant touch to dishes and is also rich in antioxidants.
5. Falstaff: Falstaff is another red-colored variety of Brussels sprouts. It produces small to medium-sized sprouts with a deep red color. The flavor is slightly sweeter compared to green varieties, and the color intensifies when cooked.
6. Bubbles: Bubbles Brussels sprouts are a relatively new variety known for their mild and nutty flavor. The plants produce small to medium-sized sprouts that are tightly packed. Bubbles is favored for its excellent flavor and tender texture.

These are just a few examples of Brussels sprout varieties, and there are many more available, each with its own unique characteristics in terms of taste, size, color, and maturity. Gardeners and farmers often choose varieties based on their specific preferences and growing conditions.

CULTIVATION PRACTICES

Cultivating Brussels sprouts requires some specific practices to ensure healthy growth and a bountiful harvest. Here are some key cultivation practices for Brussels sprouts:

1. **Climate and Timing:** Brussels sprouts thrive in cool climates and are typically grown as a fall or winter crop. They require a long growing season, usually around 90 to 100 days from transplanting to harvest. Start seeds indoors or purchase seedlings from a nursery 4-6 weeks before the last frost date in your area.
2. **Soil Preparation:** Choose a well-drained soil with a pH between 6.0 and 7.5. Amend the soil with organic matter such as compost or well-rotted manure to improve fertility and drainage. Brussels sprouts prefer a fertile soil, so adding a balanced organic fertilizer before planting is beneficial.
3. **Planting:** Transplant the seedlings into the garden when they are 4-6 weeks old and have developed several true leaves. Space the plants about 18-24 inches apart, leaving enough room for the plants to grow and spread. Plant them at the same depth they were growing in their containers.
4. **Watering:** Keep the soil consistently moist, but not waterlogged. Brussels sprouts require regular watering, especially during dry periods. Mulching around the plants can help retain soil moisture and reduce weed growth.
5. **Fertilization:** Brussels sprouts are heavy feeders, so it's important to provide them with regular fertilization. Side-dress the plants with a balanced organic fertilizer or a nitrogen-rich fertilizer every 4-6 weeks throughout the growing season.
6. **Supporting the Plants:** Brussels sprouts can grow tall and become top-heavy, so providing support is beneficial. Stake the plants or use cages to prevent them from falling over or getting damaged by wind.
7. **Pest and Disease Management:** Brussels sprouts are susceptible to various pests and diseases, including aphids, cabbage worms, and clubroot. Monitor the plants regularly and take appropriate measures to control pests, such as handpicking or using organic pest control methods. Crop rotation and practicing good garden hygiene can help prevent disease buildup.
8. **Harvesting:** Harvest Brussels sprouts when the sprouts are firm, green, and about 1-2 inches in diameter. Start harvesting from the bottom of the plant, removing the lower

sprouts first and allowing the upper ones to continue maturing. The sprouts at the top will mature gradually, providing a longer harvest period.

By following these cultivation practices, you can cultivate healthy Brussels sprout plants and enjoy a successful harvest of tasty sprouts.

DISEASES AND PEST

Brussels sprouts are susceptible to various diseases and pests that can affect their growth and yield. Here are some common diseases and pests that can impact Brussels sprouts and strategies for managing them:

Diseases:

1. Clubroot (*Plasmodiophora brassicae*): Clubroot is a soil-borne disease that causes swelling and deformation of the roots. Infected plants may exhibit stunted growth and yellowing. To manage clubroot, practice crop rotation, avoid planting in infected areas, and choose resistant varieties if available.
2. Blackleg (*Leptosphaeria maculans*): Blackleg is a fungal disease that affects the stems, causing dark lesions. Infected plants may wilt, and sprouts may fail to develop properly. Crop rotation, sanitation, and choosing disease-resistant varieties can help control blackleg.
3. Alternaria Leaf Spot (*Alternaria* spp.): Alternaria leaf spot causes small, dark spots on the leaves, which may enlarge and become surrounded by a yellow halo. Remove and destroy infected leaves and practice good garden hygiene to minimize its spread.

Pests:

1. Cabbage Worms (*Pieris rapae*, *Pieris brassicae*): Cabbage worms are the larval stage of certain butterfly species. They feed on the leaves, causing visible damage. Handpicking, using floating row covers, and applying organic insecticides like *Bacillus thuringiensis* (Bt) can help control cabbage worms.
2. Aphids (Various species): Aphids are small, soft-bodied insects that cluster on the undersides of leaves, sucking sap and causing distortion and stunting. Use strong water sprays to dislodge aphids, encourage beneficial insects like ladybugs, and apply insecticidal soap if infestation persists.
3. Flea Beetles (*Phyllotreta* spp.): Flea beetles chew small holes in the leaves, resulting in a characteristic "shot-hole" appearance. Floating row covers, crop rotation, and using insecticides labeled for flea beetles can be effective in managing them.

Understanding Hair and Fur Simulation

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Introduction: Hair and fur simulation is a crucial aspect of creating realistic and visually compelling characters and creatures in computer graphics. Whether you're working on animated films, video games, or visual effects, understanding the principles and techniques behind hair and fur simulation is essential. In this comprehensive guide, we will delve into the intricacies of hair and fur simulation, exploring the underlying physics, simulation algorithms, and industry-standard tools used to achieve lifelike results. Let's embark on this journey and unravel the secrets of hair and fur simulation!

1. The Importance of Hair and Fur Simulation:

1.1. Visual Realism and Character Authenticity:

- Hair and fur play a significant role in character design, adding realism, personality, and visual appeal. The way hair and fur interact with light, move, and respond to environmental factors can greatly enhance the believability and authenticity of characters. A well-executed hair and fur simulation can elevate the quality of your work and immerse the audience in the virtual world you create.

1.2. Artistic Expression and Styling:

- Hair and fur simulation provides artists with a powerful tool for artistic expression. It allows for creative styling, shaping, and manipulation of hair and fur to achieve specific looks and aesthetics. Whether it's a flowing mane, a wild beast's fur, or a character's unique hairstyle, the simulation process enables artists to bring their creative visions to life.

2. Understanding Hair and Fur Physics:

2.1. Hair and Fur Structure:

- Hair and fur are composed of thousands or even millions of individual strands. Each strand consists of a root, shaft, and tip. Understanding the structure of hair and fur is crucial for simulating their behavior accurately. The root of each strand is anchored

to the surface of the character or creature, while the shaft extends outward, and the tip defines the end point of the strand.

2.2. Physical Properties:

- Hair and fur strands possess physical properties such as stiffness, elasticity, and resistance to bending and stretching. These properties influence how the strands move and react to external forces. By understanding and adjusting these properties, you can control the behavior and appearance of simulated hair and fur.

3. Simulation Techniques for Hair and Fur:

3.1. Mass-Spring System:

- The mass-spring system is a widely used technique for simulating hair and fur. It models each strand as a series of connected masses (vertices) and springs (edges). The masses represent the positions of individual points along the strand, while the springs define the connections between adjacent masses. By applying forces and constraints to the masses and springs, the simulation computes the movement and deformation of the hair or fur strands.

3.2. Collision Detection and Response:

- Hair and fur strands interact with objects and characters in the scene, requiring accurate collision detection and response. Techniques such as continuous collision detection, distance fields, and geometric proxies are employed to detect collisions and prevent hair or fur strands from penetrating surfaces. Collision response algorithms ensure that the strands react realistically to collisions, bouncing off surfaces or being affected by friction.

3.3. Dynamics and Constraints:

- Dynamics and constraints are fundamental components of hair and fur simulation. Dynamics govern the overall movement and behavior of the strands, while constraints maintain specific relationships between strands, such as preserving their length or preventing self-intersections. By carefully defining and configuring dynamics and constraints, you can achieve natural-looking simulations that adhere to the physical laws governing hair and fur.

4. Industry-Standard Hair and Fur Simulation Tools:

4.1. Autodesk Maya's Hair System:

- Maya's Hair System is a widely used tool for hair and fur simulation. It provides a comprehensive set of features for grooming, styling, and simulating hair and fur. With intuitive controls, interactive feedback, and robust simulation capabilities, Maya's Hair System offers artists a powerful toolset for achieving realistic and visually appealing results.

4.2. Houdini's Hair and Fur Tools:

- Houdini, a popular software used in visual effects and animation, offers a range of sophisticated tools for hair and fur simulation. Its procedural nature and extensive control over simulation parameters make it a preferred choice for complex hair and fur setups. Houdini provides a node-based workflow that allows artists to build intricate hair and fur simulations, customize behavior, and incorporate advanced effects.

5. Tips for Achieving Realistic Hair and Fur Simulation:

5.1. Research and Reference:

- Study real-world hair and fur, observe their movement, and analyze their physical properties. Collect reference images and videos to understand the diverse range of hair and fur characteristics. This research will inform your simulation decisions and enable you to achieve more accurate and realistic results.

5.2. Iterative Refinement:

- Hair and fur simulation often require iterative refinement to achieve the desired look and behavior. Start with basic simulations, gradually adding complexity and fine-tuning parameters. Regularly review and analyze the results, making adjustments to achieve the desired visual outcome.

5.3. Consider Performance:

- Hair and fur simulations can be computationally intensive. Optimize your simulation by adjusting parameters, reducing the number of strands, or employing level-of-detail techniques. Balancing visual fidelity with performance considerations ensures efficient simulations that can be rendered and animated in a timely manner.

Conclusion: Mastering Hair and Fur Simulation Hair and fur simulation is a challenging but rewarding aspect of computer graphics. By understanding the underlying physics, mastering simulation techniques, and utilizing industry-standard tools, you can create lifelike hair and fur that enhance the realism and authenticity of your characters and creatures. Embrace the artistry and technicality of hair and fur simulation, and let your imagination run wild as you bring virtual beings to life with stunning and believable hair and fur.

Reference:

1. "Digital Hair and Fur Techniques" by Kurt Boutilier - This book provides a comprehensive overview of hair and fur simulation techniques. It covers topics such as modeling, shading, dynamics, and rendering of hair and fur. It also includes practical examples and case studies to help you understand the implementation of these techniques in different software.
2. Online tutorials and courses - Websites like Pluralsight, Udemy, and CGSociety offer online courses and tutorials specifically dedicated to hair and fur simulation. These resources provide step-by-step instructions, demonstrations, and exercises for creating realistic hair and fur effects using various software packages.
3. Animation software documentation - Referring to the official documentation and tutorials provided by animation software such as Autodesk Maya, Houdini, or Blender can provide valuable guidance on hair and fur simulation tools and features. These resources explain the concepts of hair and fur dynamics, grooming, and rendering settings.
4. Research papers and conference proceedings - Exploring research papers and conference proceedings from computer graphics and animation conferences, such as SIGGRAPH or Eurographics, can provide insights into the latest advancements in hair and fur simulation algorithms and techniques. Platforms like ACM Digital Library or IEEE Xplore provide access to these research papers.
5. Industry forums and communities - Engaging with online forums and communities dedicated to computer graphics and animation, such as CGTalk or Reddit's r/computergraphics, can provide opportunities to connect with experts and discuss

hair and fur simulation techniques. These platforms allow you to ask questions, share knowledge, and learn from the experiences of other professionals in the field.

6. Software-specific tutorials and resources - Many animation software packages have their own dedicated communities and resources. Exploring forums, official websites

Understanding Substance Painter

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Abstract

Welcome to the world of Substance Painter! In this brief guide, we'll introduce you to the powerful and versatile software that will take your texturing and material creation to new heights. Whether you're a beginner or an experienced artist, Substance Painter offers a user-friendly interface and a wide range of features that will allow you to bring your 3D models to life with stunning textures and realistic materials. So, let's dive in and explore the wonders of Substance Painter together!

1. Getting Started: An Artist's Playground

- Substance Painter is a 3D painting software that allows you to create and apply textures and materials directly onto your 3D models. It provides an intuitive and artist-friendly interface that lets you focus on unleashing your creativity.
- With Substance Painter, you have a virtual canvas at your fingertips, where you can paint, layer, and experiment with different textures, colors, and effects to achieve the desired look for your models.

2. Understanding the Basics: Layers, Channels, and Materials

- Substance Painter works with a layer-based system, similar to image editing software. You can create and stack different layers to build up the textures and materials of your model.
- Each layer contains various channels, such as Base Color, Roughness, Metallic, Normal, and more. These channels define different properties of the material and allow for precise control over the look and feel of your textures.
- By combining layers, adjusting settings, and leveraging the extensive library of predefined materials, you can create stunning and realistic textures for your models.

3. Unleashing Your Creativity: Painting and Procedural Texturing

- Substance Painter offers a range of painting tools that enable you to create intricate details and realistic effects on your models. From brushes and stamps to particle

systems and projection tools, you have a vast arsenal of options to bring your vision to life.

- Additionally, Substance Painter empowers you to use procedural textures, which are generated based on algorithms and patterns. These textures can be applied to your models, providing a quick and efficient way to add complex details and patterns without manual painting.

4. Texture Baking: Bringing Your Models to Life

- Substance Painter excels in the process of texture baking, where you transfer high-resolution details from a high-poly model to a low-poly model. This technique allows you to maintain visual fidelity while optimizing performance.
- By baking textures such as ambient occlusion, curvature, and normal maps, you can enhance the realism and depth of your models. Substance Painter provides powerful baking tools and customizable settings to ensure precise and high-quality results.

5. Exporting and Integration: Seamless Workflow

- Once you're satisfied with your textures and materials, Substance Painter makes it easy to export and integrate your work into other 3D software or game engines. You can export your textures in various file formats and utilize them in your preferred workflow.
- Substance Painter also offers integrations with popular software such as Autodesk Maya, Unity, Unreal Engine, and more. This seamless integration streamlines your workflow, allowing you to focus on creating stunning visuals without the hassle of complicated file conversions.

- **Advanced Techniques: Taking Your Texturing to the Next Level**
- Substance Painter offers a range of advanced techniques that allow you to take your texturing to new heights. Let's explore a few of these techniques:

6.1. **Material Blending:** Substance Painter allows you to blend multiple materials seamlessly on your models. With the powerful mask system, you can create smooth transitions between different materials, adding realism and variety to your textures.

6.2. Procedural Masking: In addition to painting directly on your models, Substance Painter offers powerful procedural masking capabilities. You can use generators, filters, and procedural noises to create intricate masks that control the distribution of textures and materials, giving you greater control over the final look.

6.3. Smart Materials and Smart Masks: Substance Painter features a vast library of pre-made Smart Materials, which are ready-to-use material presets created by industry professionals. These materials can be applied to your models with a single click, saving you time and effort. Smart Masks allow you to apply these materials selectively, giving you precise control over where they are applied.

6.4. Custom Shaders: Substance Painter allows you to create and customize your own shaders, giving you complete control over the look and behavior of your materials. You can adjust parameters such as glossiness, transparency, and reflectivity, allowing you to achieve specific material effects and surface properties.

7. Workflow Tips and Tricks

- To make the most out of Substance Painter, here are some helpful workflow tips and tricks:

7.1. Organize Your Project: Keep your project organized by using folders and groups to manage your textures, materials, and layers. This will make it easier to navigate and make changes to specific elements of your project.

7.2. Utilize Texture Sets: If you're working on a complex model with multiple materials, consider using texture sets. Texture sets allow you to assign different materials to different parts of your model, making it easier to manage and modify specific sections without affecting the entire model.

7.3. Take Advantage of Substance Source: Substance Painter integrates with Substance Source, a vast library of high-quality materials and textures. Browse through the library to find inspiration or download ready-made materials to enhance your projects.

7.4. Experiment with Substance Designer: Substance Designer is a complementary software to Substance Painter that allows you to create custom procedural textures. Consider exploring Substance Designer to expand your texturing capabilities and create unique materials.

8. Texturing for Different Industries: Adapting to Specific Requirements

- Substance Painter is widely used in various industries, including gaming, film, animation, product design, and more. Understanding how to adapt your texturing workflow to specific industry requirements can greatly enhance your versatility as an artist.

8.1. Gaming Industry: When creating textures for games, optimization is crucial. Pay attention to texture size and compression formats to ensure optimal performance without sacrificing visual quality. Additionally, consider creating variations of textures for different levels of detail (LODs) to maintain consistency across different viewing distances.

8.2. Film and Animation: Texturing for film and animation often requires high-resolution and photorealistic textures. Focus on capturing intricate details, such as skin pores, fabric patterns, and surface imperfections, to enhance realism. Substance Painter's high-quality rendering capabilities and support for advanced materials like subsurface scattering can help achieve lifelike results.

8.3. Product Design: Texturing for product design involves creating realistic materials and finishes for objects like automobiles, furniture, or consumer goods. Pay attention to accurate reflections, metallic surfaces, and different types of finishes like glossy, matte, or rough. Substance Painter's material presets and customizable shaders can assist in achieving accurate representation.

9. Collaboration and Asset Sharing

- Substance Painter offers features for seamless collaboration and asset sharing, allowing artists to work together efficiently. These features enable multiple artists to contribute to a project, share textures, and maintain consistent quality across different assets.

9.1. Texture Sets and UDIMs: Texture sets and UDIMs help organize and distribute textures across different objects or mesh sections. By dividing your model into logical parts and assigning separate texture spaces, you can collaborate effectively and exchange individual textures without affecting the entire project.

9.2. Project Sharing: Substance Painter allows you to share projects with other artists, making it easier to collaborate on large-scale projects. You can package your textures, materials, and project files, ensuring that all the necessary assets are shared seamlessly.

9.3. Version Control: Substance Painter supports version control systems like Git, enabling artists to track changes, revert to previous versions, and collaborate more efficiently. This

ensures that everyone working on the project stays in sync and can easily manage iterations and updates.

10. Staying Updated and Growing as an Artist

- The world of texturing and material creation is constantly evolving. To stay ahead and continue growing as an artist, consider the following:

10.1. Community and Online Resources: Engage with the Substance Painter community by participating in forums, attending workshops, and following tutorials and blogs. These resources provide valuable insights, tips, and inspiration from other artists and industry professionals.

10.2. Continued Learning: Substance Painter regularly releases updates with new features and improvements. Stay updated with the latest versions and take advantage of new tools and functionalities. Additionally, explore other software and techniques related to texturing and material creation to expand your skill set.

10.3. Personal Projects and Exploration: Dedicate time to personal projects and experiments. Push the boundaries of your creativity, try new techniques, and take risks. Personal projects allow you to showcase your unique style and grow as an artist, opening doors to new opportunities.

Conclusion: Unleash Your Full Creative Potential with Substance Painter!

Congratulations on completing this detailed journey through Substance Painter! With its vast array of features, versatile workflows, and industry-specific adaptations, Substance Painter empowers you to unleash your full creative potential in the world of texturing and material creation. Remember to adapt your techniques to different industries, collaborate effectively, and stay updated with the latest developments. By continuously exploring, learning, and pushing your artistic boundaries, you'll be well on your way to becoming a master of Substance Painter and creating breathtaking textures that captivate audiences across various fields

Reference:

1. "Substance Painter for Beginners" by Richard Yot - This book provides a beginner-friendly introduction to Substance Painter, covering the essential tools and workflows for texturing and painting 3D models.
2. "Substance Painter Official Documentation" - The official documentation provided by Allegorithmic (now Adobe) offers in-depth information on using Substance

Painter, including tutorials, guides, and explanations of various features and techniques.

3. Online tutorials and courses - Websites like Pluralsight, Udemy, and LinkedIn Learning offer online courses and tutorials specifically dedicated to Substance Painter. These resources provide step-by-step instructions, practical examples, and workflow tips from industry professionals.
4. Substance Academy - Substance Academy is an online learning platform that offers a wide range of tutorials, webinars, and resources for learning Substance Painter. It covers various topics, from basic techniques to advanced workflows, and includes video tutorials and written guides.
5. Substance Painter YouTube Channel - The official Substance Painter YouTube channel features video tutorials, workflow demonstrations, and tips from the Substance team and experienced artists. It's a valuable resource for learning new techniques and staying updated with the latest features.
6. Community forums and online communities - Joining online communities like the Substance Forum or the Substance Facebook Group allows you to connect with other Substance Painter users, share knowledge, ask questions, and gain insights from the community.

Unleashing Creativity with 3D Motion Graphics

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Introduction: Welcome to the dynamic world of 3D motion graphics! In this chapter, we'll explore the captivating realm where design, animation, and visual storytelling come together in stunning motion. Whether you're a budding motion graphics artist or simply intrigued by the magic of moving visuals, we'll take you on an exciting journey through the fundamentals, techniques, and endless creative possibilities of 3D motion graphics.

1. What are 3D Motion Graphics?

Imagine infusing life into static designs by adding movement, depth, and visual effects. That's the essence of 3D motion graphics! It is the art of animating 3D objects, typography, and visual elements to create engaging and immersive visual narratives. Whether it's an eye-catching logo animation, a dynamic title sequence, or a captivating advertisement, 3D motion graphics breathe life into designs and elevate them to a new level of visual impact.

2. Tools and Software

To embark on your journey into 3D motion graphics, you'll need the right tools and software. Here are a few popular options:

a) Cinema 4D: Known for its user-friendly interface, Cinema 4D offers a comprehensive set of tools for creating 3D motion graphics. It combines powerful modeling, animation, and rendering capabilities with an intuitive workflow, making it a favorite among motion graphics artists.

b) Autodesk Maya: Widely used in the film and television industry, Maya is a versatile software that enables artists to create complex 3D animations and visual effects. Its extensive toolset and advanced capabilities make it a go-to choice for professionals.

c) Blender: As a free and open-source software, Blender has gained popularity for its robust capabilities in 3D modeling, animation, and motion graphics. It offers a supportive community, frequent updates, and a wealth of tutorials and resources.

3. Key Concepts and Techniques

Let's dive into some fundamental concepts and techniques that drive 3D motion graphics:

- a) **Keyframing:** Keyframing is the process of setting specific points in time (keyframes) to define an object's position, scale, rotation, or any other attribute. By interpolating between keyframes, smooth motion is created, allowing for seamless animation.
- b) **Camera Movement:** The camera plays a crucial role in 3D motion graphics, as it determines the viewer's perspective. Dynamic camera movements, such as pans, tilts, and zooms, add excitement and enhance the storytelling aspect of motion graphics.
- c) **Lighting and Shading:** Proper lighting and shading techniques are essential for creating a visually appealing and realistic look. Experimenting with different lighting setups, shadows, and materials adds depth and dimension to 3D objects, making them come alive.
- d) **Text and Typography Animation:** Typography is an integral part of motion graphics. Animating text and incorporating dynamic typography can bring emphasis, style, and personality to your designs. Techniques such as kinetic typography, text transitions, and lettering animations are commonly used to create engaging visual experiences.

4. Motion Graphics in Various Industries

The versatility of 3D motion graphics allows it to find applications in various industries:

- a) **Advertising and Marketing:** 3D motion graphics enable brands to create visually striking and memorable advertisements, promotional videos, and social media content. The captivating animations, product visualizations, and dynamic storytelling help brands communicate their message effectively.
- b) **Film and Television:** From title sequences to visual effects, 3D motion graphics play a significant role in the film and television industry. They enhance storytelling, create immersive environments, and add visual spectacle to productions.
- c) **Broadcast Design:** Television networks use 3D motion graphics to create captivating broadcast designs, including show intros, bumpers, lower thirds, and on-screen graphics. These elements enhance branding and provide a cohesive visual identity.
- d) **Game Development:** The world of video games relies heavily on 3D motion graphics for character animations, in-game cinematics, and user interface design. The fluid movements, realistic environments, and captivating effects immerse players in virtual worlds.

5. Trends and Advancements

The world of 3D motion graphics is constantly evolving. Here are some notable trends and advancements to watch out for:

a) **Real-Time Rendering:** Real-time rendering technologies are revolutionizing 3D motion graphics by providing instant feedback and interactive experiences. With advancements in GPU capabilities, artists can preview and render complex scenes in real-time, improving efficiency and creativity.

b) **Virtual and Augmented Reality:** The integration of 3D motion graphics with virtual and augmented reality opens up exciting possibilities. Immersive experiences, interactive simulations, and augmented content in the real world are transforming the way we engage with motion graphics.

c) **Experimental Techniques:** Motion graphics artists are constantly pushing boundaries by experimenting with new techniques, styles, and aesthetics. From glitch art to abstract animations, these explorations redefine the traditional boundaries of motion graphics and inspire new creative directions.

6. Collaboration and Workflow

Collaboration plays a vital role in the world of 3D motion graphics. As a motion graphics artist, you may find yourself working in a team that includes designers, animators, sound engineers, and directors. Effective communication and collaboration are key to ensuring that everyone is on the same page and working towards a shared vision.

Collaborative workflows often involve sharing project files, assets, and feedback through cloud-based platforms or version control systems. These tools streamline the process, allowing team members to work concurrently, make real-time adjustments, and provide feedback, resulting in a more efficient and cohesive final product.

7. Audio Integration

Incorporating sound and music into your 3D motion graphics elevates the viewer's experience and adds another layer of engagement. Sound effects, voiceovers, and synchronized music enhance the mood, timing, and impact of your animations. Collaborating with sound designers and composers can help you create a harmonious audio-visual experience that immerses the audience in your motion graphics.

8. Iteration and Feedback

Like any creative endeavor, 3D motion graphics often go through multiple iterations and revisions to achieve the desired result. Embrace feedback as a valuable part of the creative process. Sharing your work with others and seeking constructive criticism can help you refine your designs, improve timing and pacing, and discover new ideas.

Stay open-minded, be willing to iterate, and use feedback as a catalyst for growth. By continuously refining and polishing your work, you can push the boundaries of your creativity and deliver exceptional 3D motion graphics.

9. Learning and Growth

The world of 3D motion graphics is ever-evolving, with new techniques, software updates, and trends constantly emerging. Embrace the mindset of a lifelong learner and invest time in expanding your skill set. Attend workshops, online tutorials, and industry events to stay updated on the latest advancements and gather inspiration from fellow artists.

Building a strong foundation in the principles of animation, design, and storytelling will serve as a solid base for your growth. Experiment with different styles, techniques, and tools to discover your unique voice and aesthetic within the world of 3D motion graphics.

Conclusion

Congratulations on embarking on the exciting journey of 3D motion graphics! Through this chapter, we've explored the fundamentals, tools, and creative possibilities within the realm of 3D motion graphics. By combining design, animation, and visual storytelling, you have the power to captivate audiences and create immersive experiences.

Remember, friendly experimentation, collaboration, and continuous learning are key to unlocking your full potential as a 3D motion graphics artist. Embrace the ever-evolving nature of this field, stay open to feedback, and let your creativity soar. With dedication, passion, and a touch of technical prowess, you'll create visually stunning and emotionally impactful 3D motion graphics that leave a lasting impression. Now, it's time to dive in, unleash your creativity, and bring your imaginative visions to life!

Reference:

1. "The After Effects Illusionist: All the Effects in One Complete Guide" by Chad Perkins - This book explores various creative techniques and effects in Adobe After Effects, including 3D motion graphics. It provides step-by-step tutorials, practical examples, and insights into unleashing creativity with 3D motion graphics.

2. Online tutorials and courses - Platforms like Pluralsight, Udemy, and LinkedIn Learning offer online courses and tutorials specifically focused on 3D motion graphics. These resources provide comprehensive guidance on using software tools like Adobe After Effects, Cinema 4D, or Blender to create dynamic and visually appealing motion graphics.
3. Motion graphics and design websites - Websites like Motionographer, School of Motion, or Video Copilot offer a wealth of resources, articles, and case studies related to motion graphics. These platforms showcase inspiring motion graphics projects, provide insights into creative techniques, and offer tutorials to help you expand your creative horizons.
4. Motion design conferences and events - Attending motion design conferences and events, such as Blend Fest, NAB Show, or Motion Plus Design, can provide exposure to the latest trends and techniques in 3D motion graphics. These events often feature talks and presentations by industry experts, inspiring you to push the boundaries of your creativity.
5. Online communities and forums - Engaging with online communities and forums dedicated to motion graphics can provide valuable opportunities for sharing ideas, getting feedback, and learning from other motion designers. Platforms like Reddit's r/MotionDesign or Behance offer spaces to connect with fellow creatives and explore their work.
6. Software documentation and user forums - Exploring the official documentation and user forums of software tools like Adobe After Effects, Cinema 4D, or Blender can provide insights into specific features and workflows for creating 3D motion graphics. These resources often include tutorials, tips, and community discussions that can spark your creativity.

The Impact of Hope, Optimism, and Resilience in organization

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Abstract: This research paper examines the impact of hope, optimism, and resilience on individual well-being and organizational outcomes. Drawing from theoretical frameworks such as Snyder's Hope Theory, explanatory styles of optimism, and the concept of psychological resilience, the paper explores how these positive psychological factors influence individuals' ability to cope with adversity, maintain motivation, and thrive in the workplace. The study also investigates the organizational benefits of fostering hope, optimism, and resilience, including increased productivity, job satisfaction, and organizational commitment. The findings contribute to a better understanding of the importance of cultivating positive psychological resources in the workplace and provide practical implications for organizations seeking to enhance employee well-being and organizational success.

Keywords: hope, optimism, resilience, well-being, organizational outcomes, positive psychology

Introduction:

Positive organizational behavior (POB) focuses on studying and understanding the positive aspects of individuals and organizations in the workplace. It emphasizes the importance of fostering positive emotions, attitudes, and behaviors to create a thriving work environment. This essay explores the impact of three key factors of POB - hope, optimism, and resilience - on individuals and organizations. It discusses their definitions, theoretical frameworks, and practical implications for promoting well-being, productivity, and organizational success.

Hope: Hope is a positive psychological state that involves having goals, developing strategies to achieve them, and maintaining motivation despite obstacles. Snyder's Hope Theory posits that hope is composed of agency (setting goals and taking action) and pathways (finding routes to achieve goals). In the workplace, hopeful individuals are more likely to set challenging goals, persist in the face of setbacks, and exhibit higher levels of motivation. They are better equipped to handle stress, solve problems, and maintain positive work relationships.

Optimism: Optimism refers to a general positive outlook and expectation that good things will happen. It is associated with explanatory styles, where optimistic individuals tend to attribute positive events to internal, stable, and global factors, while attributing negative events to external, temporary, and specific factors. Optimistic employees display higher levels of job satisfaction, engagement, and well-being. They approach challenges with a positive mindset, view setbacks as temporary, and are more likely to seek solutions and opportunities for growth.

Resilience: Resilience is the ability to bounce back from adversity, adapt to change, and maintain well-being. It involves the capacity to cope effectively with stressors, recover from setbacks, and grow stronger in the face of challenges. Resilient individuals in the workplace demonstrate higher levels of emotional well-being, job satisfaction, and performance. They

possess a positive mindset, flexible problem-solving skills, and strong social support networks. Resilience enables individuals to navigate through uncertainty, handle work demands, and maintain their motivation and commitment to organizational goals.

Impact on Individuals and Organizations: The presence of hope, optimism, and resilience in the workplace has several positive outcomes for individuals and organizations. Employees with higher levels of hope, optimism, and resilience experience greater job satisfaction, engagement, and overall well-being. They are more likely to exhibit higher levels of creativity, innovation, and proactivity. They approach tasks with a positive mindset, persist in the face of challenges, and find innovative solutions. Furthermore, individuals high in hope, optimism, and resilience are better equipped to cope with work-related stress and maintain their mental and physical health, reducing the risk of burnout and turnover.

Organizations benefit from fostering a culture that promotes and supports hope, optimism, and resilience among employees. Positive emotions and attitudes lead to increased employee engagement, productivity, and organizational commitment. These factors contribute to a positive work climate, improved teamwork, and reduced conflicts. Organizations that prioritize POB create an environment that attracts and retains talented employees, enhances organizational performance, and adapts effectively to change and uncertainty.

Practical Implications: To foster positive organizational behavior in the workplace, organizations can take several practical steps:

Encourage goal-setting and provide support: Organizations can facilitate the goal-setting process by helping employees define clear and challenging goals. They can provide resources, training, and support to help individuals develop strategies to achieve their goals.

Promote positive communication and feedback: Creating a positive work environment involves providing regular feedback and recognition. Encouraging positive communication, appreciation, and acknowledgment of employee efforts can enhance motivation, job satisfaction, and well-being.

Develop resilience-building programs: Organizations can implement resilience-building programs that provide employees with tools and strategies to cope with stress, setbacks.

1. **Significance of Resilience-building Programs:**

Resilience-building programs have significant importance for individuals and organizations. Here are some key reasons why these programs are significant:

Enhancing Well-being: Resilience-building programs help individuals develop the necessary skills and strategies to effectively cope with challenges, stress, and adversity. By promoting resilience, these programs contribute to improving individuals' overall well-being, mental health, and quality of life.

Promoting Mental Health: Resilience is closely associated with mental health and plays a crucial role in preventing and managing mental health issues such as anxiety and depression. Resilience-building programs provide individuals with tools and techniques to enhance their mental health and build psychological strength.

Increasing Job Satisfaction and Engagement: Resilient individuals are better equipped to handle workplace pressures and setbacks, which positively impacts

their job satisfaction and engagement. Resilience-building programs enable employees to navigate through demanding work situations, maintain a positive attitude, and find meaning and fulfillment in their work.

Improving Performance and Productivity: Resilience is linked to higher levels of performance and productivity. By equipping individuals with resilience skills, these programs enhance their ability to manage work-related challenges, adapt to change, and maintain focus and productivity even in stressful situations.

Strengthening Organizational Culture: Resilience-building programs contribute to fostering a positive and supportive organizational culture. When employees develop resilience, they are more likely to support and uplift their colleagues, creating a collaborative and resilient work environment.

Future Directions and Challenges:

While resilience-building programs have demonstrated their value, there are some important considerations for future directions and challenges:

Personalization and Tailoring: Future programs should focus on individual differences and tailor interventions to specific needs, considering factors such as personality traits, work environment, and personal circumstances. Customizing programs ensures that individuals receive targeted support to enhance their resilience.

Long-term Sustainability: Maintaining the effectiveness of resilience-building programs over the long term is crucial. It is important to create sustainable strategies that reinforce resilience skills continuously and provide ongoing support to individuals in their professional and personal lives.

Integration with Organizational Practices: Resilience-building programs should be integrated into broader organizational practices and policies. They should align with performance management, leadership development, and employee well-being initiatives to create a comprehensive and holistic approach to resilience.

Evaluation and Measurement: It is essential to develop robust evaluation measures to assess the impact of resilience-building programs accurately. Evaluating the outcomes and effectiveness of these programs helps identify areas for improvement and informs future program design and implementation.

Addressing Barriers and Stigma: Overcoming barriers and reducing stigma around mental health and seeking support is crucial. Future programs should address any cultural or organizational barriers that may prevent individuals from fully engaging in resilience-building activities.

Technological Advancements: Leveraging technological advancements, such as digital platforms and mobile applications, can enhance the accessibility and reach of resilience-building programs. Embracing technology can provide flexible and convenient options for individuals to access resources and support.

Addressing these future directions and challenges will contribute to the continued effectiveness and impact of resilience-building programs, promoting well-being and positive outcomes for individuals and organizations alike.

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The Impact of Mobile Application Marketing: A Comprehensive Analysis

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Abstract: Mobile application marketing has emerged as a powerful strategy for businesses to reach and engage with their target audience. This research paper aims to explore the impact of mobile application marketing on various aspects such as user acquisition, user engagement, brand visibility, and revenue generation. By examining the strategies, techniques, and metrics associated with mobile application marketing, this study provides valuable insights into the effectiveness and significance of this marketing approach. The research combines a literature review, case studies, and statistical analysis to present a comprehensive analysis of the impact of mobile application marketing.

Mobile Application Marketing: Definition and Overview

Mobile application marketing refers to the process of promoting mobile applications to target users in order to increase app downloads, user engagement, and ultimately drive business growth. It involves various strategies, techniques, and channels to reach potential users, create awareness about the app, and encourage user acquisition and retention.

Mobile application marketing encompasses both pre-launch and post-launch activities. Pre-launch activities involve market research, competitor analysis, app store optimization (ASO), and creating a marketing plan. Post-launch activities focus on user acquisition, engagement, and retention through various marketing channels such as app store optimization, social media marketing, influencer marketing, email marketing, paid advertising, content marketing, and more.

Mobile Application Market Trends

Understanding the current trends in the mobile application market is crucial for effective marketing strategies. Some notable trends include:

1. **Increased App Adoption:** Mobile applications have become an integral part of people's lives, with users spending a significant amount of time on apps. This trend provides opportunities for businesses to reach and engage with their target audience through mobile app marketing.
2. **App Store Optimization (ASO):** ASO has gained importance as it helps improve app visibility and discoverability in app stores. Optimizing keywords, app descriptions, screenshots, and reviews/ratings are key factors in ASO.
3. **Personalization and User Experience:** Users now expect personalized experiences tailored to their preferences. Effective mobile app marketing involves understanding user needs, providing a seamless user experience, and leveraging personalization techniques.

4. **Emerging Technologies:** Technologies such as augmented reality (AR), virtual reality (VR), artificial intelligence (AI), and machine learning (ML) are increasingly being integrated into mobile applications. Marketers can leverage these technologies to create innovative and engaging experiences for users.
5. **User-generated Content:** User-generated content (UGC) has become a powerful tool for mobile app marketing. Encouraging users to create and share content related to the app can enhance brand visibility and attract new users.

Mobile Application Marketing Strategies

There are several effective strategies for mobile application marketing. Some common strategies include:

1. **App Store Optimization (ASO):** Optimizing app store listing elements such as title, keywords, app description, screenshots, and reviews/ratings to improve visibility and attract organic downloads.
2. **Social Media Marketing:** Leveraging social media platforms to create brand awareness, engage with users, run targeted ads, and encourage app downloads.
3. **Influencer Marketing:** Collaborating with influential individuals or content creators to promote the app through sponsored content, reviews, or endorsements.
4. **Paid Advertising:** Running mobile app install campaigns through various ad networks and platforms such as Google Ads, Facebook Ads, or in-app advertising networks to drive app downloads.
5. **Content Marketing:** Creating valuable and relevant content such as blog posts, videos, or tutorials related to the app to attract and educate users, positioning the app as a solution to their needs.
6. **Email Marketing:** Building an email list and sending targeted emails to existing users or potential users to drive engagement, promote new features, or offer exclusive deals.
7. **App Referral Programs:** Encouraging existing users to refer the app to their friends or colleagues in exchange for incentives or rewards, fostering organic growth.

Key Metrics for Evaluating Mobile Application Marketing Success

Evaluating the success of mobile application marketing campaigns requires tracking and analyzing key metrics. Some important metrics include:

1. **App Downloads:** The number of times the app has been downloaded or installed by users.

2. User Acquisition Cost (UAC): The cost incurred to acquire each new user.
3. App Store Rankings: The app's position in the app store's search results or category rankings.
4. App Engagement Metrics: Metrics such as daily active users (DAU),

Recommendations for future mobile application marketing strategies include:

Embrace Personalization: Invest in technologies and strategies that allow for personalized user experiences. Utilize user data to understand their preferences, behaviors, and needs, and tailor marketing messages and app experiences accordingly. Personalization can significantly improve user engagement and drive app adoption.

Leverage Emerging Technologies: Stay updated with emerging technologies such as augmented reality (AR), virtual reality (VR), artificial intelligence (AI), and machine learning (ML). Explore how these technologies can enhance the user experience, create unique marketing opportunities, and differentiate your app from competitors.

Focus on User Retention: While user acquisition is important, it's equally crucial to focus on retaining existing users. Implement strategies such as push notifications, in-app messaging, loyalty programs, and personalized offers to keep users engaged and loyal to your app. High user retention rates lead to increased app usage, positive word-of-mouth, and higher lifetime value for users.

Emphasize App Store Optimization (ASO): With the increasing number of apps in app stores, ASO becomes even more critical. Continuously optimize your app's metadata, keywords, visuals, and reviews/ratings to improve visibility, drive organic downloads, and enhance app store rankings. Regularly monitor and update your ASO strategy based on changes in algorithms and user search behavior.

Incorporate User-Generated Content (UGC): Leverage the power of user-generated content to create brand advocates and attract new users. Encourage users to share their experiences, reviews, and content related to your app. Run user-generated content campaigns, feature user testimonials, and provide platforms for users to engage with one another. UGC adds authenticity and social proof to your app marketing efforts.

Leverage Influencer Marketing: Identify influencers relevant to your app's target audience and collaborate with them to promote your app. Influencer marketing can help generate buzz, reach a wider audience, and increase app downloads. Ensure that the influencers align with your brand values and have an engaged following.

Data-Driven Decision Making: Make data-driven decisions by tracking and analyzing key performance metrics. Continuously monitor user behavior, engagement rates, conversion rates, and user feedback to gain insights into user preferences, pain points, and opportunities for improvement. Use this data to optimize marketing campaigns, user experiences, and feature updates.

Test and Iterate: Embrace an iterative approach to app marketing. Test different marketing strategies, channels, creatives, and messaging to identify what works best for your target audience. Conduct A/B testing, user surveys, and usability testing to gather feedback and refine your marketing approach based on real user insights.

Embrace Omnichannel Marketing: Develop a holistic approach that integrates various marketing channels, including social media, email, paid advertising, content marketing, and offline channels. Ensure consistency in messaging, branding, and user experience across all channels. This approach allows you to reach users through their preferred touchpoints and provides a seamless experience throughout the user journey.

Stay Abreast of Industry Trends: Continuously monitor industry trends, competitor strategies, and user preferences to stay ahead in the rapidly evolving mobile app market. Attend conferences, participate in forums, and network with industry professionals to gain insights and stay informed about emerging opportunities and best practices.

By implementing these recommendations, businesses can enhance their mobile application marketing strategies, improve user acquisition and engagement, and achieve long-term success in the competitive mobile app market.

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The Impact of the Internet on Learning: A Comprehensive Analysis

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Abstract:

This research paper aims to examine the impact of the internet on learning in the digital age. With the widespread availability of internet connectivity and the integration of technology in education, the internet has significantly transformed the learning landscape. This paper provides a comprehensive analysis of the positive and negative effects of the internet on various aspects of learning, including access to information, collaboration, communication, personalized learning, and lifelong learning. Additionally, it explores the challenges and considerations associated with internet-enabled learning environments. By critically analyzing the impact of the internet on learning, this study seeks to provide insights and recommendations for educators, policymakers, and researchers to harness the potential of the internet effectively.

Introduction to the Integration of the Internet in Educational Settings:

The integration of the internet in educational settings has revolutionized traditional teaching and learning methods, transforming the way education is delivered and accessed. The internet has emerged as a powerful tool that provides students, teachers, and institutions with access to a vast array of resources, information, and collaborative opportunities.

In the past, education primarily relied on physical textbooks, face-to-face interactions, and limited access to knowledge beyond the boundaries of the classroom. However, with the advent of the internet, educational institutions have been able to leverage its capabilities to enhance and expand the learning experience.

The integration of the internet in education encompasses various aspects, including instructional delivery, communication, collaboration, research, and assessment. Through internet-enabled devices such as computers, laptops, tablets, and smartphones, students and educators can connect to the virtual world of educational resources, tools, and platforms.

The internet provides a wealth of educational content in the form of websites, online courses, multimedia resources, digital libraries, and open educational resources. Students can access up-to-date information, engage with interactive learning materials, and explore diverse perspectives from around the globe. This access to a wide range of resources has expanded the horizons of education, allowing learners to delve into topics beyond the confines of traditional textbooks.

Moreover, the internet has facilitated communication and collaboration among students and educators. Email, discussion forums, video conferencing, and social media platforms have become integral components of the educational landscape. These tools enable real-time interactions, peer-to-peer discussions, and collaborative projects, fostering a sense of community and expanding learning beyond the physical classroom.

Additionally, the integration of the internet has opened up new avenues for research and inquiry-based learning. Students can engage in online research, access scholarly journals, and interact with experts in various fields. The internet has democratized the research process, making it more accessible and inclusive for learners of all backgrounds.

The integration of the internet in educational settings also presents new opportunities for assessment and feedback. Online quizzes, digital portfolios, and interactive assessment tools allow for immediate feedback, personalized learning pathways, and data-driven insights into student progress.

However, the integration of the internet in education is not without challenges. The digital divide, unequal access to technology, privacy concerns, and information overload are some of the issues that need to be addressed to ensure equitable and effective integration of the internet in educational settings.

In summary, the integration of the internet in educational settings has transformed the learning landscape, providing learners with vast resources, opportunities for collaboration, and access to a global community of knowledge. It has expanded the boundaries of education, allowing for personalized, interactive, and engaging learning experiences.

Definition and Characteristics of Virtual Learning Communities:

- Explanation of virtual learning communities and their significance in education
- Key characteristics of virtual learning communities (e.g., shared interests, collaboration, collective knowledge)
- Examples of virtual learning communities in different educational contexts (e.g., subject-specific communities, professional learning communities)

Benefits of Virtual Learning Communities:

- Facilitation of knowledge sharing and peer support among learners
- Opportunities for collaborative learning and problem-solving
- Enhanced engagement and motivation through interaction with like-minded individuals
- Access to diverse perspectives and expertise from a global community

Social Networks in Education:

- Utilization of social networks for educational purposes
- Examples of popular social networks used in education (e.g., Twitter, Facebook, LinkedIn)
- Benefits of social networks for connecting learners, educators, and experts
- Integration of social networks into formal and informal learning environments

Modern Concepts of Management

Roles and Contributions within Virtual Learning Communities and Social Networks:

- Identification of different roles within virtual learning communities (e.g., moderators, contributors, lurkers)
- Understanding the dynamics of participation and engagement in virtual learning communities
- Strategies for active participation and effective contributions within social networks

Strategies for Building and Sustaining Virtual Learning Communities:

- Considerations for creating and nurturing virtual learning communities
- Establishing community guidelines and norms for positive interactions
- Encouraging active participation through activities, discussions, and knowledge sharing
- Utilizing technologies and tools to support community building and communication

Challenges and Limitations of Virtual Learning Communities and Social Networks:

- Addressing issues of trust, credibility, and reliability in online communities
- Managing potential information overload within virtual learning communities
- Privacy concerns and ethical considerations in online social networks
- Overcoming barriers to participation and engagement within virtual communities

Emergence of the Internet in Education:

- Introduction to the integration of the internet in educational settings
- Historical overview of the adoption of the internet in education
- Early uses of the internet for educational purposes

Development of Internet Technologies for Learning:

- Advancements in internet technologies that have influenced education
- Introduction of web-based learning platforms and learning management systems
- Integration of multimedia and interactive elements in online educational content

Internet Connectivity and Infrastructure:

- Expansion of internet access and its impact on educational institutions
- Growth of broadband and wireless connectivity in schools and universities

- Challenges and considerations related to internet infrastructure in education

Internet Policies and Regulations:

- Introduction of policies and regulations governing internet usage in education
- Examples of educational technology policies at national and international levels
- Implications of internet policies for student safety, privacy, and equitable access

Digital Divide and Access Disparities:

- Exploration of the digital divide in educational contexts
- Examination of disparities in internet access among different student populations
- Efforts to bridge the digital divide and promote digital inclusion in education

Internet and Pedagogical Shifts:

- Impact of the internet on pedagogical approaches and instructional practices
- Transition from traditional, teacher-centered models to learner-centered approaches
- Exploration of online and blended learning environments facilitated by the internet

Changing Role of Educators:

- Transformation of the role of educators in the internet-enabled learning landscape
- Shift from information gatekeepers to facilitators of knowledge creation
- Professional development needs for educators in utilizing the internet for teaching and learning

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The social psychology of creativity

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Abstract:

The social psychology of creativity explores the intersection between individual creativity and the social context in which it occurs. This essay provides an overview of key concepts, theories, and research findings in the field. It highlights the influence of social interactions, cultural norms, and group dynamics on creativity. The essay emphasizes the importance of understanding the social dimensions of creativity in fostering innovation and problem-solving.

Introduction

The social psychology of creativity explores the fascinating intersection between individual creativity and the social context in which it occurs. Creativity is not solely an individual trait; it is also influenced by various social factors, including social interactions, cultural norms, and group dynamics. This essay delves into the social psychology of creativity, discussing key concepts, theories, and research findings that shed light on this intriguing phenomenon.

One influential theory in the social psychology of creativity is the Componential Model of Creativity, proposed by Amabile (1983). This model emphasizes the role of three interrelated components in creative performance: domain-relevant skills, creative thinking skills, and intrinsic motivation. While these components highlight individual factors, they are also influenced by the social context in which creativity occurs.

Social interactions play a crucial role in shaping and fostering creativity. Collaborative brainstorming, for example, can enhance idea generation and creative problem-solving. Research has shown that diverse perspectives and insights brought by group members can lead to more innovative and novel ideas. Moreover, supportive and encouraging social environments, such as positive feedback and recognition from peers and mentors, can boost individuals' confidence and motivation, thus fueling their creative output.

Cultural norms and values also shape the expression and acceptance of creativity. Different cultures may have varying attitudes towards creativity and divergent thinking. Some cultures may emphasize conformity and adherence to established norms, while others may encourage individual expression and innovation. These cultural influences can either foster or hinder creative endeavors, depending on the social expectations and values prevalent in a given society.

Group dynamics can both facilitate and impede creative processes. On one hand, cohesive and cooperative groups can provide a safe space for idea exploration and risk-taking. Group members can offer constructive feedback, challenge each other's assumptions, and contribute to the development of novel ideas. On the other hand, conformity pressures, groupthink, and power dynamics within groups can stifle creativity. Dominant personalities or a fear of deviating from the group's consensus may suppress alternative viewpoints and hinder creative expression.

Another important aspect of the social psychology of creativity is the diffusion of creative ideas and innovations. Social networks and communication channels play a vital role in spreading and amplifying creative ideas. Research has shown that exposure to diverse ideas and perspectives through social networks can enhance individuals' creativity by providing a broader pool of inspiration and facilitating knowledge exchange.

In conclusion, the social psychology of creativity highlights the intricate interplay between individual creativity and the social context. Social interactions, cultural norms, and group dynamics all influence the creative process and its outcomes. Understanding the social factors that shape and support creativity can help create environments that foster and nurture innovative thinking. By recognizing and valuing the social dimensions of creativity, we can tap into the collective potential of individuals and enhance our ability to solve complex problems, generate novel ideas, and drive positive change in our society.

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The Impact of Online Classes on Student Growth: A Comprehensive Analysis

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Abstract:

Online classes have become an integral part of the education system, particularly in response to global events and advancements in technology. This research paper aims to investigate the impact of online classes on student growth, encompassing academic performance, skills development, social-emotional well-being, and overall educational experience. By examining the benefits, challenges, and effectiveness of online learning, this study provides valuable insights into the potential advantages and limitations of this educational approach. The research combines a literature review, empirical evidence, and qualitative analysis to present a comprehensive analysis of the impact of online classes on student growth.

Definition and Overview of Online Classes

This section provides a comprehensive definition and overview of online classes. It explores the evolution of online learning, different modes of delivery (synchronous vs. asynchronous), and the technological infrastructure required for effective online classes. The section also discusses the various types of online learning platforms and the flexibility and accessibility offered by online classes.

Theoretical Foundations in Online Learning

This section delves into the theoretical foundations that underpin online learning. It explores prominent theories such as constructivism, social constructivism, and connectivism, and examines how these theories relate to online learning environments. The section also discusses the importance of instructional design principles and the role of technology in facilitating effective online instruction.

Benefits and Challenges of Online Classes

In this section, the benefits and challenges associated with online classes are analyzed. The benefits may include increased flexibility, personalized learning experiences, access to a wider range of resources, and the development of digital literacy skills. On the other hand, challenges such as lack of face-to-face interaction, technological barriers, and the need for self-regulation and time management skills are discussed. The section aims to provide a balanced perspective on the advantages and disadvantages of online classes.

Student Growth and Development in Online Learning Environments

This section focuses on the impact of online classes on student growth and development. It examines how online learning can contribute to academic achievement, skill acquisition, and cognitive development. The section also explores the role of online classes in fostering independent learning, critical thinking, collaboration, and problem-solving skills. Additionally, the section addresses the social and emotional aspects of student growth in online learning environments, including the development of self-efficacy, motivation, and a sense of belonging.

Overall, these sections provide a comprehensive understanding of the definition, theoretical foundations, benefits, challenges, and impact of online classes on student growth and development. They lay the foundation for the subsequent analysis and empirical evidence presented in the research paper.

Policy Considerations for Online Education

This section focuses on policy considerations that need to be taken into account for effective implementation of online education. It examines the regulatory and policy frameworks necessary to support and govern online learning at various educational levels. The section discusses key policy areas such as accreditation and quality assurance, funding and resource allocation, curriculum design and standards, teacher training and professional development, data privacy and security, and digital accessibility. It explores the importance of establishing guidelines and standards to ensure the quality and integrity of online education, while also promoting equitable access and inclusive practices.

Recommendations for Future Research on Online Classes

In this section, recommendations are provided for future research on online classes. It highlights areas that require further investigation to enhance our understanding of online learning and its impact on student growth. Some potential research directions may include:

1. Long-term impact: Conduct longitudinal studies to assess the long-term impact of online classes on student academic achievement, career outcomes, and lifelong learning.
2. Pedagogical approaches: Explore different pedagogical approaches in online education, such as collaborative learning, problem-based learning, and gamification, and examine their effectiveness in promoting student engagement and learning outcomes.
3. Teacher roles and professional development: Investigate the role of teachers in online learning environments, including their training needs, instructional practices, and strategies for building effective online learning communities.
4. Digital literacy and 21st-century skills: Examine the development of digital literacy skills, information literacy, critical thinking, creativity, and other essential 21st-century skills in online learning contexts.
5. Equity and accessibility: Investigate strategies to ensure equitable access to online education, address the digital divide, and promote inclusive practices for students with diverse backgrounds, abilities, and learning needs.
6. Student engagement and motivation: Explore factors that influence student engagement and motivation in online classes, such as instructional design, learner support, peer interaction, and personalized learning experiences.

7. Hybrid and blended learning models: Investigate the effectiveness of hybrid or blended learning models that combine online and face-to-face instruction, and explore optimal strategies for designing and implementing these models.
8. Assessment and feedback: Examine innovative approaches to assessment and feedback in online education, including the use of automated feedback, adaptive assessments, and alternative assessment methods that align with the unique characteristics of online learning.
9. Social and emotional well-being: Investigate the impact of online classes on students' social and emotional well-being, including factors such as social interaction, sense of belonging, and mental health support in virtual learning environments.

By addressing these research areas, future studies can contribute to the ongoing improvement and refinement of online education practices, policies, and outcomes, ultimately enhancing student growth and development in online learning environments.

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Theories and Frameworks for Online Education: A Comprehensive Analysis

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Abstract:

This research paper provides a comprehensive analysis of theories and frameworks that inform online education. As online learning continues to grow in popularity and importance, understanding the underlying theories and frameworks is crucial for designing effective online educational experiences. The paper explores various theories and frameworks, including the Community of Inquiry model, Connectivism, Constructivism, and Self-Regulated Learning. By examining the theoretical foundations and practical implications of these frameworks, this study aims to shed light on their application in online education settings. The research combines a literature review, empirical evidence, and case studies to present a comprehensive analysis of theories and frameworks for online education.

Introduction

This section provides an overview of online education, including its definition, growth, and significance in the modern educational landscape. It discusses the various forms of online education, such as fully online courses, blended learning, and massive open online courses (MOOCs). The section also explores the advantages and challenges associated with online education, highlighting the potential for flexible learning, access to a wide range of resources, and the need for effective pedagogical strategies to engage learners in the online environment.

Importance of Theories and Frameworks

In this section, the importance of theories and frameworks in online education is emphasized. It highlights the role of theories in providing a theoretical foundation and guiding principles for effective instructional design and pedagogical practices in online learning environments. The section explores how theories and frameworks help educators understand the underlying processes of online learning, facilitate meaningful interaction, and support learner engagement and motivation. It also discusses the value of theories in informing the design of online assessment and feedback strategies.

Comparative Analysis of Online and Traditional Learning Theories

This section compares and contrasts the theories and frameworks that underpin online education with those used in traditional face-to-face learning environments. It examines prominent learning theories such as behaviorism, cognitivism, and constructivism, and discusses their applicability and adaptation to the online context. The section explores how online learning theories address the unique features of online education, including the use of technology-mediated communication, collaborative learning tools, and personalized learning experiences. It also explores the potential benefits and limitations of applying traditional learning theories to online education.

3. Community of Inquiry Model

Definition and Components of the Community of Inquiry Model

This section introduces the Community of Inquiry (CoI) model as a theoretical framework for understanding and facilitating online learning. It provides a comprehensive definition of the CoI model and explains its three core components: cognitive presence, social presence, and teaching presence. The section explores the importance of each component in creating an engaging and effective online learning experience. It also discusses the collaborative nature of the CoI model, emphasizing the role of social interaction, critical thinking, and inquiry-based learning in online education.

Application of the Community of Inquiry Model in Online Education

In this section, the application of the Community of Inquiry model in online education is explored. It discusses how the CoI model can be used to design and facilitate online courses, promote learner engagement and collaboration, and foster meaningful online discussions. The section also highlights empirical studies and examples of best practices that demonstrate the successful implementation of the CoI model in various online learning contexts. It provides insights into the practical strategies and instructional approaches that support the development of cognitive, social, and teaching presence in online education.

By examining the overview of online education, the importance of theories and frameworks, and conducting a comparative analysis of online and traditional learning theories, followed by a detailed exploration of the Community of Inquiry model, this research paper aims to provide a comprehensive understanding of theories and frameworks for online education and their practical application in online learning environments.

The implications for online education practitioners are significant as they play a crucial role in designing, implementing, and facilitating effective online learning experiences. Based on the research conducted on theories and frameworks for online education, the following implications can be derived:

1. **Designing Engaging and Interactive Learning Experiences:** Online education practitioners should leverage theories and frameworks to design engaging and interactive learning experiences for online learners. By incorporating strategies that promote cognitive presence, social presence, and teaching presence, practitioners can create a sense of community, foster critical thinking, and facilitate active learning in the online environment.
2. **Facilitating Collaborative and Reflective Learning:** Practitioners should focus on creating opportunities for collaboration and reflection in online courses. They can use online tools and platforms to facilitate group work, peer feedback, and discussion forums that promote knowledge construction and deeper understanding among learners.
3. **Providing Adequate Instructor Presence and Support:** Online education practitioners should establish a strong teaching presence in online courses. They can do so by providing clear instructions, timely feedback, and personalized support to

learners. Regular communication and active participation in online discussions are vital for building rapport and creating a supportive learning environment.

4. **Leveraging Technology for Effective Instruction:** Practitioners should explore and utilize technology tools and resources that align with the selected theories and frameworks. This includes incorporating multimedia elements, interactive simulations, virtual labs, and other technology-enhanced learning materials to enhance learner engagement and facilitate meaningful learning experiences.
5. **Promoting Self-Regulated Learning:** Practitioners should guide learners in developing self-regulated learning skills in the online environment. They can provide explicit instruction on goal setting, time management, self-assessment, and self-reflection to empower learners to take ownership of their learning process and develop lifelong learning skills.
6. **Assessing Learning Outcomes Appropriately:** Practitioners should align assessment strategies with the selected theories and frameworks. They should design assessments that go beyond simple knowledge recall and incorporate authentic and performance-based assessments that reflect real-world application of knowledge and skills.
7. **Continuous Professional Development:** Online education practitioners should engage in continuous professional development to stay updated with the latest research, theories, and best practices in online education. This can be done through participation in workshops, conferences, online courses, and collaboration with other practitioners to exchange ideas and share experiences.
8. **Addressing Equity and Inclusion:** Practitioners should be mindful of the diversity of learners in online courses and strive to create inclusive learning environments. This includes providing accessible course materials, accommodating different learning styles, and being sensitive to cultural and linguistic differences.

By implementing these implications, online education practitioners can enhance the quality of online learning experiences and promote student engagement, interaction, and growth in the online environment.

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Wisdom, Intelligence, and Creativity Synthesized: A Comprehensive Analysis

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Abstract: This research paper aims to provide a comprehensive analysis of the interplay between wisdom, intelligence, and creativity, and their synthesis in the context of human cognition. Drawing upon a wide range of theoretical perspectives and empirical studies, this paper explores the nature of wisdom, intelligence, and creativity, their underlying cognitive processes, and their implications for individual and societal development. The synthesis of these constructs holds significant implications for education, personal growth, and societal advancement. This paper critically examines the current state of research, identifies gaps and challenges, and proposes future directions for advancing the understanding and application of wisdom, intelligence, and creativity synthesis.

Background and Significance of Studying Wisdom, Intelligence, and Creativity:

Studying wisdom, intelligence, and creativity is of significant importance due to their profound impact on various aspects of human life and development. These constructs play essential roles in personal growth, educational attainment, professional success, and societal advancement. Understanding the nature, mechanisms, and interactions of wisdom, intelligence, and creativity can provide valuable insights for enhancing human potential and addressing complex challenges in today's world.

Wisdom encompasses the ability to apply knowledge, experience, and discernment to make sound judgments and decisions. It involves integrating cognitive abilities, social understanding, and ethical values to navigate life's complexities effectively. Research on wisdom is crucial as it offers guidance for fostering ethical decision-making, promoting positive social interactions, and cultivating a sense of purpose and well-being.

Intelligence refers to cognitive abilities involved in problem-solving, learning, and adapting to new situations. It encompasses a range of mental processes, including reasoning, memory, attention, and problem-solving skills. The study of intelligence helps unravel the factors that contribute to individual differences in cognitive functioning, academic achievement, and intellectual potential. Moreover, intelligence research has practical implications for educational practices, cognitive assessment, and talent development.

Creativity involves generating original and valuable ideas, products, or solutions. It encompasses divergent thinking, flexibility, and the ability to overcome established patterns and constraints. The study of creativity is significant as it provides insights into the cognitive, social, and environmental factors that foster creative thinking and problem-solving skills. Understanding creativity is crucial for promoting innovation, fostering entrepreneurial spirit, and addressing complex challenges in diverse domains.

Definition and Conceptualization of Wisdom, Intelligence, and Creativity:

1. Wisdom:

- Wisdom refers to the ability to make sound judgments and decisions based on knowledge, experience, reflection, and values.

Modern Concepts of Management

- It involves integrating cognitive, affective, and ethical aspects to navigate complex life situations effectively.
- Wisdom encompasses self-awareness, empathy, perspective-taking, and the capacity for critical reflection and moral reasoning.

2. Intelligence:

- Intelligence refers to cognitive abilities related to learning, problem-solving, and adapting to new situations.
- It involves processes such as reasoning, memory, attention, information processing, and the acquisition and application of knowledge.
- Intelligence can be conceptualized through various theoretical models, including the psychometric approach (measuring general intelligence or g-factor), multiple intelligences theory (identifying different types of intelligence), and the triarchic theory of intelligence (comprising analytical, practical, and creative intelligence).

3. Creativity:

- Creativity refers to the generation of original and valuable ideas, products, or solutions.
- It involves thinking divergently, breaking conventional thought patterns, and combining existing knowledge and insights in novel ways.
- Creativity can manifest in various domains, including arts, sciences, technology, and business, and it encompasses processes such as fluency, flexibility, originality, and elaboration.

It is important to note that the definitions and conceptualizations of wisdom, intelligence, and creativity may vary across theories and researchers. These constructs are multifaceted and complex, and their understanding continues to evolve as new insights and perspectives emerge from interdisciplinary research.

Theoretical perspectives on wisdom (e.g., Berlin Wisdom Paradigm, Three-dimensional Model of Wisdom) Cognitive processes underlying wisdom acquisition and expression

Theoretical Perspectives on Wisdom:

1. Berlin Wisdom Paradigm (BWP):

- The BWP, proposed by Baltes and colleagues, emphasizes the importance of wisdom as a cognitive and motivational resource in the face of life's challenges.

Modern Concepts of Management

- It distinguishes between cognitive (reflective) and affective (compassionate) dimensions of wisdom.
 - The cognitive dimension involves critical analysis, perspective-taking, and considering multiple viewpoints.
 - The affective dimension encompasses empathy, emotional regulation, and compassion.
2. Three-dimensional Model of Wisdom:
- This model, proposed by Sternberg, defines wisdom as the integration of cognitive, reflective, and compassionate aspects.
 - The cognitive component includes knowledge acquisition, decision-making, and problem-solving.
 - The reflective component involves metacognitive awareness, self-reflection, and understanding the limits of knowledge.
 - The compassionate component focuses on empathy, compassion, and the application of wisdom for the greater good.

Cognitive Processes Underlying Wisdom Acquisition and Expression:

1. Information Integration:
- Wisdom involves integrating and synthesizing diverse information from multiple sources.
 - This process requires the ability to critically analyze and evaluate different perspectives, consider alternative solutions, and arrive at well-informed judgments.
2. Metacognition:
- Metacognitive processes, such as self-reflection and self-awareness, play a role in wisdom acquisition.
 - Metacognition allows individuals to monitor and regulate their thinking, consider different viewpoints, and recognize the limits of their knowledge.
3. Emotional Regulation:
- Wisdom entails the ability to regulate and manage emotions effectively.

- Emotion regulation allows individuals to maintain a balanced perspective, respond empathetically to others, and make decisions based on rationality rather than impulsivity.
4. Perspective-Taking:
- Wisdom involves the capacity to adopt different perspectives and consider the needs and interests of others.
 - Perspective-taking enables individuals to understand diverse viewpoints, empathize with others' experiences, and make decisions that consider the broader impact on individuals and society.
5. Reflective Thinking:
- Reflective thinking plays a crucial role in wisdom acquisition and expression.
 - It involves critically examining one's own beliefs and assumptions, engaging in self-reflection, and continuously seeking personal growth and self-improvement.
6. Integrative Reasoning:
- Wisdom requires the ability to integrate diverse knowledge and experiences into a coherent framework.
 - Integrative reasoning involves connecting concepts from different domains, identifying underlying patterns and relationships, and applying this integrated knowledge to solve complex problems.

It is important to note that the cognitive processes underlying wisdom are complex and multifaceted, and different theoretical perspectives may emphasize various aspects. The acquisition and expression of wisdom are influenced by a combination of cognitive, emotional, and social factors, and the interplay between these processes contributes to the development of wisdom across the lifespan.

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Work Stress and Health in a Globalized Economy: A Comprehensive Analysis

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Abstract: This research paper explores the relationship between work stress and health in the context of a globalized economy. It examines the various factors contributing to work stress, such as long working hours, high job demands, work-family conflict, and job insecurity. The paper analyzes the impacts of work stress on physical and mental health outcomes, including increased risk of burnout, cardiovascular diseases, mental health disorders, and decreased overall well-being. Additionally, it discusses the implications of work stress for organizational productivity and employee performance. The findings of this research contribute to a better understanding of the complex dynamics between work stress and health in a globalized economy, highlighting the need for effective interventions and policies to mitigate work stress and promote employee well-being.

Keywords: work stress, health, globalized economy, job demands, work-family conflict, job insecurity, burnout, mental health, well-being, organizational productivity

Background of Work Stress in a Globalized Economy:

Work stress has become a prevalent issue in the context of a globalized economy, where technological advancements, increased competition, and interconnectedness have transformed work environments. The globalization of markets and industries has led to intense competition, higher job demands, and increased pressure to perform. Additionally, rapid technological advancements and the constant need to stay connected have blurred the boundaries between work and personal life, contributing to work-related stress.

In a globalized economy, individuals are often required to work longer hours, handle complex tasks, meet tight deadlines, and adapt to changing work conditions. Moreover, job insecurity, economic uncertainty, and the fear of layoffs have become common concerns for employees worldwide. The global workforce faces challenges related to work-life balance, managing multiple responsibilities, and coping with high levels of job demands.

Significance of Studying Work Stress and Health:

Studying work stress and its impact on health is of significant importance for several reasons:

Employee Well-being: Work stress can have detrimental effects on the physical and mental health of employees. It contributes to increased levels of anxiety, depression, burnout, and various psychosomatic disorders. Understanding the causes and consequences of work stress is crucial for promoting employee well-being and ensuring a healthy workforce.

Organizational Performance: Work stress not only affects individual employees but also has implications for organizational performance. High levels of work stress can lead to

reduced productivity, increased absenteeism, higher turnover rates, and lower employee engagement. Addressing work stress is vital for enhancing organizational effectiveness and achieving sustainable growth.

Economic Impact: Work stress in a globalized economy has economic ramifications. It results in increased healthcare costs, decreased productivity, and decreased competitiveness. By addressing work stress and promoting employee well-being, organizations and societies can mitigate these negative economic consequences.

Workforce Diversity and Inclusion: Work stress affects employees from diverse backgrounds and demographic groups. Understanding the intersectional experiences of different individuals and the impact of work stress on marginalized groups is crucial for promoting diversity and inclusion in the workplace.

Policy and Intervention Development: Research on work stress provides insights for policymakers and organizations to develop effective policies and interventions. It helps in identifying best practices for managing work stress, promoting work-life balance, and creating supportive work environments.

By studying work stress and health in a globalized economy, researchers can contribute to the development of evidence-based strategies to address work-related stressors, enhance employee well-being, and create healthier and more productive work environments. Ultimately, this research can have far-reaching implications for individuals, organizations, and society as a whole.

1. Work stress is a prevalent issue in a globalized economy, characterized by long working hours, high job demands, work-life imbalance, and job insecurity.
2. Work stress has significant negative impacts on both the physical and mental health of employees, leading to burnout, increased risk of cardiovascular diseases, mental health disorders, and decreased overall well-being.
3. Work stress also has implications for organizational productivity, resulting in reduced job performance, increased absenteeism, higher turnover rates, and decreased employee engagement.
4. Strategies and interventions aimed at managing work stress, such as promoting work-life balance, providing support programs, and implementing organizational policies, can have positive effects on employee well-being and organizational outcomes.

Implications for Organizations and Policymakers:

1. Organizations should prioritize the well-being of their employees by creating supportive work environments, promoting work-life balance, and implementing policies that address work stress.

2. Employee support programs, stress management initiatives, and wellness interventions should be implemented to help employees cope with work stress effectively.
3. Policies should be developed to ensure work-life balance, provide job security, and address issues related to long working hours and high job demands.
4. Diversity and inclusion initiatives should be integrated into organizational practices to address the specific needs and challenges faced by diverse groups of employees.

Recommendations for Future Research:

1. Longitudinal studies are needed to examine the long-term effects of work stress on employee health and well-being, as well as its impact on organizational outcomes.
2. Comparative research across different industries, sectors, and cultural contexts can provide insights into sector-specific challenges and effective strategies for managing work stress.
3. The role of leadership and management practices in mitigating work stress should be further explored to identify effective leadership styles and strategies for creating supportive work environments.
4. The intersectional experiences of employees, considering factors such as gender, race, and socioeconomic status, should be investigated to understand how work stress affects diverse populations and to develop tailored interventions.
5. The effectiveness of specific interventions, such as flexible work arrangements, mindfulness programs, and organizational policies, should be evaluated to determine their impact on reducing work stress and promoting employee well-being.

By addressing these recommendations for future research, organizations and policymakers can enhance their understanding of work stress and develop evidence-based strategies to create healthier work environments, promote employee well-being, and improve organizational outcomes.

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Working Women and Work Pressure: A Comprehensive Analysis

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Abstract:

This research paper examines the relationship between working women and work pressure. It explores the various factors that contribute to work pressure among women in the workforce, including organizational factors, societal expectations, and personal challenges. The paper analyzes the impacts of work pressure on women's well-being, job satisfaction, and work-life balance. Additionally, it discusses strategies and interventions that can be implemented to mitigate work pressure and promote the overall well-being of working women. The findings of this research contribute to a better understanding of the unique challenges faced by working women and provide insights for creating supportive work environments.

Keywords: working women, work pressure, job satisfaction, work-life balance, well-being, interventions

Background of Women in the Workforce:

Over the past few decades, there has been a significant increase in the participation of women in the workforce. Women have made significant strides in breaking through traditional gender roles and pursuing careers in various fields. This shift can be attributed to social, economic, and cultural changes, as well as advancements in women's rights and gender equality movements.

Initially, women were primarily engaged in domestic and caregiving roles, while men were the primary breadwinners. However, with the rise of feminism and changing societal attitudes, women have increasingly entered the workforce, seeking education, career advancement, and financial independence.

Today, women are found in diverse professions and sectors, ranging from corporate leadership to entrepreneurship, academia, healthcare, technology, and more. However, despite their increased presence in the workforce, women still encounter unique challenges and face specific pressures that can impact their well-being and career trajectories.

Significance of Studying Work Pressure Among Working Women:

Understanding work pressure among working women is of paramount importance for several reasons:

1. **Gender Equality:** Examining work pressure experienced by women sheds light on gender disparities and challenges related to work environments, opportunities for advancement, and work-life balance. It contributes to discussions on achieving gender equality and ensuring equal opportunities for all employees.
2. **Employee Well-being:** Work pressure can significantly impact the physical and mental well-being of individuals. Exploring the specific work pressure faced by women helps in identifying potential risks, stressors, and their effects on health and overall job satisfaction.

3. **Organizational Effectiveness:** Recognizing work pressure and its implications for women in the workforce is crucial for organizations aiming to create inclusive and supportive work environments. It helps in developing strategies to mitigate work pressure, improve employee satisfaction, and enhance organizational productivity.
4. **Policy and Practice Development:** Research on work pressure among working women informs the development of policies, initiatives, and best practices aimed at promoting work-life balance, addressing gender biases, and fostering equal opportunities for career growth.
5. **Personal and Professional Development:** By understanding work pressure, women can gain insights into managing their own well-being, navigating challenging work situations, and making informed decisions regarding career advancement and work-life integration.

Studying work pressure among working women contributes to creating a more equitable and supportive work culture, facilitating individual and organizational growth, and fostering the overall well-being of women in the workforce.

Implications for Organizations and Policymakers:

Work Environment: Organizations should strive to create a supportive work environment that addresses the specific work pressure faced by working women. This includes implementing policies and practices that promote work-life balance, provide flexible work arrangements, and offer support for career development and advancement.

Diversity and Inclusion: Organizations should prioritize diversity and inclusion initiatives to ensure equal opportunities for career growth and advancement for women. This involves addressing gender biases, providing mentorship and sponsorship programs, and fostering an inclusive culture that values and supports the contributions of women in the workforce.

Training and Development: Organizations can provide training programs that enhance skills and competencies related to managing work pressure, stress management, and resilience for working women. This can help them navigate challenging situations and develop strategies for maintaining their well-being and performance.

Policy Development: Policymakers play a vital role in promoting gender equality and addressing work pressure among working women. They can enact policies that support work-life balance, parental leave policies, and equal pay initiatives. Policymakers should also collaborate with organizations to ensure compliance with these policies and promote gender diversity in leadership positions.

Recommendations for Future Research:

Longitudinal Studies: Conduct longitudinal studies to examine the long-term effects of work pressure on the career trajectories, well-being, and job satisfaction of working women. This will provide insights into the cumulative impact of work pressure over time and identify potential areas for intervention and support.

Intersectionality: Explore the intersectional experiences of working women, considering factors such as race, ethnicity, socioeconomic status, and other identities. This will help

uncover the unique challenges faced by women with multiple marginalized identities and inform strategies for addressing their specific needs.

Intervention Strategies: Investigate the effectiveness of various intervention strategies aimed at mitigating work pressure among working women. This includes examining the impact of mentoring programs, coaching, resilience-building workshops, and organizational initiatives on reducing work pressure and promoting well-being.

Work-Life Integration: Examine the strategies employed by working women to manage work pressure and achieve work-life integration. Investigate the role of organizational support, family dynamics, and personal coping mechanisms in facilitating successful work-life integration.

Comparative Studies: Conduct comparative studies across different industries and sectors to identify sector-specific challenges and opportunities for supporting working women.

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ROLE OF MICROBIOLOGY IN FORENSIC SCIENCE

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Introduction: Microbiology plays a significant role in forensic science, providing valuable insights and evidence in various aspects of criminal investigations. From identifying the presence of microorganisms at crime scenes to analyzing microbial DNA and using microbiological techniques for forensic analysis, microbiology contributes to the field of forensic science in several ways. In this chapter, we will explore the multifaceted role of microbiology in forensic sciences, discussing its applications, methodologies, and significance.

Forensic Microbial Ecology: Forensic microbial ecology is a subfield of microbiology that focuses on the study of microorganisms in forensic contexts. Microorganisms are ubiquitous in nature, including human bodies and surrounding environments. Forensic scientists can analyze the microbial community present on a crime scene or on a victim's body to gain insights into the circumstances surrounding the crime, such as the location of death, postmortem interval (PMI) estimation, or identification of a potential suspect.

Microbial communities can be unique to specific environments, and their presence or absence can provide valuable information about the origin or transfer of evidence. By analyzing the microbial diversity and composition, scientists can determine if a particular sample or evidence item originated from a specific location, such as soil, water, or a particular building. This can help in linking suspects to crime scenes or establishing the movement of evidence.

Postmortem Interval Estimation: Determining the postmortem interval (PMI), or the time since death, is a critical aspect of forensic investigations. Microbial analysis can provide insights into the decomposition process and aid in estimating the PMI. Microorganisms, particularly bacteria and fungi, colonize the human body soon after death and contribute to its decomposition. By studying the changes in microbial communities over time, forensic scientists can estimate the PMI, taking into account factors such as temperature, environment, and body conditions.

Microbial succession, the predictable changes in the types and abundance of microorganisms during decomposition, can be used as a tool for PMI estimation. Certain bacterial species, such as *Clostridium* and *Lactobacillus*, dominate the early stages of decomposition, while others, such as *Pseudomonas* and *Proteus*, become more prevalent in later stages. By analyzing the presence and abundance of these microbial species, forensic scientists can make inferences about the time since death.

Microbial Forensics: Microbial forensics is an emerging field that utilizes microbiological techniques for investigative purposes. It involves the analysis of microbial DNA, fingerprinting, and genomics to link or differentiate samples, establish the presence of specific microorganisms, or identify the source of biological agents. Microbial forensics can be applied to various scenarios, including bioterrorism, food contamination, or the spread of infectious diseases.

In cases involving bioterrorism or the intentional release of harmful microorganisms, microbial forensics can help identify the source, trace the origins of the microorganisms used, and establish a chain of custody. By comparing microbial DNA from crime scenes, victims, or environmental samples, forensic scientists can provide crucial evidence for investigations and prosecutions.

Human Microbiome Analysis: The human microbiome refers to the collective microorganisms that inhabit the human body, including the skin, oral cavity, gastrointestinal tract, and other body sites. The analysis of the human microbiome has gained attention in forensic science due to its potential for individual identification, linking individuals to crime scenes, and determining personal habits or activities.

The unique composition of an individual's microbiome can provide a microbial "fingerprint" that can be used for identification purposes. By comparing the microbial communities from a crime scene to those of potential

suspects, forensic scientists can establish associations or exclusions. Additionally, the analysis of microbiome data can provide information about an individual's diet, geographical location, or recent activities, assisting in reconstructing events or establishing timelines.

Detection of Biological Agents: Microbiology plays a critical role in the detection and analysis of biological agents, such as toxins, pathogens, or biological evidence at crime scenes. Forensic microbiologists employ specialized techniques to identify and characterize microorganisms that may be used as weapons or cause harm. These techniques involve culturing, DNA sequencing, polymerase chain reaction (PCR), and immunological methods.

In cases involving the intentional release of pathogens or toxins, forensic microbiologists can analyze the genetic material or metabolic products of microorganisms to identify the specific agent used. This information is crucial in determining the nature of the crime, assessing potential risks to public health, and developing appropriate response strategies.

Forensic Pathogenomics: Forensic pathogenomics combines microbiology and genomics to study the genetic characteristics of microorganisms involved in forensic investigations. This field focuses on identifying genetic markers, analyzing microbial genomes, and developing tools for rapid detection and characterization of microorganisms relevant to forensic cases.

Forensic pathogenomics can be applied in cases involving infectious diseases, outbreaks, or the investigation of biological evidence. By sequencing

microbial genomes, scientists can identify specific strains or variants, trace their origins, and link them to particular sources or transmission routes. This information can be valuable in determining the sources of infection, establishing patterns of transmission, or identifying the possible involvement of a specific individual.

Microbial Traces and Transfer: Microbes can leave traces and transfer between individuals, objects, or surfaces, providing valuable evidence in forensic investigations. Microbial traces can be used to establish connections between individuals or objects, determine the presence of contact, or identify potential sources of contamination.

Microbiological techniques, such as DNA profiling or microbial fingerprinting, can be used to compare microbial traces from different samples and assess their similarities or differences. This can help in linking individuals to crime scenes, identifying the sources of transferred microorganisms, or establishing patterns of contact or movement.

In conclusion, microbiology plays a crucial role in forensic sciences, providing valuable insights and evidence in criminal investigations. The applications of microbiology in forensic science range from microbial ecology and PMI estimation to microbial forensics, human microbiome analysis, detection of biological agents, forensic pathogenomics, and analysis of microbial traces and transfer. By utilizing microbiological techniques, including DNA analysis, genomics, and microbial ecology studies, forensic scientists can

provide critical information for solving crimes, identifying individuals, estimating PMI, tracing the origins of microorganisms, and linking biological evidence to specific sources. The interdisciplinary nature of microbiology and its integration with other forensic disciplines contribute to the advancement and effectiveness of forensic science in the pursuit of justice.

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RELATIONSHIP OF MENTAL DISORDERS AND FORENSIC PSYCHOLOGY

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Forensic psychology is a specialized field that combines principles of psychology and law to address the intersection between mental health and the legal system. One crucial area within forensic psychology is the study and understanding of mental disorders. Mental disorders can significantly impact an individual's cognition, emotions, and behavior, which in turn can have implications for legal decision-making processes. In this essay, we will explore the role of mental disorders in forensic psychology, examining their assessment, diagnosis, and relevance to various legal contexts.

Mental Disorders and Forensic Evaluations: In forensic psychology, mental disorders are often assessed through comprehensive evaluations conducted by forensic psychologists or psychiatrists. These evaluations aim to determine the presence, severity, and impact of mental disorders on an individual's functioning and legal decision-making capacity.

- a. **Competency to Stand Trial:** One key area where mental disorders come into play is in assessing an individual's competency to stand trial.

Competency refers to a defendant's ability to understand the nature of the legal proceedings against them, assist in their own defense, and make rational decisions. Mental disorders, such as psychosis, intellectual disability, or severe cognitive impairments, can significantly impair a person's competency. Forensic psychologists evaluate the defendant's mental state, cognitive functioning, and understanding of legal concepts to determine if they are fit to stand trial.

- b. **Criminal Responsibility:** Another crucial aspect of forensic evaluations is assessing an individual's criminal responsibility. This assessment focuses on determining if the defendant had the mental capacity to understand the nature and consequences of their actions at the time of the offense. Mental disorders, such as psychosis, mood disorders, or impulse control disorders, may impact an individual's judgment, control over their actions, or ability to differentiate between right and wrong. Forensic psychologists examine the defendant's mental state at the time of the offense to evaluate their culpability and responsibility for the criminal act.
- c. **Mitigating Factors and Sentencing:** Mental disorders can also be considered as mitigating factors in legal proceedings, particularly during sentencing. When mental disorders are established as a contributing factor to the offense, they may influence the sentencing decision, leading to reduced penalties or alternative forms of treatment. Forensic psychologists provide expert opinions on the impact of mental disorders

on an individual's behavior and their potential for rehabilitation or risk of recidivism.

2. Assessment and Diagnosis of Mental Disorders in Forensic Psychology:

Accurate assessment and diagnosis of mental disorders are crucial in forensic psychology to ensure fair and equitable legal processes. Forensic psychologists utilize various assessment tools and techniques to evaluate the presence and severity of mental disorders. These assessments may include:

a. **Clinical Interviews:** Clinical interviews are conducted to gather comprehensive information about the individual's background, mental health history, symptoms, and experiences. Forensic psychologists may interview the defendant, collateral sources such as family members or healthcare professionals, and review relevant documents to form a comprehensive understanding of the individual's mental health status.

b. **Psychological Testing:** Psychological tests are utilized to assess cognitive abilities, personality traits, and specific symptomatology related to mental disorders. Tests such as the Minnesota Multiphasic Personality Inventory (MMPI), Rorschach Inkblot Test, or Wechsler Adult Intelligence Scale (WAIS) provide valuable insights into an individual's mental functioning, personality traits, and potential psychological disorders.

c. **Risk Assessment:** Forensic psychologists also conduct risk assessments to evaluate the likelihood of future dangerousness or recidivism. These assessments consider factors such as the presence of mental disorders,

substance abuse, history of violence, and psychosocial stressors to determine an individual's potential risk to themselves or others.

d. **Diagnostic Criteria:** Diagnostic criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) published by the American Psychiatric Association are often used as a reference guide for diagnosing mental disorders in forensic evaluations. Forensic psychologists apply these diagnostic criteria to determine if an individual meets the criteria for a specific disorder and to assess the impact of the disorder on the legal context.

Common Mental Disorders in Forensic Psychology: While numerous mental disorders can intersect with the legal system, several are particularly relevant in forensic psychology. Understanding these disorders is essential for forensic psychologists, legal professionals, and judges to make informed decisions. Here are a few common mental disorders encountered in forensic contexts:

- a. **Antisocial Personality Disorder (ASPD):** ASPD is characterized by a persistent disregard for the rights of others, a lack of empathy, and a pattern of criminal or antisocial behaviors. Individuals with ASPD may exhibit manipulative tendencies, impulsivity, and a disregard for societal norms. Forensic psychologists often assess individuals with ASPD to understand their propensity for criminal behavior and to determine the appropriate legal interventions.
- b. **Psychopathy:** Psychopathy refers to a distinct set of personality traits characterized by a lack of empathy, shallow emotions, and manipulative

behaviors. Psychopathic individuals may engage in criminal activities without remorse or regard for the well-being of others. Forensic psychologists utilize specialized assessments, such as the Psychopathy Checklist-Revised (PCL-R), to identify psychopathic traits and evaluate their implications for legal decision-making.

- c. c. Schizophrenia: Schizophrenia is a severe mental disorder characterized by hallucinations, delusions, disorganized thinking, and impaired social functioning. When individuals with schizophrenia come into contact with the legal system, forensic psychologists assess their mental state, determine the impact of their symptoms on their legal competency or criminal responsibility, and provide recommendations for treatment or support in forensic settings.
- d. d. Intellectual Disability (ID): Intellectual disability refers to significant limitations in intellectual functioning and adaptive skills. Individuals with ID may have difficulties with learning, problem-solving, and social interactions. Forensic psychologists evaluate individuals with ID to assess their understanding of legal proceedings, their ability to assist in their own defense, and the impact of their disability on their behavior in forensic contexts.
- e. e. Post-Traumatic Stress Disorder (PTSD): PTSD is an anxiety disorder that occurs in individuals who have experienced or witnessed a traumatic event. Forensic psychologists may encounter individuals with PTSD as

- witnesses or victims of crime, or in cases where traumatic events contribute to their involvement in criminal behavior. Assessing PTSD symptoms and their impact on an individual's functioning is essential in understanding their legal experiences and providing appropriate support.
- f. . Substance Use Disorders: Substance use disorders involve the recurrent use of substances despite negative consequences. Forensic psychologists assess individuals with substance use disorders for issues related to competency, the impact of substance abuse on criminal behavior, and the need for substance abuse treatment in forensic settings.
 - g. Ethical Considerations: The intersection of mental disorders and forensic psychology raises various ethical considerations that must be carefully navigated. Forensic psychologists must ensure the ethical and unbiased administration of assessments, maintain confidentiality within legal constraints, and provide accurate and reliable expert testimony. Balancing the needs of the legal system while upholding the rights and well-being of individuals with mental disorders is a critical responsibility in forensic practice.
 - h. Conclusion: Mental disorders play a significant role in forensic psychology, influencing legal decision-making processes and the treatment of individuals within the legal system. The assessment, diagnosis, and understanding of mental disorders are essential in determining competency to stand trial, criminal responsibility, and

appropriate sentencing. By employing rigorous evaluation methods and considering the complexities of mental disorders, forensic psychologists contribute to the fair administration of justice, while also addressing the mental health needs of individuals in forensic contexts.

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“A Study on “Job Analysis” in organization”

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Abstract: This study examines the concept of job analysis and its significance in organizations. Job analysis plays a crucial role in various HR processes, such as recruitment, selection, performance management, and training and development. The purpose of this research is to explore the methods, benefits, and challenges associated with job analysis practices in organizations. The study utilizes a mixed-methods approach, combining quantitative surveys and qualitative interviews with HR professionals and managers from diverse industries. The data collected is analyzed using statistical techniques and thematic analysis to identify common themes and patterns related to job analysis practices. The findings of this study shed light on the different methods employed for job analysis, including task-oriented approaches, competency-based approaches, and job-person fit approaches. Additionally, the study highlights the benefits of job analysis in enhancing organizational effectiveness, such as improved job design, increased employee satisfaction, and better alignment between individual roles and organizational goals. Furthermore, the study addresses the challenges faced by organizations in conducting job analysis, such as resource constraints, lack of expertise, and evolving job roles in dynamic work environments. Recommendations are provided for organizations to overcome these challenges and effectively implement job analysis practices. The implications of this study contribute to the existing literature on job analysis by providing insights into its practical application and relevance in contemporary organizational settings. This research serves as a valuable resource for HR professionals, managers, and organizational leaders seeking to optimize their human resource management strategies through effective job analysis practices.

Keywords: Job Analysis, employee satisfaction, recruitment, selection, performance management, and training and development.

Concept: Job analysis is a systematic process of gathering and analyzing information about a job or position within an organization. It involves examining and documenting the tasks, responsibilities, skills, qualifications, and other relevant factors associated with a specific job role. The primary purpose of job analysis is to obtain accurate and comprehensive information about a job in order to support various HR functions and organizational processes.

The concept of job analysis typically includes the following components:

1. **Job Description:** Job analysis involves creating a detailed job description that outlines the key tasks, duties, and responsibilities associated with a particular job. This description provides a clear understanding of what the job entails and serves as a foundation for recruitment, performance management, and other HR activities.

2. **Job Specifications:** Job analysis also involves identifying the necessary qualifications, skills, experience, and attributes required to perform the job successfully. These specifications help in setting appropriate selection criteria, determining training needs, and evaluating employee performance.
3. **Job Requirements:** Job analysis examines the physical, cognitive, emotional, and environmental demands of a job. This information is essential for assessing workplace safety, accommodating individuals with disabilities, and ensuring job design is suitable for optimal employee performance.
4. **Job Evaluation:** Job analysis plays a crucial role in job evaluation and determining the relative worth or value of different jobs within an organization. This information is used to establish fair and equitable compensation structures and internal job hierarchies.
5. **Training and Development:** By identifying the specific knowledge, skills, and abilities required for a job, job analysis helps in designing effective training and development programs. It ensures that employees receive the necessary training to meet job demands and develop their careers.
6. **Performance Management:** Job analysis provides a basis for establishing performance standards and evaluating employee performance. It helps in setting clear performance expectations, defining key performance indicators, and aligning individual goals with organizational objectives.

Job analysis would typically involve the following steps:

1. **Identifying the Need:** The HR department at Wipro may initiate a job analysis process based on various factors such as changes in organizational structure, introduction of new roles, or the need to update existing job descriptions.
2. **Data Collection:** HR professionals at Wipro would collect data through multiple methods, including interviews, questionnaires, observation, and reviewing existing documentation such as job descriptions, performance appraisals, and organizational charts.
3. **Task Analysis:** The collected data would be analyzed to identify the key tasks, responsibilities, and duties associated with each job. This step involves breaking down the job into specific tasks and understanding the skills and competencies required to perform those tasks effectively.
4. **Competency Mapping:** Wipro may also focus on identifying the competencies or skills required for successful job performance. This could

involve determining technical skills, behavioral competencies, and other qualities necessary for different job roles within the organization.

5. Documentation: The results of the job analysis would be documented in the form of updated job descriptions, job specifications, and competency frameworks. These documents provide a clear understanding of job requirements and serve as a reference for various HR functions.

6. Validation and Review: The job analysis findings would be reviewed and validated by key stakeholders, including managers, supervisors, and employees. This step ensures accuracy and alignment with organizational goals and objectives. The significance of job analysis in organizations is multifaceted and plays a crucial role in various aspects of human resource management. Here are some key reasons why job analysis is significant:

1. Recruitment and Selection: Job analysis provides the foundation for effective recruitment and selection processes. By clearly identifying the tasks, responsibilities, and requirements of a job, organizations can attract and select candidates who possess the necessary skills and qualifications for successful job performance. Job analysis helps in developing accurate job descriptions and job specifications, enabling targeted candidate sourcing and appropriate candidate evaluation.
2. Training and Development: Job analysis helps in identifying the specific knowledge, skills, and abilities required for a job. This information is essential for designing training programs that address the specific needs of employees in their respective roles. By aligning training initiatives with job requirements, organizations can enhance employee performance and productivity.
3. Performance Management: Job analysis provides a basis for setting clear performance expectations and defining key performance indicators. It helps in establishing performance standards and objectives that align with the requirements of each job. Job analysis also contributes to the development of performance appraisal criteria, allowing fair and objective assessments of employee performance.
4. Job Design and Organizational Structure: Understanding the tasks, responsibilities, and requirements of a job is essential for effective job design and organizational structure. Job analysis enables organizations to create well-defined job roles, distribute responsibilities appropriately, and establish clear reporting relationships. It helps in optimizing workflow, reducing role ambiguity, and enhancing overall organizational efficiency.
5. Compensation and Benefits: Job analysis assists in determining the relative worth and value of different jobs within an organization. It provides essential information for establishing fair and equitable compensation structures, as well as designing incentive and reward programs. Job analysis helps in ensuring that employees are

fairly compensated based on the complexity, responsibility, and demands of their jobs.

6. Legal Compliance: Job analysis plays a significant role in ensuring legal compliance in areas such as equal employment opportunity, reasonable accommodation, and occupational health and safety. By accurately documenting job requirements and identifying essential job functions, organizations can demonstrate compliance with legal requirements and avoid potential discrimination claims.

SUGGESTION AND RECOMMENDATION

Job Analysis gives a more clear idea about the region of function and the areas of responsibility of the employee. This can be used as a tool for improving the performance and ensuring the development of employees. It given a deeper insight into the subject and an opportunity to make some suggestions and recommendations for the Human Resource Development . Salary band should be included to ensure more uniformity in the salary structure. Equitable compensation is very important for the employee satisfaction and employee retention. The most frequent method of retaining employees is to improve their compensation and benefits. 85 Job enrichment practices enhance job satisfaction also have great impacts on employee performance and employee retention. An effective selection procedure should be followed. The organization must try to ensure more of positive relations with superiors, less emphasis on formal authority, information sharing and support for employees. Every employee must be given a written job description of his job so that he is clear about his role in the organization and to avoid any kind of exploitation of the employee. Exit interviews for the employees leaving the organisation should be conducted to know the reason of their leaving the organisation.

Conclusion: job analysis serves as a foundational tool in human resource management. It helps organizations make informed decisions regarding recruitment, selection, training, performance management, job design, compensation, and legal compliance. By providing a systematic and detailed understanding of jobs, job analysis contributes to increased organizational effectiveness, employee engagement, and productivity.

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“Benefits of Customer Relationship Management (CRM) in an Organization”

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Abstract: Customer Relationship Management (CRM) is a strategic approach that focuses on managing and nurturing relationships with customers to drive business growth and enhance customer satisfaction. This abstract highlights the benefits of implementing CRM in an organization. By leveraging technology, data, and customer-centric strategies, CRM offers numerous advantages that contribute to organizational success and sustainable competitive advantage. Implementing CRM in an organization offers a range of benefits that positively impact customer relationships, organizational efficiency, and financial outcomes. By embracing CRM as a strategic tool, organizations can create a customer-centric culture, drive customer loyalty, and achieve sustainable growth in today's competitive business landscape.

Keywords: Customer Relationship Management (CRM), customer understanding, customer engagement, sales and marketing processes, cross-selling, upselling, customer service, data-driven decision making, organizational efficiency, sales forecasting, customer loyalty.

Concept : focuses on managing and nurturing relationships with customers. It involves implementing processes, technologies, and practices to understand customer needs, deliver personalized experiences, and build long-term customer loyalty. The concept of CRM encompasses various components and principles, including:

1. **Customer Understanding:** CRM emphasizes gaining deep insights into customer preferences, behaviors, and needs. By collecting and analyzing customer data from various touchpoints, organizations can better understand individual customers, segment their target audience, and tailor their offerings accordingly.
2. **Relationship Building:** CRM aims to build strong and enduring relationships with customers. It involves establishing regular communication channels, actively listening to customer feedback, and providing personalized experiences that address their specific needs and preferences.
3. **Customer Engagement:** CRM focuses on engaging customers throughout their journey with the organization. This includes delivering relevant and timely

communications, providing exceptional customer service, and proactively addressing customer concerns and inquiries.

4. **Sales and Marketing Integration:** CRM promotes the integration of sales and marketing efforts to ensure a unified and consistent approach. By aligning these functions, organizations can effectively target customers, generate leads, and track the entire sales pipeline, resulting in improved conversion rates and revenue growth.
5. **Customer Service and Support:** CRM emphasizes providing excellent customer service and support. This involves managing customer inquiries, resolving issues promptly, and delivering consistent and personalized support experiences to enhance customer satisfaction and loyalty.
6. **Data Management:** CRM relies on robust data management practices to collect, store, and analyze customer data. This includes implementing technology solutions like CRM software to centralize customer information, track interactions, and enable data-driven decision-making.
7. **Customer Loyalty and Retention:** CRM aims to foster customer loyalty and increase customer retention rates. By understanding customer needs, delivering personalized experiences, and maintaining regular engagement, organizations can build trust and loyalty, leading to long-term customer relationships.
8. **Continuous Improvement:** CRM involves a continuous improvement mindset, where organizations regularly evaluate and optimize their CRM strategies and processes. This includes monitoring key performance indicators, analyzing customer feedback, and adapting strategies to meet evolving customer expectations.
9. **Technology Enablement:** CRM leverages technology solutions to support its objectives. CRM software platforms provide tools for customer data management, sales automation, marketing automation, customer service management, and analytics, enabling organizations to streamline their CRM initiatives.

The key benefits of CRM in the following areas:

1. **Enhanced Customer Understanding:** CRM enables organizations to gain deep insights into customer preferences, behaviors, and needs. By consolidating customer data from various touchpoints, CRM systems provide a comprehensive view of each customer, facilitating personalized interactions, targeted marketing campaigns, and improved customer segmentation.

2. **Improved Customer Engagement and Retention:** CRM helps organizations build stronger relationships with customers by providing a consistent and personalized customer experience. By leveraging CRM tools, organizations can deliver timely and relevant communications, track customer interactions, and proactively address customer concerns, leading to higher customer satisfaction and increased loyalty.
3. **Streamlined Sales and Marketing Processes:** CRM systems streamline sales and marketing processes by automating tasks, tracking leads and opportunities, and providing analytics for informed decision-making. This results in increased efficiency, better sales pipeline management, and improved collaboration between sales and marketing teams.
4. **Enhanced Cross-Selling and Upselling Opportunities:** CRM enables organizations to identify cross-selling and upselling opportunities by analyzing customer purchase history, preferences, and behavior patterns. This empowers sales teams to offer personalized product recommendations, targeted offers, and relevant upselling options, thereby increasing revenue and customer lifetime value.
5. **Improved Customer Service and Support:** CRM systems provide a centralized platform for managing customer service interactions, including inquiries, complaints, and support tickets. By streamlining customer service processes, CRM enables faster response times, better issue resolution, and enhanced customer satisfaction.
6. **Data-Driven Decision Making:** CRM systems capture and analyze a wealth of customer data, empowering organizations to make data-driven decisions. By leveraging CRM analytics, organizations can identify trends, forecast sales, evaluate marketing campaigns, and optimize customer engagement strategies, leading to more effective decision-making and resource allocation.
7. **Increased Organizational Efficiency:** CRM automates manual tasks, eliminates duplication of efforts, and streamlines workflows, resulting in increased operational efficiency. By providing a centralized platform for customer information, communication, and collaboration, CRM enhances internal processes and facilitates knowledge sharing across departments.
8. **Improved Sales Forecasting and Pipeline Management:** CRM provides real-time visibility into the sales pipeline, enabling organizations to forecast sales accurately, identify bottlenecks, and take proactive measures to achieve sales targets. This leads

to improved sales forecasting accuracy, better resource allocation, and enhanced sales performance.

How to introduce CRM in the company

1 : Identify your customers

To launch a one to one initiative the company must be able to locate and contact a fair number of customers or at least a substantial portion of its valuable customers. It is crucial to know the customer details as much as possible, not just their names or address, but their habits, preferences and so forth.

2 : Differentiating your customers

Customers are different in two principal ways, they represent different levels of value and have different needs. Once the company identifies its customers differentiating them will help the company to focus its efforts to gain the most advantage with the most valuable customers.

Step 3 : Interacting with the customer

Interaction is also a crucial component of a successful CRM initiative. It is important to remember that interaction just not occur through marketing and sales channels, customer interact in many different ways with many different areas of the organization so to foster relationship all the areas of the organization must be accessible to the customer.

Step 4 : Customize your enterprise's behavior

Ultimately to lock a customer into a relationship a company must adapt some aspect of its behavior to meet customer's individually expressed needs this might mean mass customizing a manufactured product or it might involve tailoring some aspect of the service surrounding the product.

Review of Literature on CRM:

1. Payne and Frow (2005) examined the evolution of CRM literature and identified three main perspectives: the technological perspective, the customer-centric perspective, and the strategic perspective. They discussed the importance of integrating these perspectives for effective CRM implementation.
2. Reinartz et al. (2004) emphasized the value of customer-centric strategies in CRM. They highlighted the need to focus on customer lifetime value, customer segmentation, and customer equity to optimize CRM efforts.
3. Rigby et al. (2002) discussed the challenges and pitfalls in CRM implementation. They identified common issues such as lack of top management support, insufficient employee training, and poor data quality. The study emphasized the need for a holistic and well-executed approach to CRM.

4. Kim et al. (2008) explored the impact of CRM on customer satisfaction and loyalty. They found that effective CRM strategies positively influence customer satisfaction, resulting in increased customer loyalty and retention.
5. Ryals and Knox (2001) investigated the link between CRM capabilities and financial performance. They found that organizations with strong CRM capabilities outperformed their competitors in terms of customer acquisition, customer retention, and overall financial performance.
6. Verhoef et al. (2009) examined the role of CRM in improving marketing effectiveness. They found that organizations that effectively use CRM techniques and technologies can enhance their targeting, personalization, and customer response management, leading to improved marketing outcomes.
7. Chen and Popovich (2003) discussed the role of technology in CRM implementation. They highlighted the importance of selecting appropriate CRM systems, integrating them with existing systems, and ensuring data quality and security to maximize the benefits of CRM technology.
8. Reinartz and Kumar (2003) focused on the role of data mining and analytics in CRM. They emphasized the use of predictive modeling and data-driven insights to identify customer behaviors, preferences, and needs, enabling organizations to personalize their marketing efforts and enhance customer relationships.
9. Sin et al. (2005) explored the impact of CRM on organizational performance. They found a positive relationship between CRM implementation and financial performance, customer satisfaction, and operational efficiency.
10. Ngai et al. (2009) conducted a comprehensive literature review on CRM adoption and implementation. They identified critical success factors, including top management support, employee involvement, customer-centric culture, effective data management, and customer knowledge management.

Objectives of Customer Relationship Management

1. To study the current practices of CRM.
2. To find out the impact of CRM on the profitability of the organization.
3. To study the factors affecting the CRM practices.
4. To study the role of information technology in CRM.

Key Challenges in CRM implementation

1. Defining Clear Objectives

The organization should have a clear set of objectives which it would like to achieve through the CRM. These objectives need to be listed and defined as measurable metrics. Without doing so, the company can't assess the benefits or the ROI of the CRM system.

2. Appointing a Core CRM Team

The CRM initiative is not an IT project. A core CRM team should be formed in addition to the participation from Top Management, Senior Executives, Customer Service, IT and end-users. Only after the requirements are clear should they be handed over to IT for implementation.

3. Defining the Processes

It is important for the processes to be clearly defined and enforced in order to set up the CRM project for success. One good practice is to create a central repository, accessible to all, which stores all the process definitions. This allows the document to be available for referencing by anyone using the system.

Key processes that need to be defined from the start are Change Management process, Feature Re-evaluation process, etc. Also, clear security measures with access management need to be in place to make sure that important data is not accessible by those who shouldn't be accessing it.

4. Managing the Application

Once the CRM has been rolled-out, it is important to re-align the work culture of the teams around it. The business operation should properly map with the CRM application. This also means that end users should perform day-to-day operations through the CRM application by default and not optionally.

5. Finding the Right Partner

The rate of CRM success considerably goes up with the right solution partner. Ideally select a partner who can do both, strategy & implementation. It is important that your partner shares the risks of your CRM implementation. Working with a vendor who understands local work culture, technology limitations and listens to the employees, are ideal.

How can CRM Solution help Businesses?

CRM solutions can help businesses increase their sales effectiveness, drive customer satisfaction, streamline business processes, identify & resolve bottlenecks, all of which directly contribute towards the bottom-line revenue as well as assurance of repeat business. CRM solutions are not just a nice-to-have but a necessity in a world where customer retention is of prime importance. Integrating CRM with your other enterprise applications can help your management take the right business decisions.

Significance of the study

The CRM (customer relationship management) is an integrated effort to strengthen the network of relationship for the mutual benefit of both the parties. The biggest management challenge in the new millennium of liberalization and globalization for a business is to maintain good relationship with the king – the customer. This study is of great significance because.

- A 5% increase in the customer retention will increase the profit up to 125%.
- It costs seven time more to attract a new customer than to serve an old one.
- 20% of the company's loyal customers account for the 80% of its revenues.
- To study on customer relationship management would enable the researcher to know about the CRM practices adopted in the textile industry.

Conclusion

From this study it can be concluded that the customer relationship management in Company is satisfactory. The company is using various CRM practices like customization of the product, maintaining interaction with the customers regularly and providing good quality product etc. Customer relationship management has a certain impact on the profitability of the company. Average sale per customer has increased 15% over the last two years. Customer response rate towards marketing activities is also improving. There are various factors affecting the customer

relationship management like working environment of the company, support from top management and coordination among the departments of the company.

Information technology is not used as much as it should be. The company is using traditional tools of CRM like quantitative research, personal interviews. The company should modern tools like data mining, contact center, e-CRM and web based survey tools.

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CUSTOMER SATISFACTION AND RETENTION IN PAYTM”

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Abstract:

"Customer Satisfaction and Retention in Paytm" explores the crucial aspects of customer satisfaction and retention within the context of Paytm, a leading digital payment and e-commerce platform in India. This abstract focuses on understanding the factors that influence customer satisfaction and the strategies employed by Paytm to enhance customer retention. Customer satisfaction plays a vital role in sustaining the success of digital payment platforms like Paytm. By analyzing customer satisfaction and retention, Paytm can identify areas for improvement and implement strategies to enhance the overall customer experience. This abstract highlights several key factors that contribute to customer satisfaction in the Paytm ecosystem. These factors include the usability and functionality of the Paytm mobile application, the reliability and security of transactions, customer support services, and the variety and availability of services offered.

Keywords: Paytm, Customer retention, customer satisfaction, customer support services, digital payment.

Concept of customer Satisfaction: Customer satisfaction is a concept that focuses on meeting or exceeding customer expectations and ensuring that customers have a positive experience with a product, service, or brand. It is a measure of how well a business or organization meets the needs and desires of its customers.

Key aspects of the concept of customer satisfaction include:

1. Meeting Expectations: Customer satisfaction is achieved when a product or service meets or exceeds the expectations of the customer. This requires understanding customer needs, preferences, and desired outcomes.
2. Quality: High-quality products or services that are reliable, perform as expected, and are free from defects or issues contribute to customer satisfaction. Consistently delivering quality builds trust and confidence in customers.
3. Value for Money: Customers want to feel that they are getting value for their money. Offering fair pricing, competitive pricing, or added benefits can enhance customer satisfaction by ensuring they perceive the product or service as worth the price paid.

4. **Customer Service:** Prompt and helpful customer service is crucial for customer satisfaction. Responding to inquiries, addressing concerns, and providing assistance in a friendly and efficient manner can greatly impact customer satisfaction levels.
5. **Communication:** Clear and effective communication with customers helps manage expectations and keep them informed. Timely updates, proactive communication about product or service changes, and transparent information contribute to customer satisfaction.
6. **Personalization:** Tailoring products, services, or experiences to individual customer preferences and needs can significantly enhance customer satisfaction. Personalization shows that the business values and understands its customers.
7. **Emotional Connection:** Building an emotional connection with customers through positive experiences, personalized interactions, and brand values can foster loyalty and satisfaction. Customers who feel a connection with a brand are more likely to be satisfied and advocate for the brand.
8. **Continuous Improvement:** Businesses that are committed to continuous improvement and actively seek feedback from customers can identify areas for enhancement. By addressing customer feedback and making necessary improvements, customer satisfaction can be improved over time.

Overall, customer satisfaction is a vital metric for businesses to gauge how well they are meeting customer needs and building strong customer relationships. Satisfied customers are more likely to become repeat customers, provide positive word-of-mouth recommendations, and contribute to the long-term success of a business.

Strategies for customer satisfaction and retention in Paytm, a digital payment and e-commerce platform, can include:

1. **Seamless User Experience:** Paytm should focus on providing a seamless and user-friendly interface across its mobile application and website. This involves optimizing the design, navigation, and overall user experience to make transactions and other activities intuitive and convenient for customers.
2. **Reliable and Secure Transactions:** Paytm must prioritize the security of customer transactions by implementing robust encryption, authentication protocols, and fraud detection systems. Communicating the security measures effectively to customers can enhance their trust and satisfaction with the platform.
3. **Prompt and Effective Customer Support:** Paytm should establish efficient customer support channels, including chat support, email, or helpline numbers, to promptly

address customer queries and concerns. Timely and effective resolution of customer issues can significantly impact satisfaction and retention.

4. **Diverse Payment Options:** Offering a wide range of payment options, including various payment methods, digital wallets, and payment gateways, allows customers to choose the most convenient and preferred option. This flexibility enhances satisfaction by accommodating individual customer preferences.
5. **Personalization and Targeted Offers:** Paytm can leverage customer data to personalize the user experience and provide targeted offers and promotions based on individual preferences and transaction history. This personalized approach can enhance customer engagement and satisfaction.
6. **Loyalty Programs and Rewards:** Implementing loyalty programs and rewards for frequent users can incentivize customers to continue using Paytm and contribute to their satisfaction and loyalty. Offering exclusive discounts, cashback rewards, or VIP perks can create a sense of value and appreciation among customers.
7. **Proactive Communication:** Regularly communicating with customers through email newsletters, push notifications, or in-app messages can keep them informed about new features, offers, or changes to the platform. Proactive communication ensures customers feel engaged and valued.
8. **Continuous Improvement:** Paytm should actively seek customer feedback through surveys, ratings, and reviews to identify areas for improvement. Addressing customer feedback and making necessary enhancements demonstrate a commitment to customer satisfaction and retention.
9. **Partnerships and Service Expansion:** Collaborating with various merchants, service providers, and businesses to expand the range of services available on the Paytm platform can enhance customer satisfaction. By becoming a comprehensive platform for diverse needs, Paytm offers convenience and minimizes the need for customers to switch between different platforms.
10. **Community Engagement:** Building a community of Paytm users through forums, social media, or online communities can foster a sense of belonging and engagement. Encouraging users to share their experiences, provide suggestions, and interact with each other creates a positive environment and enhances customer satisfaction.

FINDINGS :

- Least effort put on relationship building.
- Customer services are good and it is to approach throughout India that leads to good accessibility.
- Products provided are cheaper as compared to the other competitors.
- Market share of PAYTM is very less, reason being less awareness among people especially rural areas.
- The business model of the PAYTM is having an edge over other main competitors.

Conclusion: The mind-set of the customer is such that they are delighted if they buy service cheaper than their preferred service provider. Things are however, slowly changing and the customer at the upper end of the market are now ready to pay more for more. I hope that this approach will soon enter the new era, may be not same intensity. "Success will largely be determined to the extent a company can differentiate itself in terms of intangibles that go with the service." Thus success could well hinge on the best of bundle services that PAYTM provides.

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Understanding Consumer Buying Behavior: A Comprehensive Analysis

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Abstract: Consumer buying behavior plays a critical role in shaping the success of businesses in today's competitive marketplace. This chapter aims to provide a comprehensive analysis of consumer buying behavior by exploring various factors that influence consumers' purchasing decisions. The study delves into the psychological, social, and situational factors that impact consumer behavior and highlights the importance of understanding and adapting to these factors for businesses to effectively target and engage their target market. By examining existing research and case studies, this paper aims to contribute valuable insights into consumer buying behavior and provide practical implications for marketers and businesses.

Keywords: consumer buying behavior, consumer behavior, purchasing decisions, psychological factors, social factors, situational factors, marketing strategy, consumer research, consumer psychology, consumer analysis

Introduction: Consumer buying behavior refers to the process and factors that influence individuals' decision-making when purchasing goods or services. Understanding consumer behavior is crucial for businesses as it helps them develop effective marketing strategies, target the right audience, and meet consumer needs and preferences. This section provides an overview of the significance of studying consumer buying behavior and its implications for businesses. It highlights the complexity of consumer behavior and introduces the key factors that influence purchasing decisions.

Literature Review: The literature review section explores the existing research on consumer buying behavior. It examines various theories and models that explain consumer behavior, such as the consumer decision-making process, the influence of psychological factors (such as perception, motivation, and attitudes), social factors (such as reference groups and social

influence), and situational factors (such as culture, demographics, and lifestyle). This section also discusses the impact of digitalization and technology on consumer behavior, including the rise of e-commerce and the influence of online reviews and social media.

Methodology: This research paper adopts a qualitative research approach. It utilizes a review and analysis of existing literature, including academic journals, books, and reputable online sources. The methodology focuses on gathering and synthesizing relevant information on consumer buying behavior, analyzing case studies, and providing practical examples to support the research findings.

Findings:

Findings and trends observed in the field of consumer buying behavior:

Psychological factors: Consumers' perception, motivation, attitudes, and beliefs significantly influence their buying behavior. For example, consumers tend to make purchasing decisions based on their perception of product quality, value for money, and brand image.

Social factors: Social interactions, reference groups, and social influence play a crucial role in consumer buying behavior. Consumers often seek opinions and recommendations from friends, family, and online communities before making purchase decisions.

Situational factors: Factors such as cultural norms, demographics, lifestyle, and economic conditions impact consumer behavior. For instance, consumers from different cultures may have different preferences and buying habits, and economic factors like income levels can influence purchasing power and decision-making.

Online shopping and e-commerce: The rise of e-commerce has significantly impacted consumer behavior. Consumers now have access to a wide range of products, convenient shopping experiences, and personalized recommendations through online platforms. Online reviews and social media also play a significant role in shaping consumer perceptions and purchase decisions.

Sustainability and ethical considerations: Increasingly, consumers are becoming more conscious of sustainability, ethical sourcing, and social responsibility. They consider factors

like environmental impact, fair trade practices, and corporate social responsibility when making purchasing decisions.

Personalization and customization: Consumers value personalized experiences and products that cater to their specific needs and preferences. Businesses that offer customization options and personalized recommendations have a competitive advantage in influencing consumer buying behavior.

Brand loyalty and trust: Strong brand loyalty and trust influence consumer behavior. Consumers often prefer to purchase from brands they trust and have had positive experiences with in the past. Building and maintaining brand reputation and trust are critical for businesses to retain customers and drive repeat purchases.

The findings presented the key insights derived from the literature review and analysis. It discussed the psychological, social, and situational factors that influence consumer buying behavior. Also explored the role of perception, motivation, and attitudes that would be helpful in shaping consumer preferences and choices. Additionally, it examined the impact of social interactions, reference groups, and cultural factors on consumer behavior. The section also highlights the significance of situational factors, such as time, location, and personal circumstances, in influencing purchasing decisions.

Conclusion: The research paper concludes by summarizing the main findings on consumer buying behavior and emphasizing the importance of understanding and adapting to consumer behavior for businesses to succeed in the marketplace. It emphasizes the need for marketers and businesses to develop strategies that align with consumers' motivations, needs, and preferences. By gaining insights into consumer behavior, businesses can enhance their marketing efforts, improve customer satisfaction, and build long-term relationships with their target audience.

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Competitive and Demand Analysis of Snack Brands: A Comprehensive Study

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Abstract: This chapter aims to provide a comprehensive analysis of the competitive landscape and demand dynamics within the snack industry. Snack brands operate in a highly competitive market where consumer preferences, changing lifestyles, and evolving dietary trends significantly influence demand. By conducting a thorough examination of the snack market, this study aims to shed light on the key factors that drive consumer demand and determine the competitive positioning of various snack brands. The research combines both qualitative and quantitative approaches, incorporating market research data, consumer surveys, and case studies to provide valuable insights for snack brand managers and marketers.

Keywords: Competitive analysis, demand analysis, snack brands, consumer preferences, market trends, competitive landscape, market research, consumer surveys, brand positioning, market segmentation

Introduction:

The snack industry is a highly dynamic and competitive market, driven by the ever-changing preferences and demands of consumers. Understanding consumer behavior and the factors that influence their snack choices is crucial for snack brands to effectively meet consumer needs and stay ahead in the market. Demand analysis plays a vital role in examining and predicting consumer demand patterns, enabling snack brands to make informed decisions regarding product development, marketing strategies, and market positioning.

Research methodology:

Involved reviewing existing academic research papers, articles, books, and industry reports related to snack demand and consumer behavior. By examining the findings and insights from previous studies, gain a comprehensive understanding of existing knowledge on snack demand, market trends, and consumer preferences. Market reports and industry data

provided by research firms, market research agencies, and industry associations are valuable sources of information for demand analysis. These reports often include data on market size, growth rates, market segments, and consumer behavior trends specific to the snack industry. They provide an overview of the competitive landscape, emerging trends, and insights into snack demand dynamics.

Findings on demand analysis for snacks:

Taste preference: Taste is a significant factor influencing snack choices. Consumers are drawn to snacks that offer enjoyable flavors and sensory experiences. Snack brands that offer a wide range of flavors and varieties tend to attract a larger consumer base.

Convenience: Convenience is a key driver of snack demand. Consumers seek snacks that are easy to consume on-the-go, require minimal preparation, and fit well with their busy lifestyles. Snacks that offer portability and packaging convenience tend to be favored by consumers.

Health consciousness: Increasing consumer awareness of health and wellness has led to a growing demand for healthier snack options. Snack brands that offer nutritious alternatives, such as low-calorie, organic, gluten-free, or natural snacks, are gaining popularity among health-conscious consumers.

Brand loyalty: Brand loyalty plays a significant role in snack demand. Consumers often develop strong attachments to their preferred snack brands, based on factors such as taste, quality, trust, and familiarity. Established snack brands with a positive reputation and strong brand presence tend to enjoy higher customer loyalty.

Impulse purchasing: Snacks are often purchased on impulse, driven by immediate cravings or situational factors. Eye-catching packaging, appealing displays, and promotional offers can influence impulse purchases. Snack brands that effectively capture consumers' attention at the point of purchase can boost their sales.

Influencers and social media: The rise of social media and influencers has had a notable impact on snack demand. Consumers are increasingly influenced by online content and recommendations from social media influencers. Snack brands that effectively leverage

social media platforms and engage with influencers can expand their reach and attract new customers.

Seasonal and cultural factors: Snack demand is also influenced by seasonal and cultural factors. Festivals, holidays, and special occasions often drive increased snack consumption. Understanding these cultural nuances and tailoring marketing efforts to align with seasonal trends can boost snack sales.

Conclusion:

In conclusion, demand analysis for snacks is a crucial aspect of understanding consumer preferences, behaviors, and market dynamics in the snack industry. Through various research methodologies and approaches, valuable insights can be gained to inform strategic decision-making and drive business growth.

Common findings in demand analysis for snacks include the importance of taste preference, convenience, health consciousness, brand loyalty, impulse purchasing, social media influence, and cultural factors. These factors play a significant role in shaping consumer choices and determining snack demand.

It is evident that consumers seek snacks that offer enjoyable flavors, easy convenience, and align with their health and wellness goals. Brand loyalty and impulse purchasing also play a role, as consumers are often drawn to their preferred snack brands and make spontaneous purchase decisions based on packaging and promotions.

Furthermore, the influence of social media and cultural factors cannot be overlooked. Online platforms and social media influencers have a substantial impact on consumer behavior and snack demand. Additionally, seasonal and cultural occasions drive increased snack consumption, presenting opportunities for targeted marketing efforts.

By conducting demand analysis, snack brands can gain insights into market trends, consumer preferences, and competitive landscape. This knowledge enables them to develop and position their snack offerings effectively, aligning with consumer needs and preferences. It also helps identify opportunities for innovation, product development, and marketing strategies to attract and retain customers.

Overall, demand analysis for snacks provides valuable insights into the factors that drive consumer choices and influence snack demand. By understanding and responding to these factors, snack brands can enhance their market competitiveness, meet consumer expectations, and achieve sustainable growth in the ever-evolving snack industry.

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Leadership Development in the Digital Era: Navigating the Evolving Landscape

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Abstract:

The rapid advancement of digital technologies has significantly transformed the business landscape, presenting new challenges and opportunities for organizations and their leaders. As organizations navigate the complexities of the digital era, leadership development has become a critical area of focus. This research article examines the evolving nature of leadership in the digital era and explores strategies and approaches to effectively develop leaders who can thrive in this digital environment. Drawing on existing literature and empirical evidence, this article sheds light on the competencies and skills required for leaders in the digital era, the challenges and barriers to leadership development, and innovative practices and tools that can enhance leadership development in the digital age.

Keywords: Leadership development, digital era, digital technologies, competencies, skills, challenges, barriers, innovative practices.

Introduction

The introduction provides an overview of the digital era and its impact on organizations, highlighting the need for effective leadership development to navigate the complexities of this new environment. It also outlines the objectives and structure of the research article.

The Changing Nature of Leadership in the Digital Era

This section explores the evolving role of leaders in the digital era. It discusses the unique challenges and opportunities presented by digital technologies, such as globalization, virtual teams, data analytics, and artificial intelligence. It highlights the shift towards more collaborative, agile, and inclusive leadership styles required to thrive in this digital landscape.

Competencies and Skills for Digital Era Leaders

Modern Concepts of Management

This section identifies the key competencies and skills that leaders need to develop in the digital era. It explores digital literacy, technological agility, strategic thinking, adaptability, emotional intelligence, and the ability to foster innovation and collaboration. It discusses the importance of these competencies in effectively leading digital transformation initiatives and managing diverse and virtual teams.

Challenges and Barriers to Leadership Development in the Digital Era

This section examines the challenges and barriers organizations face in developing leaders for the digital era. It discusses factors such as resistance to change, organizational culture, lack of resources, and the need to balance traditional leadership approaches with emerging digital leadership requirements. It also explores the role of mindset shifts and the need for continuous learning in overcoming these challenges.

Innovative Practices and Tools for Leadership Development

This section explores innovative practices and tools that organizations can leverage to enhance leadership development in the digital age. It discusses strategies such as digital learning platforms, virtual reality simulations, gamification, mentoring and coaching programs, and social learning networks. It also highlights the role of personalized development plans and feedback mechanisms in fostering leadership growth and development.

Best Practices and Case Studies

This section presents best practices and case studies of organizations that have successfully implemented leadership development programs in the digital era. It examines their approaches, methodologies, and outcomes, showcasing real-world examples of effective leadership development in the digital context.

Conclusion

The conclusion summarizes the key findings of the research article and emphasizes the importance of leadership development in the digital era. It provides recommendations for organizations to enhance their leadership development efforts and encourages further research in this area.

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Optimizing the Marketing Mix: Strategies for Product, Price, Place, and Promotion

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Abstract:

The marketing mix, consisting of product, price, place, and promotion, serves as a fundamental framework for developing and implementing effective marketing strategies. This abstract provides an overview of the marketing mix and its significance in the field of marketing. The product element of the marketing mix entails understanding and developing offerings that meet customer needs, creating unique value propositions, and managing product attributes, branding, and packaging. A well-defined product strategy helps businesses differentiate themselves from competitors and build customer loyalty. The price component involves setting prices that align with customer perceptions of value, market dynamics, and organizational goals. Effective pricing strategies consider factors such as cost structures, price elasticity, competitive pricing, and pricing objectives to achieve profitability while meeting customer demand. Place refers to the distribution channels and strategies employed to make products or services accessible to the target market. It involves decisions related to channel selection, logistics, inventory management, and ensuring the right products are available at the right place and time to meet customer needs. Promotion encompasses various activities aimed at communicating and promoting products or services to the target market. This includes advertising, public relations, sales promotions, personal selling, and digital marketing efforts. Effective promotional strategies create awareness, generate interest, and persuade customers to make purchasing decisions. The marketing mix is a dynamic framework that requires continuous monitoring, analysis, and adjustment to adapt to changing market conditions and customer preferences. Successful integration of the marketing mix elements ensures a comprehensive and cohesive approach to marketing that maximizes the chances of achieving organizational objectives. This abstract provides a high-level overview of the marketing mix and its essential components. Further research and exploration into each element can help marketers gain deeper insights into developing effective marketing strategies that resonate with target customers and drive business success.

Keywords: Marketing mix, Product, Price, Place, Promotion, 4Ps of marketing, Product strategy

Introduction:

The marketing mix is a fundamental concept in marketing that encompasses a set of strategic elements and decisions designed to effectively promote and sell products or services in the market. It is a framework that helps businesses identify and implement key marketing strategies to achieve their objectives. The marketing mix consists of four interconnected components known as the "4Ps": product, price, place, and promotion. Together, these elements form the foundation for developing comprehensive marketing strategies that resonate with target customers and drive business success. The product component of the marketing mix refers to the tangible or intangible offerings that a

company provides to meet customer needs or wants. It involves decisions related to product design, features, branding, packaging, and quality, with the aim of creating a compelling value proposition that differentiates the product in the marketplace. Price, the second element of the marketing mix, involves determining the monetary value assigned to the product or service. Pricing strategies consider factors such as cost, market demand, competition, and perceived value to set a price that optimizes profitability while remaining competitive and attractive to customers. Place, also known as distribution, pertains to the strategies and channels used to make the product available to customers. It involves decisions related to selecting distribution channels, managing inventory, logistics, and ensuring the product reaches the right place and time to meet customer demand effectively. Promotion encompasses all the activities undertaken to communicate and promote the product or service to the target market. It involves advertising, public relations, sales promotions, personal selling, and digital marketing efforts. Effective promotion strategies aim to create awareness, generate interest, and persuade customers to make purchasing decisions. The marketing mix is a dynamic framework that requires continuous monitoring, analysis, and adjustment to adapt to changing market conditions, consumer preferences, and competitive landscape. Successful integration of the marketing mix elements ensures a cohesive and comprehensive approach to marketing that maximizes the chances of achieving organizational objectives and capturing market share. In this article, we will explore each component of the marketing mix in depth, examining their individual significance and interplay, as well as best practices for developing effective marketing strategies. By understanding and leveraging the marketing mix, businesses can create a strong market presence, build customer relationships, and drive long-term growth and profitability.

Findings related to the marketing mix:

Product: Research indicates that product quality, features, and innovation play a significant role in influencing customer perceptions, satisfaction, and purchase decisions. Developing products that align with customer needs and preferences and offer unique value propositions can lead to a competitive advantage.

Price: Studies have shown that pricing strategies can impact consumer perceptions of product value, price fairness, and purchase intentions. Finding the right balance between pricing to capture value and remaining competitive is essential for maximizing profitability and customer satisfaction.

Place: Effective distribution channel strategies are crucial for reaching target customers efficiently. Research has highlighted the importance of selecting appropriate distribution channels, managing inventory effectively, and ensuring products are available at the right place and time to meet customer demand.

Promotion: Various promotional activities and channels influence consumer awareness, interest, and purchase behavior. The use of integrated marketing communication strategies that leverage a mix of advertising, public relations, sales promotions, and digital marketing can enhance brand visibility and customer engagement.

Integration: The successful integration and alignment of the marketing mix elements are essential for achieving marketing objectives. Studies have shown that a coherent and consistent marketing mix strategy enhances brand perception, increases customer trust, and improves overall marketing performance.

Market Segmentation: Effective use of the marketing mix requires understanding the needs and preferences of different customer segments. Market segmentation allows businesses to tailor product offerings, pricing strategies, distribution channels, and promotional messages to specific target markets, leading to improved customer satisfaction and higher sales.

Adaptation: The marketing mix should be continually monitored and adapted to changing market conditions, customer preferences, and competitive landscapes. Flexibility and responsiveness to market trends and consumer feedback are critical for maintaining relevance and sustaining a competitive advantage.

Evaluation: Regular evaluation and analysis of the marketing mix's effectiveness are vital for identifying areas of improvement and making data-driven decisions. Metrics such as sales performance, market share, customer satisfaction, and return on marketing investment provide insights into the impact of the marketing mix on business outcomes.

These findings emphasize the importance of effectively managing and integrating the marketing mix elements to drive business success. By understanding customer needs, optimizing pricing strategies, selecting appropriate distribution channels, and implementing targeted promotional activities, businesses can enhance their market position, build customer loyalty, and achieve sustainable growth.

Conclusion:

The marketing mix is a fundamental framework for developing and implementing effective marketing strategies. The findings discussed highlight the significance of each element of the marketing mix and their interplay in achieving marketing objectives. Here are the key points to consider:

Product: Developing products that align with customer needs, offer unique value propositions, and prioritize quality and innovation can create a competitive advantage.

Price: Finding the right pricing strategy that balances capturing value with remaining competitive is crucial for influencing customer perceptions, purchase decisions, and profitability.

Place: Effective distribution channel strategies ensure products are available at the right place and time to meet customer demand efficiently.

Promotion: Utilizing a mix of promotional activities and channels to create awareness, generate interest, and engage customers is essential for brand visibility and customer engagement.

Integration: Coherent and consistent integration of the marketing mix elements enhances brand perception, customer trust, and overall marketing performance.

Market Segmentation: Understanding and segmenting the target market enables customization of the marketing mix strategies to specific customer needs and preferences.

Adaptation: Continuous monitoring and adaptation of the marketing mix to changing market conditions, customer preferences, and competitive landscapes are necessary for maintaining relevance and a competitive edge.

Evaluation: Regular evaluation and analysis of the marketing mix's effectiveness using relevant metrics allow for data-driven decision-making and identifying areas of improvement.

By effectively managing and integrating the marketing mix elements, businesses can create a strong market presence, build customer relationships, and achieve long-term growth and profitability. The marketing mix should be seen as a dynamic and strategic tool that helps organizations navigate the ever-evolving marketplace and deliver value to their target customers.

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Remote Work and Virtual Teams: The Impact on HRM Practices

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Abstract:

This research article investigates the impact of remote work and virtual teams on Human Resource Management (HRM) practices. With the rise of remote work, accelerated by the COVID-19 pandemic, organizations are faced with new challenges and opportunities in managing their workforce. This study examines the implications of remote work on various HRM practices, including recruitment, onboarding, performance management, employee engagement, and training and development. By exploring the benefits and challenges of remote work, this research aims to provide insights into optimizing HRM practices in a virtual work environment.

Introduction

1.1 Background and Context

The COVID-19 pandemic has reshaped the way organizations operate, with remote work becoming the new norm for many employees. This shift has necessitated a reevaluation of HRM practices to accommodate a virtual work environment. The introduction section sets the context by highlighting the significance of studying the impact of remote work on HRM practices.

1.2 Research Objectives

The primary objective of this research is to examine how remote work and virtual teams influence various HRM practices. The study aims to identify the challenges and opportunities associated with remote work and provide recommendations for optimizing HRM practices in a virtual work setting.

1.3 Significance of the Study

Understanding the impact of remote work on HRM practices is crucial for organizations seeking to effectively manage their remote workforce. This research provides insights into the changes required in HRM strategies and practices to ensure employee productivity, engagement, and well-being in a virtual work environment.

Literature Review

2.1 Remote Work and Virtual Teams: Definitions and Concepts

This section provides an overview of remote work and virtual teams, defining key terms and concepts relevant to the study. It explores the various models of remote work, such as fully remote, hybrid, and distributed teams.

2.2 Benefits of Remote Work

The literature review explores the potential advantages of remote work, including increased flexibility, improved work-life balance, reduced commuting time, and access to a broader talent pool. It examines empirical studies and industry reports to highlight the positive outcomes associated with remote work.

2.3 Challenges of Remote Work

This section discusses the challenges that organizations face when managing remote teams. It explores issues such as communication and collaboration barriers, lack of social

interaction, feelings of isolation, and difficulties in monitoring employee performance. The literature review presents both academic research and practical insights from organizations.

2.4 HRM Practices and Remote Work

The literature review examines the impact of remote work on key HRM practices, including recruitment and selection, onboarding, performance management, employee engagement, and training and development. It identifies the adjustments required in these practices to effectively support remote employees.

2.5 Theoretical Framework

This section presents a theoretical framework that guides the research, drawing upon relevant theories and models in HRM, organizational behavior, and virtual work. It provides a conceptual lens through which the impact of remote work on HRM practices can be analyzed.

Methodology

3.1 Research Design

This research adopts a mixed-methods approach, combining quantitative and qualitative data. Surveys and interviews are conducted to gather data on HRM practices and their impact on remote work.

3.2 Data Collection Methods

The research utilizes surveys to collect quantitative data from remote employees and HR professionals. The survey assesses the perceptions and experiences related to HRM practices in a remote work environment. In-depth interviews are conducted with HR managers to gain qualitative insights into their strategies and challenges in managing remote teams.

3.3 Sample Selection

The research selects a diverse sample of organizations from various industries to capture a broad range of experiences and practices related to remote work. A stratified sampling approach is employed to ensure representation from different organizational sizes and sectors.

3.4 Data Analysis Techniques

Quantitative data is analyzed using statistical analysis techniques, such as descriptive statistics and inferential analysis, to identify patterns and trends. Qualitative data from interviews is thematically analyzed to uncover key themes and insights related to HRM practices in remote work.

Impact on HRM Practices

4.1 Recruitment and Selection in a Remote Environment

This section examines how remote work impacts recruitment and selection processes. It explores the use of virtual interviews, remote assessments, and the evaluation of candidates' remote working capabilities.

4.2 Onboarding and Integration of Remote Employees

The research investigates the challenges and strategies for onboarding and integrating remote employees into the organization's culture. It explores virtual onboarding techniques, socialization processes, and the role of technology in facilitating the assimilation of remote workers.

4.3 Performance Management and Remote Work

This section explores the adaptation of performance management practices to remote work settings. It examines the use of goal-setting, performance metrics, feedback mechanisms, and performance appraisal techniques for remote employees.

4.4 Employee Engagement and Remote Teams

The research investigates the factors influencing employee engagement in remote teams. It explores the role of communication, team cohesion, virtual team building activities, and leadership styles in fostering engagement among remote employees.

4.5 Training and Development for Remote Employees

This section explores the challenges and strategies for training and developing remote employees. It examines the use of virtual training programs, e-learning platforms, and the role of managers in supporting remote employees' skill development.

Strategies for Optimizing HRM Practices in a Virtual Work Environment

5.1 Technology and Tools for Remote Collaboration

This section explores the technological solutions and collaboration tools that facilitate effective communication and teamwork in a remote work environment. It discusses the implementation and utilization of project management software, virtual meeting platforms, and online collaboration tools.

5.2 Redesigning HR Processes for Remote Work

The research investigates the need to adapt HR processes and policies to accommodate remote work. It explores the redesign of HR practices related to performance management, employee well-being, career development, and rewards and recognition.

5.3 Leadership and Communication in Remote Teams

This section examines the role of leadership and effective communication in managing remote teams. It explores leadership styles and behaviors that promote engagement, trust, and collaboration among remote employees.

5.4 Employee Well-being and Remote Work

The research highlights the importance of prioritizing employee well-being in a remote work environment. It explores strategies for managing work-life balance, mitigating isolation, and promoting mental health among remote employees.

Case Studies and Best Practices

6.1 Case Study 1: Company A's Remote Work Transition and HRM Strategies

This case study explores how Company A successfully transitioned to remote work and implemented HRM strategies to support their virtual teams. It examines their approach to recruitment, onboarding, performance management, employee engagement, and training and development.

6.2 Case Study 2: Company B's Virtual Team Management Approach

This case study examines Company B's practices in managing virtual teams. It investigates their strategies for communication, collaboration, and employee well-being in a remote work setting.

6.3 Comparative Analysis of Best Practices

This section compares and analyzes the best practices identified from the case studies and other organizations. It provides insights into the commonalities and differences in HRM

strategies for remote work and highlights successful approaches for optimizing HRM practices in a virtual work environment.

Implications and Recommendations

7.1 Implications for HRM Theory and Practice

This section discusses the implications of the research findings for HRM theory and practice. It highlights the need for a paradigm shift in HRM practices to adapt to the challenges and opportunities of remote work.

7.2 Recommendations for Organizations and HR Professionals

Based on the research findings, this section provides practical recommendations for organizations and HR professionals to optimize HRM practices in a virtual work environment. It includes suggestions for recruitment, onboarding, performance management, employee engagement, training and development, and employee well-being.

7.3 Future Research Directions

This section identifies potential avenues for future research in the field of remote work and HRM practices. It suggests areas such as the long-term effects of remote work, the impact of virtual team dynamics on HRM practices, and the role of technology in supporting remote HRM processes.

Conclusion

The conclusion summarizes the key findings of the research and emphasizes the importance of adapting HRM practices to the challenges and opportunities presented by remote work and virtual teams. It underscores the need for organizations to prioritize employee engagement, well-being, and effective communication in a virtual work environment to ensure organizational success.

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Talent Acquisition Strategies in a Competitive Job Market: Navigating the Challenges

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Abstract:

In a competitive job market, attracting and acquiring top talent has become increasingly challenging for organizations. This research article examines the strategies and approaches that organizations can employ to effectively acquire talent in a competitive job market. Drawing on existing literature and empirical evidence, this article explores various innovative recruitment and selection practices, employer branding strategies, the use of social media and technology, and candidate experience enhancement to gain a competitive edge in talent acquisition. Furthermore, the article discusses the role of organizational culture, diversity, and inclusion in attracting and retaining top talent. By shedding light on effective talent acquisition strategies, this research article aims to assist organizations in optimizing their recruitment efforts in a fiercely competitive job market.

Keywords: Talent acquisition, competitive job market, recruitment strategies, selection practices, employer branding, social media, technology, candidate experience, organizational culture, diversity and inclusion.

Introduction

The introduction provides an overview of the current competitive job market landscape, emphasizing the growing challenges faced by organizations in attracting and acquiring top talent. It highlights the importance of effective talent acquisition strategies to gain a competitive advantage in securing high-performing employees. The objectives and structure of the research article are outlined.

The Competitive Job Market: Trends and Challenges

This section explores the key trends and challenges in a competitive job market, such as talent scarcity, changing candidate expectations, and increased competition among

Modern Concepts of Management

employers. It examines the impact of these factors on talent acquisition and highlights the need for organizations to adapt their strategies accordingly.

Innovative Recruitment and Selection Practices

This section delves into innovative recruitment and selection practices that organizations can employ to stand out in a competitive job market. It discusses strategies such as proactive sourcing, talent pipelines, leveraging data analytics for candidate screening, gamification in assessments, and predictive hiring techniques. The benefits, challenges, and best practices associated with these practices are examined.

Employer Branding: Attracting and Engaging Top Talent

This section focuses on the importance of employer branding in talent acquisition. It discusses how organizations can build a strong employer brand to attract and engage high-caliber candidates. It explores employer value proposition development, employee advocacy programs, reputation management, and employer brand communication through various channels.

Leveraging Social Media and Technology

This section examines the role of social media and technology in talent acquisition. It explores how organizations can leverage social media platforms, professional networks, and digital recruitment tools to expand their reach, engage with candidates, and streamline the hiring process. The ethical considerations and potential pitfalls of using technology in talent acquisition are also discussed.

Enhancing Candidate Experience

This section emphasizes the significance of providing an exceptional candidate experience throughout the recruitment process. It explores strategies to create a positive candidate journey, including personalized communication, transparent feedback, efficient application processes, and onboarding programs. The impact of candidate experience on employer branding and talent acquisition outcomes is highlighted.

Organizational Culture, Diversity, and Inclusion

This section discusses the role of organizational culture, diversity, and inclusion in attracting and retaining top talent. It explores how organizations can cultivate a culture that

values diversity and fosters inclusion to appeal to a diverse pool of candidates. Strategies for promoting diversity and inclusion in talent acquisition practices, such as inclusive job descriptions and diverse interview panels, are examined.

Conclusion

The conclusion summarizes the key findings of the research article and highlights the importance of implementing effective talent acquisition strategies in a competitive job market. It offers recommendations for organizations to optimize their recruitment efforts and adapt to the evolving talent landscape.

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Corporate Social Responsibility (CSR) in Marketing Strategy: Enhancing Brand Value and Consumer Engagement

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Abstract:

This book chapter explores the integration of Corporate Social Responsibility (CSR) into marketing strategy, focusing on the role of CSR in enhancing brand value and fostering consumer engagement. The chapter provides an overview of CSR and its importance in today's business landscape. It discusses the potential benefits of incorporating CSR principles and practices into marketing strategies, such as building a positive brand image, strengthening customer loyalty, and attracting socially conscious consumers. Furthermore, it highlights the challenges and ethical considerations associated with CSR implementation in marketing. The chapter concludes with recommendations and best practices for effectively integrating CSR into marketing strategies.

Introduction

The introduction section provides an overview of CSR and its growing importance in business strategy. It explains the concept of CSR and its role in addressing social, environmental, and ethical issues. It also highlights the significance of integrating CSR into marketing strategies to create a positive impact on both society and business performance.

The Role of CSR in Marketing Strategy

This section delves into the role of CSR in marketing strategy and its potential benefits for businesses. It discusses how CSR can enhance brand value, reputation, and differentiation in a competitive marketplace. It explores the relationship between CSR and consumer behavior, emphasizing the growing demand for ethical and socially responsible brands. Additionally, it analyzes the impact of CSR initiatives on customer loyalty, brand trust, and positive word-of-mouth.

Leveraging CSR for Brand Communication and Engagement

This section focuses on how businesses can effectively communicate their CSR initiatives to enhance brand engagement with consumers. It discusses the importance of authentic storytelling, transparency, and stakeholder engagement in conveying CSR messages. It explores various communication channels, such as social media, cause-related marketing campaigns, and corporate storytelling, that can be used to engage consumers and foster a sense of shared values. Furthermore, it emphasizes the need for consistent and credible CSR messaging across all marketing touchpoints.

Integrating CSR into Product Development and Innovation

This section highlights the role of CSR in product development and innovation. It discusses how businesses can align their product offerings with CSR principles, such as sustainable sourcing, eco-friendly manufacturing processes, and fair trade practices. It explores the potential for developing sustainable product lines, incorporating recycled materials, or offering products with a social mission. Additionally, it examines the role of co-creation and consumer involvement in developing socially responsible products that meet the needs and values of the target market.

Addressing Challenges and Ethical Considerations

This section addresses the challenges and ethical considerations associated with incorporating CSR into marketing strategy. It discusses the potential risks of greenwashing and the importance of genuine commitment to CSR values. It explores the need for transparency, measurement, and reporting of CSR initiatives to ensure accountability. Additionally, it emphasizes the importance of aligning CSR initiatives with the core values and purpose of the organization to maintain consistency and credibility.

Best Practices and Recommendations

This section provides best practices and recommendations for effectively integrating CSR into marketing strategies. It emphasizes the need for a strategic approach to CSR, aligning it with the overall business strategy and brand positioning. It discusses the importance of stakeholder engagement, partnerships with non-profit organizations, and collaboration with industry peers to maximize the impact of CSR initiatives. Furthermore, it highlights the significance of ongoing measurement, evaluation, and communication of CSR outcomes to stakeholders.

Measuring the Impact of CSR in Marketing Strategy

This section focuses on the measurement and evaluation of the impact of CSR initiatives in marketing strategy. It explores various metrics and tools that can be used to assess the effectiveness of CSR activities in enhancing brand value and consumer engagement. Businesses can utilize key performance indicators (KPIs) such as brand reputation, customer loyalty, consumer perception, and social media engagement to measure the success of their CSR initiatives. Additionally, businesses can conduct surveys, focus groups, and sentiment analysis to gather qualitative data on consumer attitudes and perceptions towards their CSR efforts. It is important for businesses to regularly track and analyze these metrics to understand the impact of CSR on their marketing strategy and make informed decisions for continuous improvement.

Adapting CSR to Changing Consumer Preferences

Modern Concepts of Management

This section highlights the importance of adapting CSR initiatives to align with changing consumer preferences and societal trends. Consumer preferences and expectations around CSR are constantly evolving, and businesses need to stay attuned to these changes to remain relevant and impactful. It discusses the need for businesses to conduct market research and stay updated on emerging social and environmental issues that are of concern to consumers. By understanding consumer values and aspirations, businesses can tailor their CSR initiatives to address these concerns effectively. Additionally, businesses should leverage consumer feedback and engage in meaningful dialogue with their target audience to ensure that their CSR efforts resonate with their customers and contribute to their brand loyalty and advocacy.

Collaborative Partnerships and Stakeholder Engagement

This section emphasizes the importance of collaborative partnerships and stakeholder engagement in implementing successful CSR initiatives within marketing strategies. Businesses can collaborate with non-profit organizations, government agencies, and other stakeholders to amplify the impact of their CSR efforts. By partnering with relevant organizations, businesses can leverage their expertise, resources, and networks to maximize the social and environmental benefits of their CSR initiatives. Furthermore, involving stakeholders in the planning, implementation, and evaluation of CSR activities fosters transparency, trust, and shared accountability. It is crucial for businesses to actively engage stakeholders throughout the CSR journey to ensure alignment, build strong relationships, and create a collective impact that goes beyond their own organizational boundaries.

Ethical Considerations and Responsible Marketing

This section further explores the ethical considerations associated with CSR implementation in marketing strategy. Businesses need to ensure that their CSR initiatives are aligned with their core values, are authentic, and do not compromise ethical standards. It discusses the importance of responsible marketing practices, including accurate representation of CSR efforts, avoiding greenwashing, and transparent reporting of impact and outcomes. Businesses should conduct due diligence in selecting partners and suppliers who adhere to ethical and sustainable practices. Moreover, businesses need to communicate their CSR initiatives truthfully and avoid misleading claims, as consumer trust and brand reputation can be significantly affected by unethical marketing practices.

Case Studies and Examples

This section presents case studies and examples of businesses that have successfully integrated CSR into their marketing strategies. It showcases how these businesses have leveraged CSR to enhance their brand value, engage consumers, and drive business growth. The case studies demonstrate different approaches to CSR in marketing, including cause-

related marketing campaigns, sustainability-focused product innovations, and community engagement initiatives. By analyzing these real-world examples, businesses can gain insights and inspiration for their own CSR initiatives and understand the key factors that contribute to their success.

Conclusion

The conclusion section summarizes the main points discussed in the book chapter. It emphasizes the importance of integrating CSR into marketing strategy to enhance brand value, foster consumer engagement, and contribute to positive social and environmental impact. It underscores the need for businesses to measure the impact of their CSR initiatives, adapt to changing consumer preferences, engage stakeholders, and practice responsible marketing. By effectively integrating CSR into marketing strategy, businesses can build sustainable and purpose-driven brands that resonate with their target audience and contribute to a better society and environment. The importance of integrating CSR into marketing strategy to enhance brand value and consumer engagement. It emphasizes the potential benefits of CSR, such as improved brand reputation, customer loyalty, and market competitiveness. Furthermore, it underlines the need for businesses to navigate the challenges and ethical considerations associated with CSR implementation in marketing.

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Performance Analysis of AODV, DSR, OLSR Routing Protocol in Ad hoc Networks.

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Abstract— In this paper, an effort has been made to examine and compare the performance of the reactive and proactive ad-hoc routing protocols by employing OPNET Simulator according to increasing number of failed nodes in the network. In current study, a comparison of reactive routing protocols such as Distance Vector Routing (DSR), Ad Hoc On-Demand Distance Vector Routing(AODV) and proactive routing protocols such as Optimized Link State Routing(OLSR) has been done in terms of delay, throughput and network load, by increasing amount of failed nodes in the network. Three routing protocols are being examined on the above specified parameters and had been found that OLSR performance is better as compared to AODV and DSR on persisting node failure in the network.

Protocols in terms of three different parameters i.e. delay, throughput and network load. This work offers a comparative study, by simulation, of three routing protocols i.e. AODV, DSR and OLSR for MANETs by utilizing the well-known network simulator OPNET Simulator.

Keywords- AODV, DSR, OLSR, MANET, OPNET

INTRODUCTION

Mobile ad hoc networks (MANET) are standards for mobile communication in which mobile nodes are arbitrarily and dynamically positioned in such a way that interaction between nodes does not depend on any fundamental fixed network infrastructure. Since no static infrastructure or centralized management exists, these networks are self-configured and end-to-end communication may need routing information through various intermediary nodes. Every device in a MANET is free to proceed independently in any direction, and will thus modify its connections to other devices immediately. The main issue in constructing a MANET is fitting every device to continuously manage the information needed to suitably propagate traffic . There are various factors which causes the reduction of the network's performance. Among others, signal attenuation, node failure , and high bit error rate are causes to performance reduction in term of packet drop and obtained good throughput.

In specific way, dealing with node failure is a problem in wireless ad hoc environments. The employed device may work out of battery or move causing the disruption of the ongoing communication. The MAC layer is slow to determine these types of failures and to invoke the routing protocol to see for a new route to the destination node. In this paper, the simulation has been carried out to compare the performance measurement and comparison of three different routing

DYNAMIC SOURCE ROUTING (DSR)

DSR is an on-demand reactive routing protocol planned to limit the bandwidth consumed by control packets in wireless networks by removing the periodic table update messages needed in the table-driven method. The basic strategy of this protocol (and all other on-demand routing protocols) during the route establishment step is to construct a path by broadcasting Route Request packets across the network. The destination node, on obtaining a Route Request packet, reply by sending a Route Reply packet in return to the source node, which holds the path traversed by the Route Request packet obtained. Source routing prompts the source node to construct an ordered list of intermediary nodes which would consists the complete path to the destination.

Every transmitted packet is then propagated having the complete path in its header. Since the route is detected in the packet, this routing approach exempts intermediary nodes from keeping routing information to propagate packets. The protocol composed of two route-regarding processes: the route discovery process and the route maintenance process. Every node keeps a route cache. Whenever a source node wants to send a packet, firstly it examines its route cache for a path to the destination node. In case it is found, the node utilizes that one found. In case the node does not discover any right path to the destination, it begins the route discovery process. In the route discovery process, the source node floods a Route Request (RREQ) packet, which is broadcasted via intermediary nodes. Nodes without path to the destination add their addresses to the RREQ packet and again flood it until it reaches the destination node or an intermediary node with a right path to the destination node. Then, it neglects the RREQ packet obtained. The destination node (or the intermediary node with a valid path), upon obtaining the RREQ packet, routes a Route Reply (RREP) packet to the source node. It consists of the complete path from the source node to the destination node.

Simulator is a commercial network simulation framework for network simulation and modeling. It permits the users to plan and analyze communication networks, protocols, devices and applications with scalability and flexibility. It models the network diagrammatically and its graphical editors reflect the structure of network components and actual networks.

AD-HOC ON DEMAND DISTANCE VECTOR (AODV)

Ad-hoc On-demand distance vector (AODV) [5] [6] [11] is another distance vector routing algorithm, a combination of both DSR [4] and DSDV [8]. It shares DSR's on-demand features hence finds paths whenever it is required by a same route discovery process. However, AODV follows conventional routing tables; one entry per destination node which is opposite to DSR that keeps multiple route cache entries for every destination. AODV has other important features. Whenever a path exists from source node to destination node, it does not append any overhead to the packets. Since, route discovery process is only started when paths are not utilized and/or they died and immediately removed. This method decreases the impacts of state routes as well as the requirement for route maintenance for unused paths. Another important feature of AODV is the capability to offer multicast, unicast and broadcast communication. AODV utilizes a broadcast route discovery algorithm and then the unicast route reply message.

OPTIMIZED LINK STATE ROUTING (OLSR)

OLSR [6] is a proactive hop by hop routing protocol. It is a modular protocol which contains an always needed core, and a collection of auxiliary functions. It is a proactive method, so it continuously attempts to discover paths to all possible destinations in the network. Proactive and link state nature could increase congestion in the network because of the routing traffic produced. However, because of its proactive nature, it has the benefit of having paths quickly available whenever they are needed. In order to decrease the amount of routing traffic created by the protocol and therefore optimize the algorithm to fulfill the needs of a mobile WLAN, OLSR presents Multipoint Relays (MPR). A MPR is a collection of chosen nodes which sends messages during the broadcasting process. Only nodes chosen as MPR members can forward control traffic and routing. Employing this method traffic produced at the broadcasting process is highly decreased, making this method a sort of selective

broadcasting. A node chooses its MPR node members out of its neighboring nodes positioned at one hop distance from it. A node which chooses another node as a MPR node member is also known as MPR Selector of that node. Adopting these guidelines, neighbors of a provided node not involved in its MPR set receive and process control messages, but do not send them. MPR set deals with all nodes positioned two hops from the node. Generally, the smaller a MPR set, the lower control traffic produced in the network.

OPNET Simulator

SIMULATION ENVIRONMENT

this section the efficiency of the Ad-hoc routing protocols have been examined and verified by employing OPNET simulator [8] [12]. The calculation platform utilized is a desktop (2.5 GHz, 2GB RAM). Fig 1 indicates a network considered for this study. It is composed of 50 mobile nodes which a raw packet creator is transmitting packets over IP and WLAN, one static FTP server node with server applications running. This node provides support to one fundamental IEEE 802.11 connection at 1 Mbps or 2 Mbps. The operational speed is decided by the associated link's data rate application configuration which describes the kind of application executing in the network.

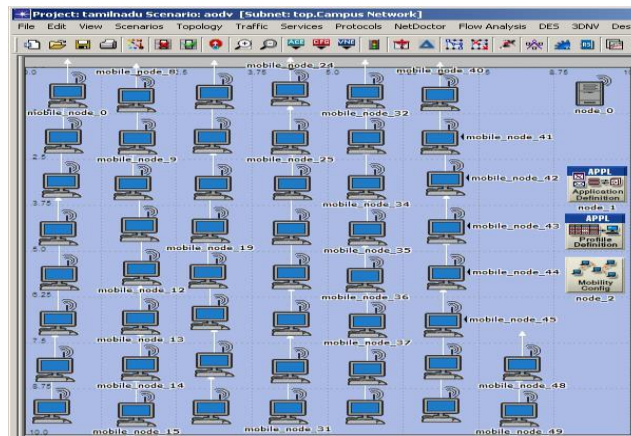


Fig. 1 MANET Scenario

The study has been carried out for the case when the whole network is healthy and the other when many of its nodes fail.

Network's performance based on load in the network has been examined on the basis of the network throughput.

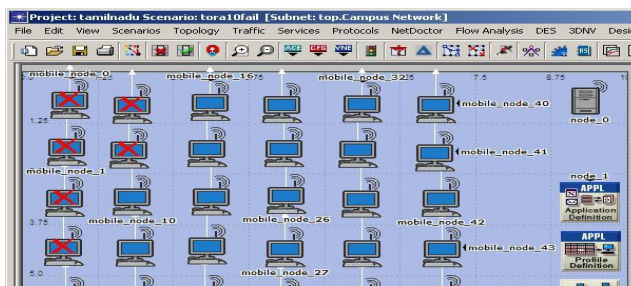


FIG 2 MANET SCENARIO WITH TEN NODES FAILED

Fig 2. describes the network under the situation of node failures. Random waypoint model [12] of mobility has been analyzed where nodes go moving until they reach at a random destination computed by the algorithm

A. TRAFFIC MODELING

This simulation environment is composed of 50 wireless nodes making an ad-hoc network, moving over about 10 x 10 kilometer area for about 1 hr of simulated time.

B. PERFORMANCE MATRICES

The parameters depends on which the protocols are formulated are the default parameters of the protocols. There are various metrics employing which one can compare these three protocols. In this work following performance metrics are utilized for design and analysis work.

Throughput can be defined as the average rate of successful message delivery over a communication medium. The time it considers by the receiver to obtain the last message is known as throughput [13]. Throughput is measured as bytes or bits per sec (byte/sec or bit/sec). Some factors influence the throughput as; if there are various configuration changes in the network, limited bandwidth available, unreliable communication among nodes, and restricted energy [13]. A high throughput is absolute selection in each network. Throughput can be defined numerically as in equation specified below:

$$\text{Throughput} = \frac{\text{No. of delivered packets} * \text{packet size} * 8}{\text{Total duration of Simulation}}$$

Delay can be defined as time considered to push the packet's bits onto the connections. The delay of a network describes how long it consumes for a bit of data to move from one node to another node over the network.

Network load can be defined as the total number of packets transmitted per second.

RESULTS

Throughput is the ratio of the total data arrives a receiver from the sender. The network throughput for many routing protocols i.e. DSR, AODV and OLSR in successful operation of the network without any node breakage is described in Fig. 3. The network throughput as measured is maximum for OLSR and minimum for DSR and throughput of AODV lies between the two.

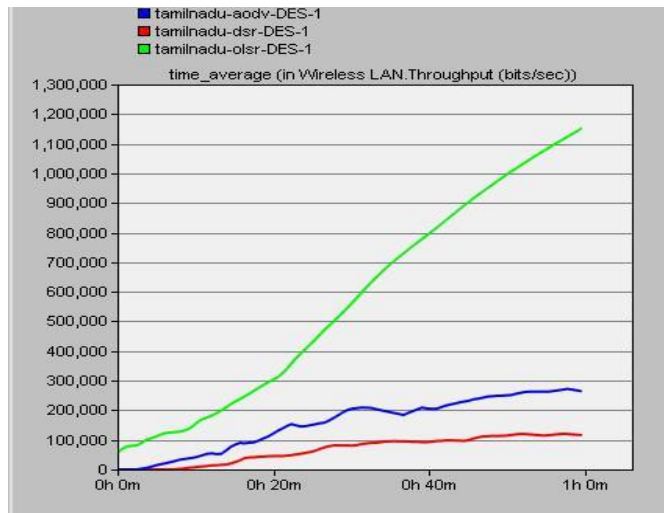


Fig 3 Simulation time v/s throughput (without node fail)

Fig. 4, 5 and 6 shows the throughput of the network with 10, 20 and 30 failed nodes respectively. When node failure occurs, the network throughput for several routing protocols is examined. The network throughput for OLSR is better in comparison of DSR and AODV.

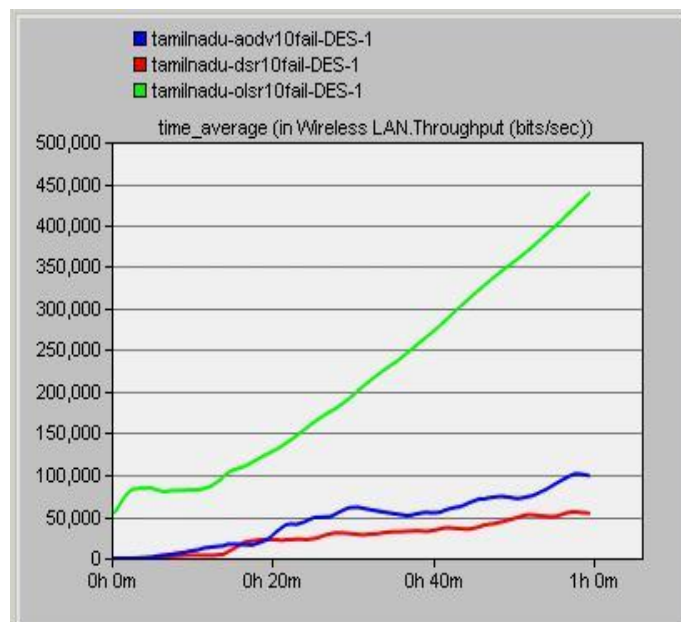


Fig 4 Simulation time v/s throughput (10 node fail

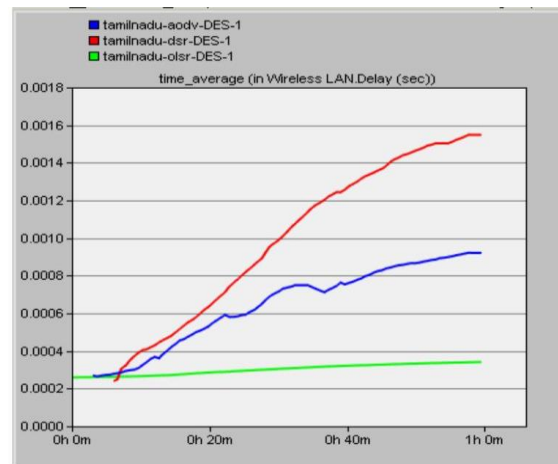
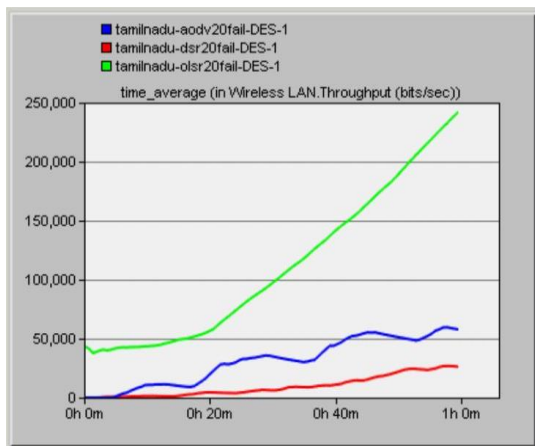


Fig 5 Simulation time v/s throughput (20 node fail) Fig 6 Simulation time v/s throughput (30 node fail)

Fig 7 shows the network delay for many routing protocols i.e. DSR, AODV and OLSR in successful operation of the network without any node failure. As depicted in fig 7, the network delay in condition of DSR is maximum and that for OLSR is least and for AODV it lies between the two. When the network is subjected to node failure, the network delay for the several routing protocols is examined. The simulation is executed and network is examined for various number of failed nodes. The impact of node failure is depicted in Fig 8, 9 and 10 respectively. When subjected to node failure the network delay in case of DSR is maximum and that for OLSR is least.

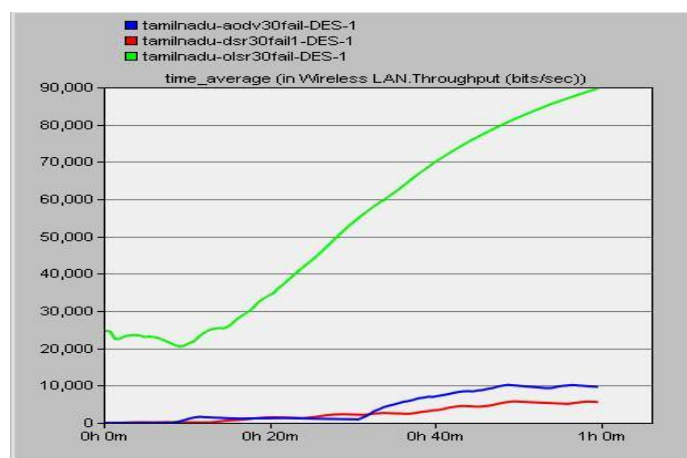


Fig 7 Simulation time v/s delay (without node fail)

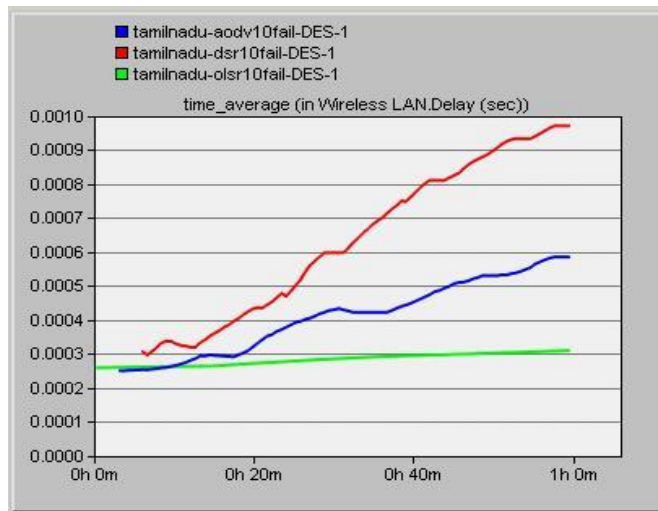


Fig 8 Simulation time v/s delay (10 node fail)

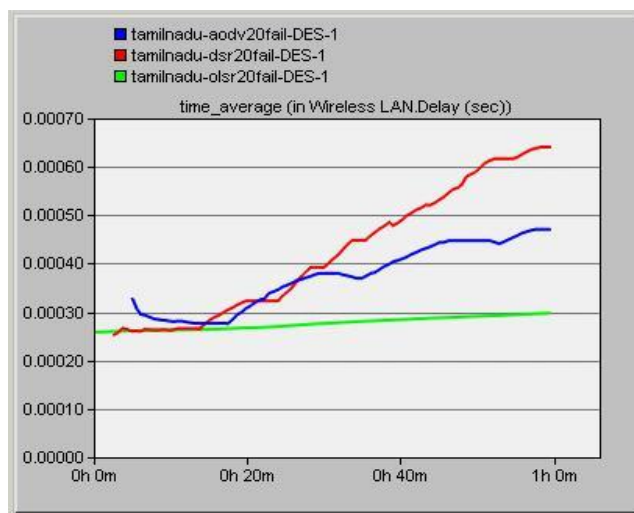


Fig 9 Simulation time v/s delay (20 node fail)

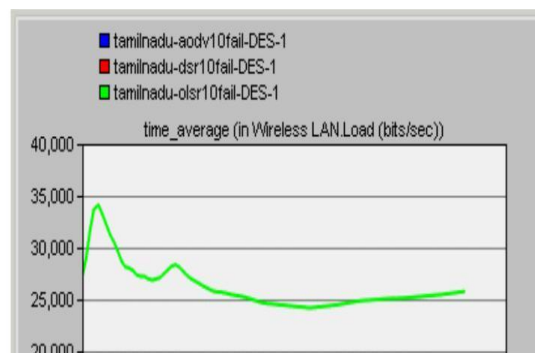
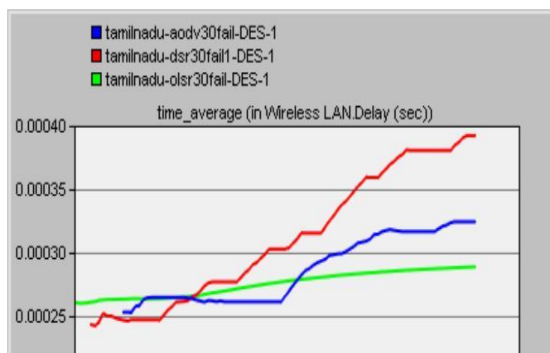


Fig 10 Simulation time v/s delay (30 node fail) Fig 11 Simulation time v/s load (without node

fail)

CONCLUSION

The simulation study of this work has been performed for three different protocols AODV, DSR and OLSR deployed over MANET utilizing FTP traffic examining their behavior in terms of delay, throughput and network load. Objective of performing this simulation was to examine the performance of these three different routing protocols in MANET in usual operating situations as well as on the happening of node failure based on above specified parameters, as the choice of effective and reliable protocol is a serious issue. From the above analysis it is observed that OLSR performs best as compared to DSR and AODV protocols in terms of delay and throughput. While in terms of network load AODV and DSR are better. The throughput of OLSR is better in comparison of AODV and DSR in both usual operating conditions as well as in situations of node failure. This is due to the proactive nature of OLSR because of which it continuously attempts to discover paths to entire possible destinations in the network. Thus it has the benefit of having paths instantly available whenever they are needed and same scheme is followed in situation of node failure. This is the cause for its excellent performance. Whereas in case of AODV and DSR, they find paths whenever it is required due to their reactive nature. This causes undesirable delay in the network which in turn decrease the total network performance.

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Smart Garden Monitoring System using internet of things

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Abstract – Plant provides us with almost all the basic needs for survival but we are unable to provide plant with its basic needs like water, non-polluted oxygen and as a result plants are unable to survive. In this paper on IOT based smart garden monitoring system which sense the requirement of the plant and provide it with water as the soil loses its moisture. Different soils have different fertility and moisture level so we have soil and moisture sensor used in this to detect this problem. In our country there are six different seasons and each day have different temperature and humidity level so to check the temperature and humidity for the better health and survival of plant temperature and humidity sensor are used which regularly sends data to the server. In this way it manages to perform its operations automatically.

Index Terms – NodeMCU ESP8266, Temperature and humidity sensor, Smart Garden, Light sensor, Soil and moisture sensor, GSM TTL, pump controller

INTRODUCTION

IOT is the future of present technology. It generally means machine-to-machine communication. According to study there will be 20.8 billion devices connected to internet till 2020.

The term "Internet of Things" was coined by Peter T. Lewis in a 1985 speech given at a U.S. Federal Communications Commission (FCC) sponsored wireless session at the 15th Legislative Weekend Conference. In his speech he states that "The Internet of Things, or IoT, is the integration of people, processes and technology with connectable devices and sensors to enable remote monitoring, status, manipulation and evaluation of trends of such devices.

As the talk, the number of companies to help enable their IoT (Internet of Things) ideas. And as a result, we hear about new ideas and solutions that are already solving business challenges with M2M (Machine to Machine) communication. And today, we want to highlight some of the most compelling IoT applications in another industry – agriculture. Agriculture IoT is becoming one of the fastest growing fields (pun intended) within the IoT. Today, more than ever, farmers have to more effectively utilize and conserve their resources. That's where the need for data comes in, and M2M communication has made the ongoing collection of that info easy.

SYSTEM DESCRIPTION

This system is based on Internet of things which aims at connecting maximum devices through internet. We are surrounded by plants and trees; it provides us with oxygen, food etc. In this Smart Garden monitoring system water is provided to the plant with the help of pump motor.

In our garden we have many types of herbs, shrubs and climbers. But in our busy schedule we don't have time to take care of these plants which provides beauty to the nature and foods for the needy so this system with the help of soil and moisture sensor checks the fertility of the soil and provide it with water through the pump. It has temperature sensor which checks the temperature of the outside environment. It is helpful to the time when we go out of

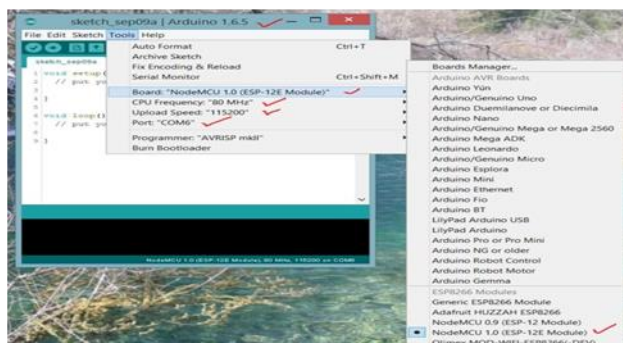
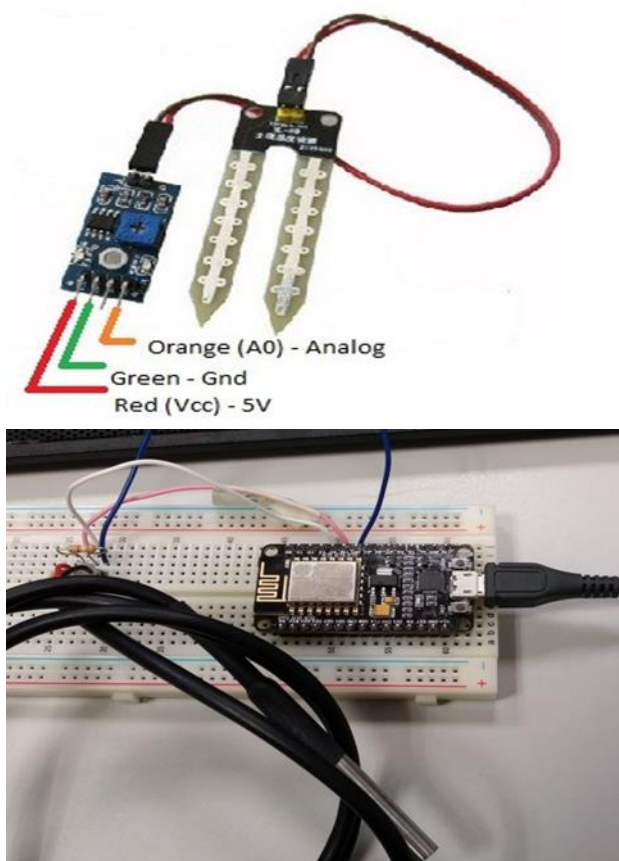
station for business purpose or for meeting friends and family for over a month it automatically provides water to the plants. GSM is connected to the NodeMCU which sends SMS to the family member when the system is off and there is urgent need to supply water to the plant. NodeMCU ESP 8266 uploads data to the server regularly. In long term it can be useful to the Green House plantation which in long term has many benefits.

HARDWARE DISCRPTION

OursystemarchitectureincludesNodeMCU ESP 8266,temperature and humidity sensor, Light sensor, soil and moisture sensor,GSMmodule,pumpcontrollerboard. Eachofthesystemsandtheirworkingaredescribedbelow

NODEMCU ESP 8266

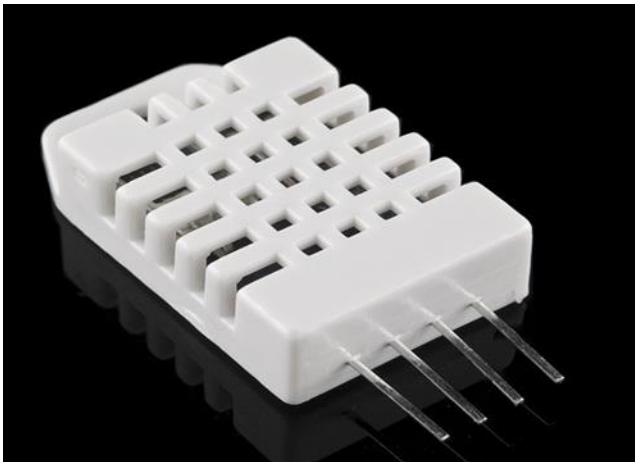
NodeMCUwascreatedshortlyafterthe ESP8266 cameout.OnDecember30,2013, EspressifSystems beganproductionoftheESP8266. The ESP8266 is a Wi-Fi SoC integrated with a Ten silicaXtensaLX106core,widelyusedinIoTapplications.



In this system NodeMCU will be programmed by connecting it through 3.3V USB cable. It will sense the data sent by temperature and humidity sensor, light sensor, soil and moisture sensor and GSM.

TEMPERATURE AND HUMIDITY SENSOR

The RHT03 (also known by DHT-22) is a low cost humidity and temperature sensor with a single wire digital interface. The sensor is calibrated and doesn't require extra components so you can get right to measuring relative humidity and temperature.



Features:

- 3.3-6V Input
- 1-1.5mA measuring current
- 40-50 μ A standby current
- Humidity from 0-100% RH
- -40 - 80 degrees C temperature range
- +2% RH accuracy
- +-0.5 degrees C

In this system temperature and humidity of the soil will be checked by this sensor and data will be uploaded to the server with the help of NodeMCU ESP 8266.

LIGHT SENSOR

A Light Sensor generates an output signal indicating the intensity of light by measuring the radiant energy that exists in a very narrow range of frequencies basically called "light" and which ranges in frequency from "Infra-red" to "Visible" up to "Ultraviolet" light spectrum.

The light sensor is a passive devices that convert this "light energy" whether visible or in the infra-red parts of the spectrum into an electrical signal output. Light sensors are more commonly known as "Photoelectric Devices" or "Photo Sensors" because the convert light energy (photons) into electricity (electrons).



GSM

GSM (Global System for Mobile communication) is a digital mobile telephony system that is widely used in Europe and other parts of the world. GSM digitizes and compresses data, then sends it down a channel with two other streams of user data, each in its own time slot. It operates at either the 900 MHz or 1800 MHz frequency.

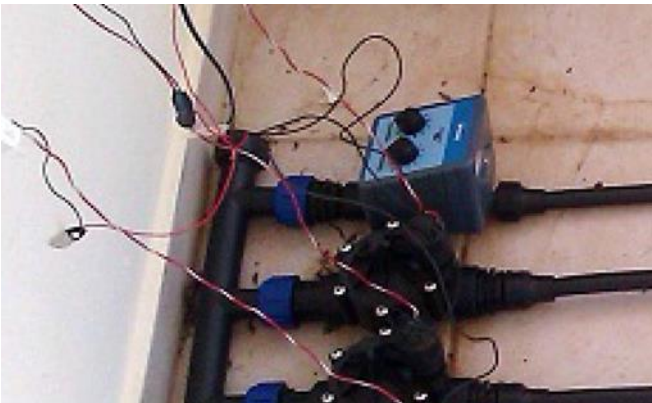


PUMP CONTROLLER

This controller is suitable for any type of motor - Single or Three Phase. Switches ON the pump when the water in the overhead tank goes below the pre-decided minimum level.

Switches OFF the pump when the water level in the overhead tank reaches the maximum level therefore prevents overflow.

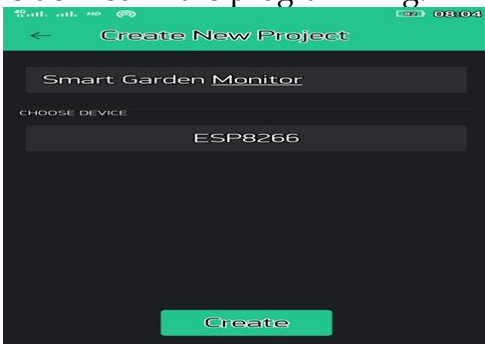
Shall again switch ON the pump when there is sufficient water in the underground tank. Therefore no need to switch ON or switch OFF the pump manually.

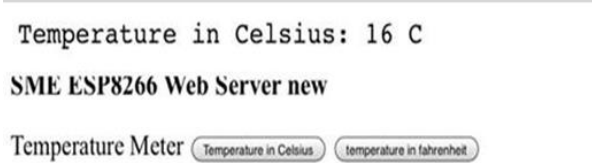
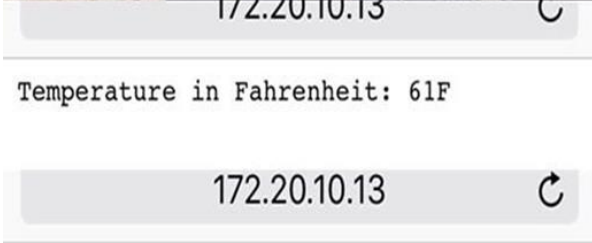


SOFTWARE DISCRIPTION

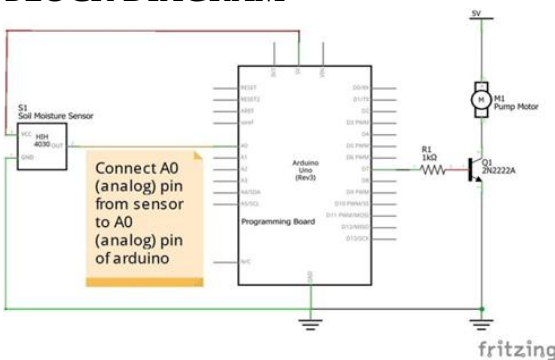
This paper is based on Internet of Things. It work on the mobile application and on the web server by uploading the data on the Arduino application available on PC. In mobile application BLYNK we upload the wifi hotspot name and the password in our program based on embedded C programming language.

In web server on a particular IP address or the web page data is uploaded on the server and through the sensors data is uploaded on the web server. GSM connectivity is also programmed in ESP 8266 by using the GSM library available in the Arduino application. It is shown in the figure how the button is selected in the application and how the temperature, moisture and humidity is uploaded on the web. Rx and Tx of the ESP 8266 is connected through the pins and it is defined in the programming.





BLOCK DIAGRAM



CONCLUSION

In this paper we presented the architecture and the implementation of a smart home irrigation system. The system consists of two types of sensors motes (TelosB and IRIS), special soil humidity sensors, electro-valves that are mote driven with the use of relays and a Java application that is used for data collection. Performance evaluation showed that our system manages to maintain soil hmidity levels regardless of external factors (i.e. variations at temperature and sunlight). It also proved that the system is aware of the different watering needs each.

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An analysis of (STAAS): Software Testing as a Service Model in Cloud Computing

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Abstract -The purpose of this paper is to review the latest trends in STAAS(Software Testing as a Service). Software testing (ST) is the process of identifying and delivering the software as a product based on the specification that has been given and required by the users. In order to ensure the product is working properly based on the user specification, there are many people who are working together and provide their services for a community of practice (CoP) purposes. The CoP in ST of cloud computing environment are including the software designer, programmer, and system tester as well as the software users by themselves. Based on this scenario of working together or working collaboratively in order to avoid a lot of mistakes or errors and causes the software failure, which may be found during the ST as a service (STaaS) process, so that there is a need for CoP to have a tool called Collaborative Knowledge Management System (CKMS) in managing the ST knowledge of best practice and lesson learnt. The paper will discuss a model on how the ST of CoP is offering its service of processes called STaaS through knowledge life cycle which starting from knowledge acquisition, knowledge storing, knowledge dissemination, and knowledge application in order to overcome any shortcoming faulty or failure especially during the software development and its implementation in a cloud computing environment. Therefore, by utilizing the CKMS model in managing knowledge of STaaS, the CoP can maximize the STaaS knowledge in the CKMS and furthermore to overcome the mistakes or errors, so that they can also delivered a good product as part of well services besides in enhancing the quality of software of particular users.

Key words: Software testing as a Service (STaaS), Collaboration Environment, Knowledge Management, Collaborative Knowledge Management System (CKMS), Software Quality, Cloud Computing..

1. INTRODUCTION

Software testing (ST) is the process of identifying and delivering the quality of software as a product based on the specification that has been required by the users [1].

In order to ensure that the product is meeting the user specification, there are many people who are working together for that purposes as a community of practice (CoP) [2].

These are including the system designer, programmer, and system tester as well as the user by himself. Based on this scenario in order to avoid a lot of mistake or errors and causes the software failure, which may be found during the processes of ST as a service (STaaS) process, so that there is a need of tool CoP called collaborative knowledge management system (CKMS) in managing the ST knowledge of best practice and lesson learnt [4].

Collaborative Knowledge Management (CKM) is the process of capturing making use the organization's expertise anywhere, anyplace, and anytime in the business in explicit and implicit knowledge [2].

The paper will discuss the model on how the CKMS is offering of its processes for ST as a service (STaaS) in cloud computing (CC) environment through knowledge life cycle which is consists of knowledge acquisition, storing, dissemination, and application [3].

Therefore, by using the model of ST as a service (STaaS) in managing knowledge of, the CoP can utilize the CKMS , and then it will reduces errors, so that they can delivered in a good or quality product to the organization[2].

2. LITERATURE REVIEW

Software testing (ST) is an investigation conducted to provide stakeholders with information about the quality of the product or service under test. So that, by handling the ST process, the product that will be delivered to the stakeholders as main users significantly will become in a good quality of condition which according with their requirement.

Fig. 1 is showing on CoP such as Software tester, Developer, and the User are working collaboratively in ST as a service (STaaS) and shared their knowledge as much as possible into a specific enterprise business system.

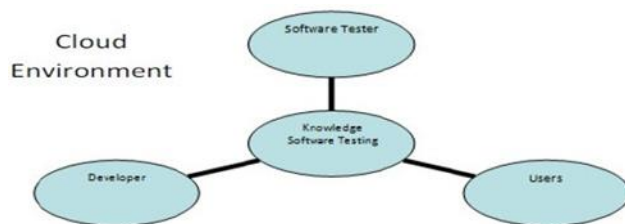


Fig. 1: CoP in STaaS Environment

ST process normally involved black box and whitebox of testing [12].

Black Box Testing is a testing process that will test the functionality of the product as an external structure or working of the product, while the white box testing is the testing process involved as an internal structure in term of coding of the product starting from input goes to the appropriate output.

Both of these testing processes can be applied at the unit, integration and system levels of the software testing process and it normally will be conducting based on the inventory testing process [5].

This inventory will be starting by requirements which are describing the functional, non-functional requirement, and followed by any other type of testing such as user acceptance test (UAT) and regression test.

Meanwhile, CKMS is a tool for managing knowledge which is involved knowledge acquisition, knowledge storage, knowledge dissemination, and knowledge application [4].

The knowledge of the CoP can be divided into two types of knowledge called tacit and explicit knowledge[9].

Fig. 2 is showing the KM life cycle process. In this context, CKMS can also be used in different knowledge environment such as Software Engineering [4,5], Software Testing [3,6], Software Maintenance Knowledge [7,8] and many others.

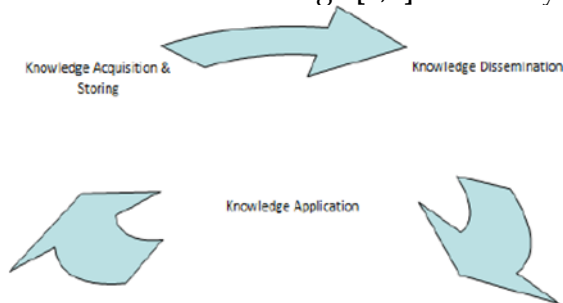


Fig. 2: KM Life Cycle Process

In the context of managing knowledge of ST which is consists of knowledge of testing activities of processes, it will be managed or categorized according to the knowledge structure of software testing process based on Black Box and White Box testing environment [3].

Fig. 3 is showing the black box and white box testing by indicating the internal and external structure of the software as a product as well as UAT.

Besides that, in order to ensure the CoP will be informing about the latest knowledge about the ST that was deposited and used by certain members of the CoP in the KMS, there are two kinds of technologies can be implemented for this environment.

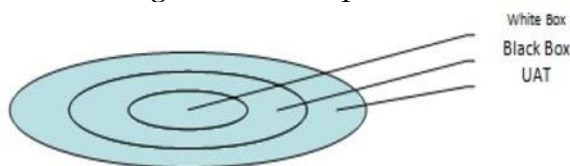


Fig. 3: Types of normal ST Environment

These are included push and pull technology mechanisms in term of soft and hard information about the utilization of a specific relevant knowledge of CoP in STaaS in cloud Computing (CC) environment [4,7].

3. METHODOLOGIES

In order to formulate the ST as a service (STaaS) model of CKMS in managing knowledge of ST process environment, there are few steps that has been conducted as shown in Fig. 4.

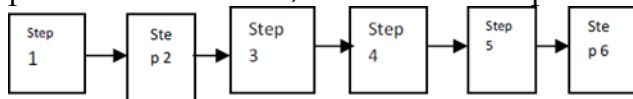


Fig. 4: Steps in KMS of STaaS model formulation

Step 1: Perform by reviewing of the literature. This is involving the process of reviewing the CKM, STaaS process, and how the CKM as a tool that can be used to manage of STaaS knowledge in a CoP in order to achieve their mission statement.

Step 2: Conduct the preliminary survey. This is the process of conducting the preliminary survey for getting input for the model of ST as a service (STaaS) in CKMS environment. For this purposes, the survey has been done by using a questionnaire to those who are involved in the ST project such as software testers, developers, and users. So that, they can verify the proposed input such as ST content management, usability, maintainability, and security that

supported from the literature as well as may have additional requirement of any missing variability or functions of CKM as a tool in providing the knowledge of ST process to the CoP.

Step 3: Formulate the model. This is the process involving the composition of the attributes and elements based on the previous steps into a specific format or manner.

Step4: Translate the form of model into system components. This is also involving the architectural design the STaaS as a model into its component-based system.

Step5: Evaluation. This is the process of evaluation that involved another round of questionnaire called post-survey in order not only to verify and validate the model but also a part as well as in enhancing of a comprehensive system model specification.

Step 6: Conclusion. This is the process of summarizing the finding of preliminary survey in preparing the post survey that going to done on in producing the StaaS model for managing knowledge of STaaS using CKMS in a CC environment.

4. A MODEL OF SOFTWARE TESTING AS A SERVICE IN KMS ENVIRONMENT

The overall model of CKMS in managing knowledge of STaaS knowledge a COP in CC environment, it can be proposed as shown as in Fig.5.

Besides that, the model KMS can be divided into three main components or layers. These are including the tester COP layer, CKMS Functionality in Software Testing layer, and CKMS architecture layer. These layers will be interacting to each other in order to ensure it will perform based on the particular purpose of cloud testers in COP.

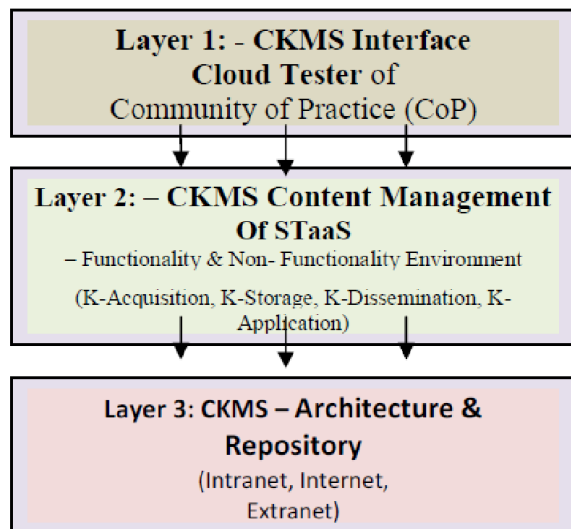


Fig. 5: A StaaS Model with CKMS in a CC Environment

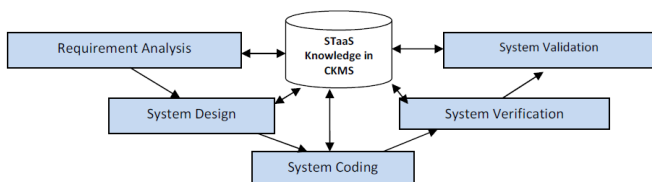


Fig. 6: Knowledge Structure of STaaS in CKMS Repository

Fig. 6 show also STaaS process in terms of knowledge structure in software development in a CC environment that is starting from the requirement analysis in producing system

specification and followed by other system development activities, which consists of system design and system coding and then system verification and validation of a product and delivered to the specified users [4].

5. CONCLUSIONS AND FUTURE WORK

As a conclusion, the paper has shown that the knowledge of software testing as a service (STaaS) model is a very important feature for the CKMS in order to provide the CoP in serving them in a CC environment.

The CKMS can be implemented by using two components which are involved CKMS functionality and its related architecture through network computer capabilities whether it was connected directly or remotely.

The finding of this research also shows that the CoP can get a collection of STaaS knowledge processes that has been contributed with a significant effect to them in acquiring, storing, disseminating and applying the knowledge of ST for the future purposes.

Besides that, in order to ensure CKMS in ST that can be done smoothly, the CKMS administrator should be considered the most related issues like performance, learn ability, reliability, availability and security in a good manner so that CoP can access and use of the particular knowledge at anywhere and at anytime.

For future work, it is good to be considered on how KMS can be accessed and used by CoP in STaaS together service level agreement (SLA) that may be using any devices especially through mobile computing since this project is only considered for accessing in a CKMS as common devices (client server based environment through desktop technology) only.

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Review and analysis of Energy Efficient Allocation Policy for Virtual Machine in Cloud Computing

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Abstract

The cloud computing system requires computation power energy 24x7, which consumed by host (supercomputer) and data center. Many of researcher and industry have proposed various policies for optimize or curb energy utilized by IT resources. In this paper, we have various techniques and algorithm that provide effective energy efficient cloud computing and virtual machine allocation. These techniques have various methods, which are detailed discussed and evaluated for utilization energy by various resources. This work will help to researcher for analyze various policy used energy efficient virtual machine provisioning.

Keywords – Virtual Machine, VM Migration, energy efficiency, Networking;

INTRODUCTION

The most common problem in cloud computing were to design an effective method for VM allocation with considering energy efficiency. Most of research and development community mainly concern about performance of system and amount of energy consumed by that process commonly ignored. As Report [Gupta and Singh 2003] U.S. had deployed 95000 LAN switches and 3257 routers in 2000, which consumes 3.2 Tera Watt hours. Typically purchasing cost of computing server was super passed by price of energy consumed by computing server over time [Barroso 2005]. Energy also wasted in idle condition of server and networking equipment. In U.S., 188 data centers in 2010 and estimated that 12% of energy never been utilized analyzed by the Green Grid consortium [Green Grid 2010]. These can saved by turning off server when they are not in use or turned them to low power mode.

In general, energy consumed by server or host are classified in two parts: In general, energy consumed by server or host are classified in two parts:

Static Part

This part defines size of system and type of component, such as computing, data storage and network

elements and this include leakage of any powered system.

Dynamic Part

This part includes usages of network resources, storage, and computation where system activity changes within clock rates. For better energy utilization can done by diminishing static part and make dynamic consumption have more effective, is an open challenge for research.

In this analysis we provides various techniques and algorithm which main concern to is provides energy efficient cloud virtual machine allocation in cloud computing. This work will help to researcher for analyze various policy used energy efficient virtual machine provisioning.

In section 2, we analyses about Energy efficient computing resources. In section 3, various approaches and technique for energy efficient allocation of virtual machine in cloud computing. In section 4, we

Analyses various challenges and issues in present scenario. In section 5, we evaluated various challenges that used for research work in present scenario.

ENERGY EFFICIENT COMPUTING RESOURCES

Energy efficiency of large scale cloud computing

System can enhance by optimization of energy in different level. For every individual component need of measuring and modeling of energy consumption for reduces energy

utilization of entire system. There also need to optimize energy in different level [Orgerie2014] of infrastructure in cloud computing environment.

Modeling and measuring

There are various energy estimation models which determine energy consumption of computing resources. The power distribution units (PDUs) and temperature sensor is an external component which used for measurement of different parameter. These components are deployed with infrastructure. Most energy consume components are computing resource which contain processor, CPU and ALU.

Level optimization of nodes

In any computing system there are several computing nodes, each node can be energy efficient by optimization. Every node varies indifferent state of energy consumption. In this section, we discuss about various node level techniques, constructing different frequency and voltages for CPU and enhance more energy efficient of hardware and software.

Hardware energy-ware capability

Hard disk drive (HDD) is commonly used in high performance computing system, where platter rotation can optimize and can save energy in sleep state.

Sleep state

Techniques called suspend to disk, makes energy saving during booting up system. This is a process in which file from main memory is been stored in disk, when system again turn on it make available boot file disk to RAM.

Dynamic voltage and frequency scaling(DVFS)

This technology is common in high performance computing nodes, which adjust frequency and voltages to preserve energy in system. DVFS technique has performance state (also called p-state), which provide proper frequency under that processor can be operated [Nedevschi2008].

Software improvement

In software, there are some loops for waiting and active pool which was to the energy. Research had analysis that different version of OS consumes different energy in system [Eco Info 2011 2010].

Cloud computing and virtualization

The Cloud computing, a breakthrough of computing environment, which enable son-demand accessibility to shared computing resources appropriate. Virtualization is part of IaaS service model in the cloud that is providing a framework of isolating resource of a computer into multiple execution environments.

LITERATURE REVIEW

In cloud data center, there are many server associated with same datacenter which processes the user request. The [Goudarzi 2012] have improved the virtual machine replication to different server in such a way that reduces the energy consumption. Multi-dimensional Energy-efficient Resource Allocation(MERA) problem have been introduced in this policy, where they proof that general assignment problem(GAP) and bin package problem (BPP) are reduced to MERA problem. In Energy efficient VM Replication and placement algorithm (EVRP) algorithm, VM are assigning with energy cost of RAM and bandwidth to server where these VM are replicated to dynamic all yon to that active server that handles the active user request. This approach has 20% less energy consumption than prior VM placement technique.

The technique proposed by[MorenoandSolis2013] is improved energy efficiency with interference aware, main objective is to select best workload server by internal interference level to enhance energy utilization. In this technique, election of server, interference ratio and workload energy efficiency. The proposed algorithm reduces performance interference by 27.5%and increase energy efficiency up to 15% more than previous allocation policy.

Many technologies have evolved for server consolidation, where virtual machine placement algorithm has main issue for improving energy consumption. The genetic algorithm technique implement by [WuandGrant2012] for virtual machine allocation with seeing energy consumption in both server and communication network .In this technique, GA algorithm always gives best result than the FFD (First fit decreasing) based algorithm for virtual machine placement problem. The GA algorithm is independent of energy consumption, so it can be enhance for more accurate result in future.

In [BagheriandZamanifar2014], proposed a methodology for minimizing energy efficiency for cloud services

and also includes deadline miss rate. In this technique, resources are optimized be for allocation in order to decrease missing rate of real time task. This technique have scheduling policies contains two main part, first one VM selection policy and second VM allocation policy. The VM selection policy includes maximum processing power policy and random selection policy. The VM allocation policy uses LFPE (Least Free Processing Element) which is based on total utilization of host to reduce energy consumption.

In [Ghribi 2013], C. Ghribi and D. Zaghlache had implemented an algorithm which is extracted from two algorithms for Virtual machine scheduling in cloud data center. This technique considers optimization algorithm for energy aware allocation and consolidation algorithm for migration VM in cloud data center. Bin package allocation algorithm provides 90%, while combined migration algorithm gives 95% energy saving in simulation environment.

The [FlorenceandShanti2014] introduces a model for minimize energy consumption with load balancing over cloud data center named as EALB (energy aware load balancing).This technique maintains pattern history table (PHT) which contains record of classified job requested according the purpose either for I/O bound or CPU bound.

In a Cloud model was introduced by B. Liand L.Zhong [Li2009], which enables live application

Placement with energy efficiency consideration .It contains application encapsulated with VM, which includes scheduling of application with live migration. This application placement adopted the bin package problem and energy-aware heuristic algorithm.

Many of virtual machine allocation policy is implemented for energy efficiency as main concern, it also degrade performance of computing system. X.RuanandHChen[RuanandChen2015]have implemented a virtual machine allocation namely "PPRGear" ,which maintain the power and performance ratios for heterogeneous host. This approach is able to reduce 69.31% energy for heterogeneous host with minimum number of migration and little performance degradation for cloud computing data center.

FUTURECHALLENGES

This section includes various challenges and research issues in energy efficient allocation and provisioning of virtual machine in cloud computing.

A .Virtual Machine Migration and Replication

Cloud provider make available demanded resources by a virtual machine of a user, this virtual machine created in host. Hosts can multiple virtual machines only when it has available resource (RAM, BW and Processor) are under loaded. In [Goudarzi2012], techniques increase the energy efficiency of cloud data center by reducing number VM migration and also increase resources availability in data center. Whereas decision making method for energy efficiency also may enhanced by considering secondary storage and communication network are still research issues.

B .Virtual Machine allocation

In EnaCloud [Li2009], has make use of application live placement dynamically in virtual machine. The energy efficient application placement for large scale computing have applied appropriate heuristic algorithm. This technique not considers load balancing and performance factor in cloud data center. Optimization algorithm implement in [Bagheriand and Zamanifar 2014], optimize number of active host with considering their deadline provide energy efficient virtual machine allocation. But many host which have less priority will delayed through technique which can be future challenge for researchers.

C. Interference -aware VM placement

Interference occurred in high performance computing may occur, when any host are over loaded. Interference originated due workload and processor already engaged with other processes, so there need of scheduling process for different work in virtual machine.

In[MorenoandSolis2013], approaches implement for classification work load from cloud computing environment and also identify the performance interference. This mechanism provides 27.5% performance interference and increase15% energy efficiency better than current allocation policy. Hardware architecture and hypervisors not consider which can research challenge.

D. VM Scheduling

Energy consumption in cloud data center will cutback by effective virtual machine planning. An efficient allocation virtual machine can take place by bin package problem whose main goal is to have minimum number of migration.

An optimal allocation adopted in [Ghribi 2013], which is combination of energy aware allocation and consolidates in cloud data center. This technique includes line are integer programming which results reduction in energy consumption than VM migration algorithm. This methodology is good when load is high and less effective in low load. There is a future issue to design an algorithm which compatible in all modes.

E. Load Balancing

For effective utilization of host many algorithm make host full utilized which defiantly affect performance of host and have more energy consumption. To improve energy efficient virtual machine allocation, must think load parameter.

Effective load balancing (EALB) implement in [Florence and Shanthi 2014], which minimize energy unnecessary utilization with load balancing. It maintain pattern history table that contains work load present in different host and select virtual machine dynamically by considering BFD algorithm. Researcher can have more accurate result if they consider job classification through neural network.

F. Power and Performance Ratio

Many algorithms have been made for VM allocation and consolidation with energy efficient, but they compromise little with performance .So there should be an algorithm that will consider power and performance ratio for effective virtual machine allocation.

The PPR Gear model implemented in [RuanandChen 2015], have consider power and performance ratio with level optimization. This approach provides balance between host utilization and energy consumption, which give most prominent power efficiency level. That insures less energy consumption with little performance sacrifice but still have other parameter to be considering which act as future issues.

CONCLUSION

High performance computing always affected by energy consumption because it require more power and processor. Our analytical study will provide are searcher to recent energy efficiency virtual machine allocation and migration issues.

In this various approaches, we must consider communication and data transfer processes consumes more power than processing any task. However, dynamic virtual machine

provisioning and allocation with energy-aware and interference aware become a challenging issue for control interference occurring in hardware or software resource. That also maintains QoS without violating SLAs (service level agreement).

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Student's Routine Analysis Using Machine Learning Tools

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Abstract –

Several tools have been designed till today for the betterment and evaluation of student's performance. The results produced by these tools can help in decision making, that improves student's performance. This paper presents a survey of existing tools and techniques that have been designed in this area. This Paper uses a machine learning tool for analyzing and predicting the results based on various factors that can improve the student's performance. This paper also suggests that cognitive modeling is a better way that can improve the decision making capability and it is useful for making quality software and tools for performance analysis.

Keywords: Student's performance analysis, Machine learning tools.

INTRODUCTION

As we know in today's environment, there is a lack of quality education, and also the competition is increasing day by day. So there is a need for quality steps to improve the standard of the students and education also. For this several philosophers provide time to time suggestions and standards for performance improvement. Still, the systems are lacking behind. So researchers had come to a conclusion that the technology can be an important factor for analyzing the flaws that are present in the today's system, and why we lack behind. And also the use of technology makes decision-making process easy, as it can generate reports and graphs for analysis purpose. In the year 2016, Poza et al. [1] proposed teaching methodologies based learning tool. In this approach, the teaching/learning process should accomplish both knowledge assimilation and skill development. Previous works demonstrated that a strategy that uses continuous evaluation could meet both objectives. However, those studies did not evaluate and quantify the additional effort required to implement such strategies. This paper evaluates the additional instructor effort required when implementing continuous evaluation in a first-year Computer Fundamentals course in the Computer Engineering degree program at the Technical University of Valencia, Spain. In the year 2016, Elbadrawy et al. [2] proposed a matrix factorization and multi-regression approach based analyzer to predict the student's performance. Initially, it was designed for analyzing e-commerce applications. But it can be used to analyze students' performance. It uses a degree planner, which predicts about the students who have very poor performance and may not be able to pass the course. It also forecasts about the future courses by analyzing the past performance. In the year 2015, Ganeshan et al. [3] proposed a web-based analysis system for advising and performance analysis of the students. This system uses techniques that are used in recommendation systems. It divides students into groups having similar features. When a new student comes, this system assigns him a group by analyzing his features and also offers him similar courses. It uses k-means clustering algorithm. In the year 2015, Lopez et al. [5] proposed a data mining approach based model for the academic attrition (loss of academic status) at the University of Colombia. Two data mining models were defined to analyze the academic and non-academic data; the

models use two classification techniques, naive Bayes and a decision tree classifier, in order to acquire a better understanding of the attrition during the first enrolments and to assess the quality of the data for the classification task, which can be understood as the prediction of the loss of academic status due to low academic performance. The models aim to predict the attrition in the student's first four enrolments. First, considering any of these periods, and then, at a specific enrolment. Historical academic records and data from the admission process were used to train the models, which were evaluated using cross validation and previously unseen records from a full academic period. In the year 2014, Perikos et al. [6] proposed a data mining approach based performance analysis tool. It analyses the student's learning and produces the semantic rules that can be used further in analyzing the overall performance of the student for that particular course. It uses the decision tree approach for the production of semantic rules. This system uses semantic web and ontology techniques for increasing the quality of study material. In the year 2014, Huang et al. [7] proposed a self-help training system for the students of nursing course. This training system helps the student to learn the techniques of transferring a patient from bed to wheelchair. This system uses video and checklist method for demonstrating the skills. This system uses two Kinect sensors one for measuring posture of the trainee, and the other one is for the patient. In the year 2014, S. Bai et al. [8] proposed a performance evaluation system for analyzing the performance of the faculty members. According to this paper, faculty performance directly affects the performance of the students. So for this, they used an ontology-based system that uses semantic web rule language for designing the semantic rules. For testing, the integrity of this system a sample dataset is used for the public sector University of Pakistan. In the year 2014, Cheng et al. [9] proposed a multi-touch puzzle game for the primary class students to teach them the basic geographical concepts. It has two scaffolding tools having different levels of difficulty, which can develop the understanding levels of students. In the year 2014, Kaur et al. [10] proposed a rule based expert system for performance analysis. This paper focuses on the essence of an analysis tool that can evaluate students' performance. Because individual interaction to the students is not possible in the degree institutes due to the large strength of students. So this paper focuses on the key factors that can affect the performance of a student. This analysis tool uses fuzzy rules for performance analysis. This analysis is performed based on five key factors, family issues, university environment, teaching methodology, university system and personal reasons. In the year 2014, Mei et al. [11] proposed a reference aid system. Several lists of formulaic sequences have been proposed, mainly for developing teaching and testing materials. However, their limited numbers and insufficient usage information seem unable to benefit formulaic language use. To address these issues we have developed GRASP, a reference aid for formulaic expressions, to promote learners' productive competence. Users are allowed multiword inputs to target their desired phrases or collocations. Utilizing natural language processing techniques, our system categorizes and displays the structures and sequences in a hierarchical way. The corresponding example sentences are also provided. The formulaic structures serve as a quick access index. The formulaic sequences and corpus examples illustrate the real-world language use. Importantly, automatic summarization from language data lends support to the idea of data-driven learning. A single-group pre-posttest design was adopted to assess the effectiveness of GRASP on 150 Chinese-speaking college freshmen. In the year 2014, Mustafa et al. [13] proposed a new methodological approach for the field integrating learning and education, with other research areas, such as neurobiological, cognitive, and computational sciences. Specifically, presented work is an interdisciplinary piece of research aiming to simulate appropriately a challenging and critical issue concerned with academic performance in e-learning systems. Namely, considering face to face tutoring phenomenon observed while an interactive e-learning process is performed. Referring to strong interest announced by

educationalists to know how neurons' synapses inside the brain are interconnected. Together to perform communication processing among brain regions. Herein, special attention has been developed towards the dynamical academic evaluation of timely based brain learning via face to face (FTF) interactive tutoring. In the year 2014, Chew Li et al. [12] proposed their management system to manage the students' records. Currently, even though there is a student management system that manages the students' records in University Malaysia Sarawak (UNIMAS), no permission is provided for lecturers to access the system. This is because the access permission is only to top management such as Deans and Deputy Deans of Undergraduate and Student Development due to its privacy setting. Thus, this project proposes a system named Student performance analysis system (SPAS) keep track of students' result in the Faculty of Computer Science and Information Technology (FCSIT). The proposed system offers a predictive system that can predict the students' performance in course TMC1013 System Analysis and Design, which in turns assists the lecturers from Information System department to identify students that are predicted to have bad performance in course TMC1013 System Analysis and Design. In the year 2014, Simpson et al.

[14] proposed an evolution tool for performance analysis. Mathematics and physics courses are recognized as a crucial foundation for the study of engineering and often are prerequisite courses for the basic engineering curriculum. But how does a performance in these prerequisite courses affect student performance in engineering courses? This study evaluated the relationship between grades in prerequisite math and physics courses and grades in subsequent electrical engineering courses. Where significant relationships were found, additional analysis was conducted to determine minimum grade goals for the prerequisite courses. In the year 2013, Azzi et al. [15] focused on the role of experimental work in the field of education. This paper points out the basic need and essence of a laboratory in any engineering institute. But due to monetary problems not all institutes can afford the laboratory with the regular teaching course that affects severely the performance of the students. So as a solution they proposed the concept of Virtual Electronic Laboratories. This virtual laboratory concept uses a Bayesian Network tool for the performance assessment of the students. In the year 2013, Chen-Hsuan et al. [16] explained the importance of the scaffolding approach. This approach takes the previous knowledge of the students as input and produces the suggestions to improve the reading and concept building skills of the students. The basic aim of this approach is to improve the performance of each and every student of the class. For testing, this system 54 students was selected from an undergraduate course. Further, they found that the learning skills of the students are improved by the use of this tool. In the year 2012, Doctor et al. [17] proposed a Fuzzy rule-based technique for improving students' performance by providing proper feedback. It monitors group as well as individual's performance during study related activity and provides the feedback. It also analyses the teaching strategy of the teachers. In the year 2012, Barney Khurum et al. [18] explained that how these two approaches 'oral feedback' and 'Rubrics'

Fig. 1. Schematic diagram of a data analysis and prediction model

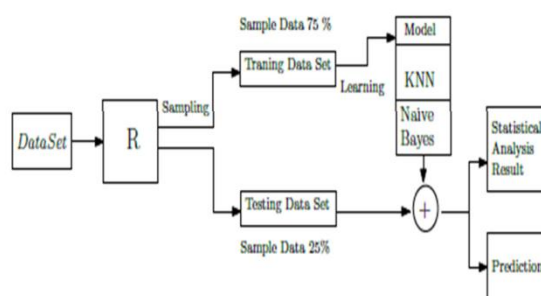


Fig. 1. Schematic diagram of a data analysis and prediction model

can improve the performance of students. The statistical output produced by these approaches helps in decision making and in solving the grading issue.

METHODOLOGY

This paper selects a data set. This dataset has a set of attributes having number's on (0-9) point scale, awarded based on the student's performance in their respective subjects.

TABLE I
TEST DATASET

Attendance	Assignment	Project	Lab-Performance	Seminar	Performance
0.6	0.8	0.4	0.0	0.0	OK
0.8	0.8	0.6	0.5	0.5	Good
0.3	0.0	0.6	0.8	0.6	Good

After that, a group of experts has assigned a performance rating by considering the marks obtained by the students in the respective field. Experts have categorized students into two categories, 'OK' for students having poor performance 'Good' for the students who have a good performance. After that, a statistical analysis tool 'R' is used for analyzing this data set that will help in predicting future data sets. R divides the data set into two parts training data set and testing data set respectively. Finally, all the constraints have been taken into consideration. This thesis presents the logical step by step method to develop the project by using proper validation and testing, to meet the requirement of the project.

EXPERIMENTAL DESIGN AND RESULT

In this paper, a sample dataset has taken from the records of Anand Engineering College, Agra. This dataset five factors (Attendance, Assignment, Project, Lab-Performance, Seminar) have been chosen that affects a student's overall performance. Further a statistical analysis tool R has been chosen, for building a model data set. This data set is further divided into two parts (Test Data-Set, Training Data-Set). Following schematic table (Table-1, Table-2) represents the sample test data set and training data set respectively. Training and test dataset is divided in the ratio of (75: 25) respectively. Finally the (Table-3) shows the result of Naive Bayes approach. It concludes that, error ratio is (20: 5). So the performance of the model is 75%:

TABLE II
TRAINING DATASET

Attendance	Assignment	Project	Lab-Performance	Seminar	Performance
0.3	0.7	0.0	0.9	0.9	OK
0.1	0.3	0.8	0.5	0.5	OK
0.0	0.2	0.1	0.2	0.7	Ok

CONCLUSION AND FUTURE WORK

The work can be concluded as follows. This paper covers all the objectives discussed above and full all the constraints.

TABLE III
NAIVE BAYES PREDICTION TABLE

Predicted	Good	Ok
Good	3	2
OK	3	17

The main concern of the teachers regarding the performance issue of the students is covered by introducing the analysis tool R. R is a statistical analysis tool that takes a data set as an input and builds a model that is used for predicting the future data set. This analysis tool R uses machine learning approaches like Naive Bayes, K-nearest neighbor first for building a model. Introduction section covers the basic review part that discusses the tools and approaches that have been designed in this area. Section methodology describes the machine learning tool and the approach for choosing a data set. Section experimental design and result shows the schematic diagrams of tables that are used for performance analysis. Finally, this paper suggests that one should use the cognitive modeling for designing the knowledge-base. So that they can produce better results.

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Solar Tracker: Efficient use of Solar panels

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Abstract-This study illustrates the possible system advantages of a straightforward solar tracking system that uses a servo motor and light sensor. In order to keep the panel at a proper angle to the sun's beams, this technique involves building a gadget that tracks the sun. We create, put into practice, and test an experimental solar tracking system. The experimental findings and design specifics are displayed.

Keyword- SolarTracker,H-Bridge,LDR,Solarpanel

INTRODUCTION

The discovery of the photoelectric mechanism and subsequent development of the solar cell—a semi-conductive substance that transforms visible light into a direct current—made it feasible to capture usable power from the sun. Solar arrays, which are made up of several electrically linked solar cells, provide a DC voltage that may actually be applied to a load. As efficiency increase, more people are turning to solar arrays or panels[3], which are particularly common in isolated places where installing energy connections is not financially feasible This alternative energy source is steadily gaining in favour, especially in light of the drawbacks of fossil fuels. Even 75 or 100 years ago, there was some utilization of renewable energy in the form of electricity. With varied degrees of effectiveness, sources including solar[3], wind, hydro, and geothermal have all been used. Hydropower and wind power are the two that are most commonly employed, with solar power being used to a lesser extent. This is explained by the solar cells' poor conversion efficiency and comparatively expensive cost. The cost of solar energy has now fallen to within a few cents per kW/h of other methods of generating electricity, and it will continue to fall with the development of new technologies like titanium oxide. In order to maximize the amount of energy produced by a solar power system, which has an average efficiency of 15-20% and a peak laboratory efficiency of 32%[1-5], energy recovery is required. Reducing inverter losses, storage losses, and light gathering losses are all part of this. The amount of light that is gathered depends on the sun's (or another light source's) angle of incidence with respect to the surface of the solar cell; the closer this angle is to perpendicular, the more power is produced. It is evident that throughout the course of the day, if a flat solar panel is positioned on level ground, the sunlight will have an angle of incidence close to 90° in the morning and the evening. The cell's capacity to collect light at such an angle is almost negligible, hence there is no output. Midday occurs when the angle of incidence approaches 0°, which causes a constant increase in power until the light incident on the panel is exactly perpendicular, at which time maximum power is reached. As the day wears on and darkness approaches, the

opposite occurs, and the growing angle causes the power to once more decline towards minimum. With this background, it becomes clear that keeping the angle of incidence as near to 0° as feasible is necessary to retain the panel's maximum power output. This is possible by tilting the solar panel to face the sun continually. Solar tracking is the practices of detecting and monitoring the sun's location. It was decided that in order to follow the sun efficiently, real-time tracking would be necessary, negating the need for external data during operation.

APPROCHES USES IN SOLAR TRACKER:

i) Ball and Beams system:

By adjusting the angular position of the servo, the design's goal is to control the movement of the ball down the track. The beam is made up of a steel rod running parallel to a nickel-chromium wire wrapped in a way that creates a track for a metal ball to freely roll along. The servo motor is connected to one end of the beams by a lever arm and gears, while the other end is fixed. The biased wire-wound resistor functions as a potentiometer-like wiper as it moves down the track. By monitoring the voltage at the steel rod, it is possible to determine where the ball is on the track. An optional remote sensor is also available for operation in master/slave tracking mode. This sensor is used, as the input to the Ball & Beam desired position, making the Ball on the beam follow the ball on the remote sensor.

i) H-bridge:

An electronic power circuit called an H-Bridge [1] enables the control of motor direction and speed. In order to achieve a mechanical aim, motors are frequently controlled by some sort of "brain" or micro controller. The motors are given instructions by the microcontroller, but it is unable to supply the power needed to operate them. The instructions from the microcontroller are entered into an H-bridge circuit, which amplifies them to drive a mechanical motor. Similar to how the human body produces mechanical movement, this approach involves the brain sending electrical impulses that serve as instructions but relies on the muscles to provide mechanical force. The H-bridge and the motor are both represented by the muscle. The H-bridge converts the weak electrical signal into a strong output after receiving it.. The H-bridge takes in the small electrical signal and translates it into high power output for the mechanical motor. This document will cover the electronic principles in creating the H-Bridge portion of the "muscle".

1. IMPLEMENTED TECHNIQUE:

The location of the sun has been tracked using a wide variety of techniques. The simplest method makes use of an LDR [5] - a Light Dependent Resistor - to monitor changes in light

intensity on the resistor's surface. Other approaches, like the setup of solar reference cells in Fig. 2, employ two phototransistors shielded from sunlight by a thin plate.

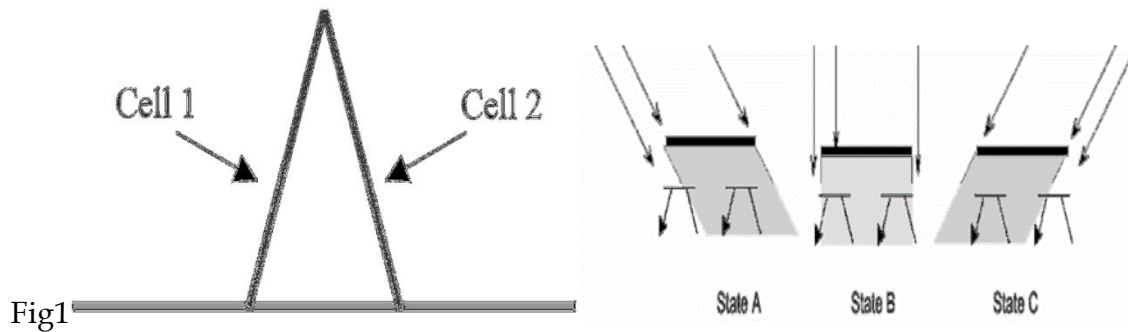
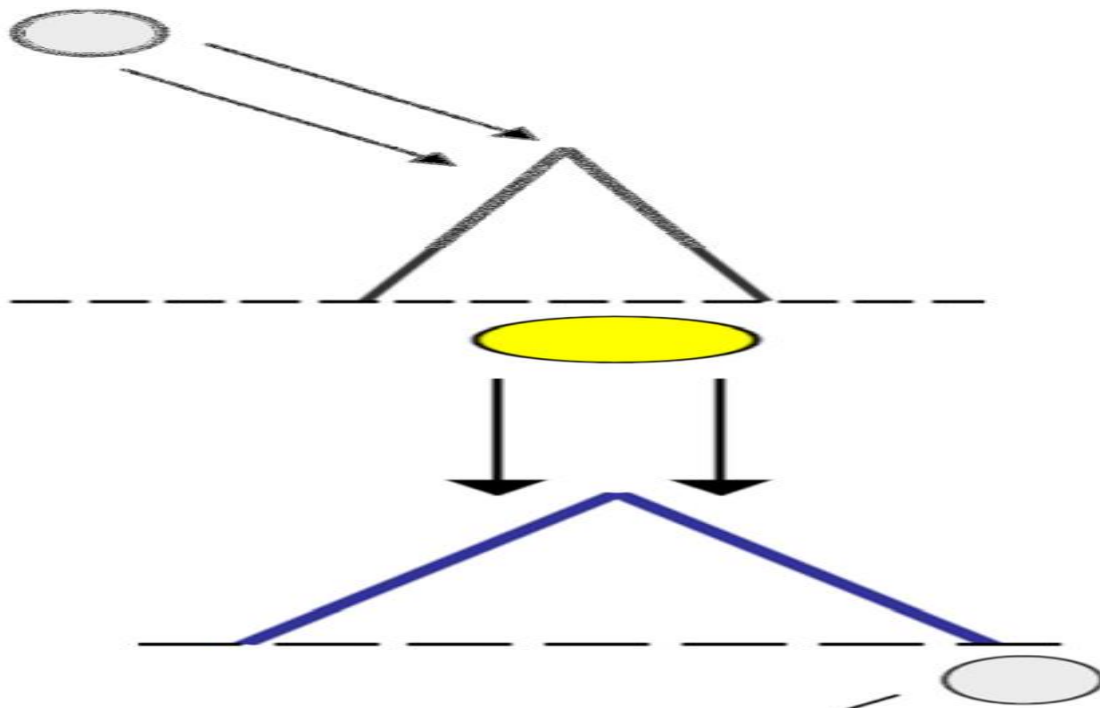


Fig. 1 Alternative solar tracking method

When morning arrives, the tracker is in state A from the previous day. The left phototransistor is turned on, causing a signal to turn the motor continuously until the shadow from the plate returns the tracker to state B. As the day slowly progresses, state C is reached shortly, turning on the right phototransistor. The motor turns until state B is reached again, and the cycle continues until the end of the day or until the minimum detectable light level is reached. The problem with a design like this is that phototransistors have a narrow range of sensitivity, once they have been set up in a circuit under set bias conditions. It was because of this fact that solar cells themselves were chosen to be the sensing devices. They provide an excellent mechanism in light intensity detection - because they are sensitive to varying light

and provide a near-linear voltage range that can be used to an advantage in determining the present declination or angle to the sun. As a result, a simple triangular set-up was proposed, with the two solar cells facing opposite directions, as shown in Fig. 2 In its rest position, the solar cells both receive an equal amount of sunlight, as the angle of incidence, although not 90° is equal in both cases. It can be seen in Fig. 3



(a)

(b)

(c)

Fig 3 Solar reference cells at a significant angle to the sun, solar reference cells at rest position

the angle of incidence of light to the reference panels will cause more light to fall on one cell than the other when the sun moves in the sky, provided that the solar tracker has not yet moved. There will be a voltage differential as a result, with the cell facing the sun having a larger potential than the other. Each cell will experience a measurable signal as a result of this occurrence, which an appropriate circuit can handle.

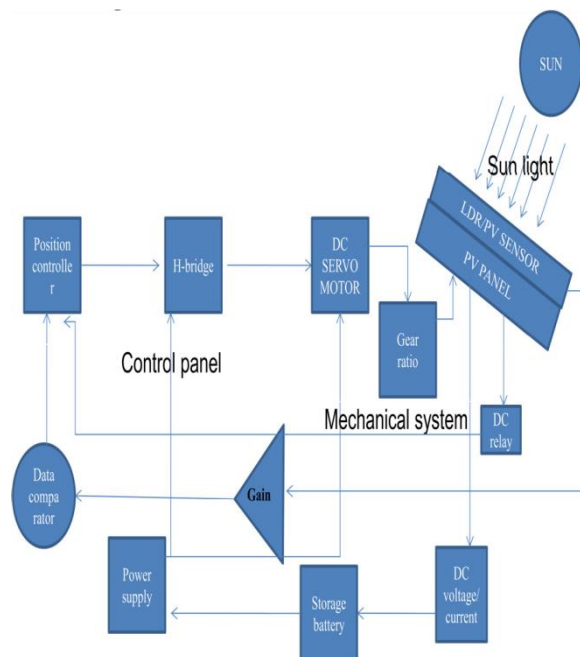
Major Benefits:

- A rise in the total efficiency of power gathering from 39% for a fixed panel to over 70% for the identical panel on the tracking device. This straightforward design makes it easy for someone to build the gadget themselves.
- A solar tracker is created using self-adjusting light sensors, which may be used to determine their angle to the sun by observing their voltage output. The simplest way to boost a solar power system's overall effectiveness for household or business customers is by using solar tracking.

Drawback:

- Issues develop during the rainy season due to the gloomy quality of the day, which prevents the sun's light from adequately reaching the panel.

Block Diagram

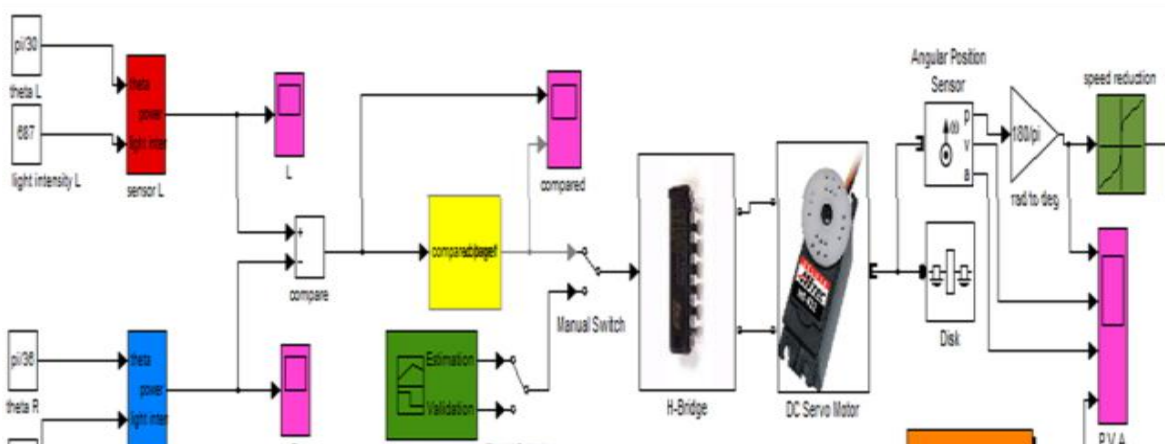


2. SIMULATION OF SOLAR TRACKER:

Our solar tracker system was created using a MATLAB simulation program, where we created several types of circuits to monitor the sun. In the simulation portion that is displayed, a light sensor that could detect both the right and left sensor's light intensity. Then both light sensor data are sent to the comparator, which compares the data and sends a voltage signal to the H-bridge to instruct the servo motor or DC motor to rotate in the forward or reverse direction, depending on whether the command is positive or negative. If the light sensor data are of equal intensity, the motor is stopped.

SENSOR DIRECTION	SENSOR	
L	R	
0		0
STOP		
1		0
COUNTERCLOCKWISE		
0		1
CLOCKWISE		
1		1
STOP		

SIMULATION:

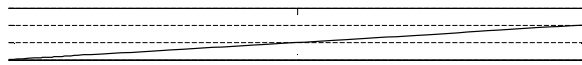


RESULT:

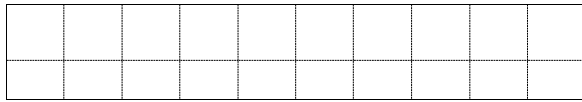
1.

i) CounterClockwiseRotation:

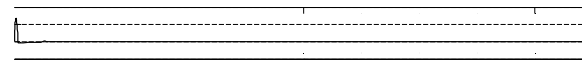
Hereinwhichtheleftsensorintensity ishigherthanright sensor the motor will rotate in left side i.e., counterclockwise



4

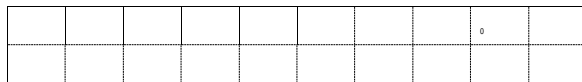


3.



4.

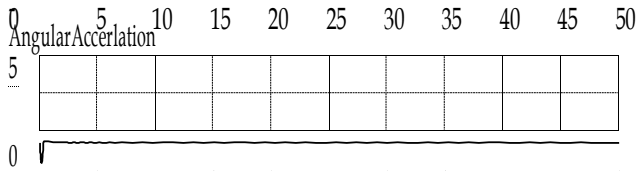
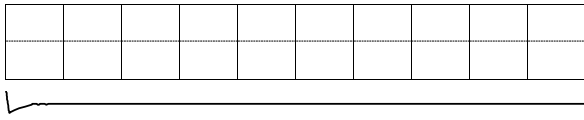
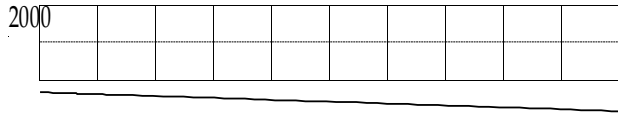
5.



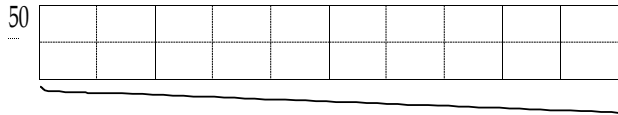
6. **ii) Clockwise Rotation:**

7. Here in which the right sensor intensity is higher than left sensor the motor will rotate in right side i.e., clockwise.

8.

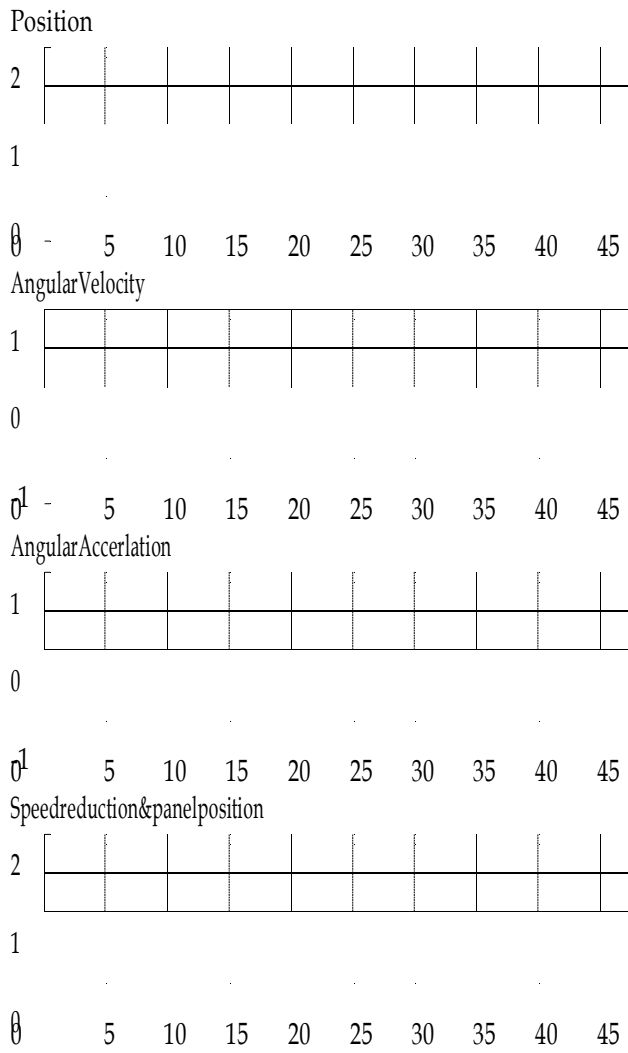


9.



iii) NoRotation:

When either sensor will get the equal intensity or when there is no light in panel than motor will not rotate i.e., stop.



10. CONCLUSION:

A solar tracker is created utilizing the novel idea of using tiny solar cells to serve as self-adjusting light sensors. By sensing their voltage output, the tracker may provide a changeable indication of their relative angle to the sun. The solar tracker proved effective in keeping a solar array at a sufficiently perpendicular angle to the sun by employing this technique. Over 30% more power was gained compared to a fixed horizontal array. Moreover, Solar trackers provide significant advantages for [renewable energy](#). With solar tracking, power output can be increased by about 30 to 40 percent. The increase in power output promises to open new markets for [solar power](#). However, solar trackers have several important disadvantages. A static solar panel may have a warranty that spans decades and may require little to no maintenance. Solar trackers, on the other hand, have much shorter warranties and require one or more actuators to move the panel. These moving parts increase installation costs and reduce reliability; active tracking systems may also use a small amount of energy (passive systems do not require additional energy). Computer-based [algorithm](#) solar trackers are more expensive, require additional maintenance, and become obsolete much faster than static solar panels, since they use fast-evolving electronic components with parts that may be difficult to replace in relatively short periods of time.

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Research on UHVDC System with High Renewable Energy Integration for Power Grid

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Abstract –Thousands of renewable energy power generation units are frequently installed in large-scale renewable energy bases, but since wind power differs from the reactive qualities of conventional thermal power plants, the renewable energy power plant is essentially a weak grid with strong voltage sensitivity. Weak voltage support capabilities and significant reactive power issues are characteristics of weak-end power grids. The randomness and fluctuation of renewable energy generation will affect the local power grid voltage in the linked area under operational settings such as large-scale renewable energy generation, heavy line load, and other operating conditions. Large swings are easily capable of causing catastrophic system stability and security failures. The challenge of system reactive voltage stability brought on by large-scale renewable energy grid connection has been brought to light by the occurrence of numerous large-scale wind power off-grid mishaps. It is urgent to study the renewable energy power generation unit in a large renewable energy power plant that takes into account the voltage distribution and rapid change of active power in the field, as well as centralised reactive power compensation equipment reactive voltage control mode. The existing reactive voltage control method based on a single renewable energy power plant has been unable to meet the needs of large-scale renewable energy development. The effect of centralised large-scale renewable energy on the stability of the power grid's reactive voltage is no longer only a local problem; it is now a worldwide problem. Research on the connecting of large-scale renewable energy grids to power networks and the allocation of reactive power is required. To prevent large-scale wind power off-grid incidents, the reactive power control of bases for large-scale renewable energy is coordinated with the main grid. This improves the voltage stability level of the entire system.

Keywords- Reactive Power Planning, component, High Proportion of Renewable Energy Integration, Power Grid Containing UHVDC System.

INTRODUCTION

The power grid is more significantly impacted by the output of renewable energy due to the growth in capacity and connect voltage level of renewable energy power plants. Power grid design, development, and stable operation face significant challenges as a result of the extensive integration of renewable energy power generation. There is no such thing as a prefabricated experience. Large-scale renewable energy power generation cannot be absorbed locally due to the distance between China's regions with abundant renewable energy resources and the load centre; instead, it must be transferred to the load centre through a long-distance transmission grid. The "centralised development, longdistance transmission" operation model has been adopted by China's large-scale renewable energy development, which is represented by wind and photovoltaic energy. Thousands of renewable energy power generation units are frequently installed in large-scale renewable energy bases, but since wind power differs from the reactive qualities of conventional thermal power plants, the renewable energy power plant is essentially a weak grid with strong voltage sensitivity. Weak voltage support capabilities and significant reactive power issues are characteristics of weak-end power grids. The randomness and

fluctuation of renewable energy generation will affect the local power grid voltage in the linked area under operational settings such as large-scale renewable energy generation, heavy line load, and other operating conditions. Large swings are easily capable of causing catastrophic system stability and security failures. The challenge of system reactive voltage stability brought on by large-scale renewable energy grid connection has been brought to light by the occurrence of numerous large-scale wind power off-grid mishaps. It is urgent to study the renewable energy power generation unit in a large renewable energy power plant that takes into account the voltage distribution and rapid change of active power in the field, as well as centralised reactive power compensation equipment reactive voltage control mode. The existing reactive voltage control method based on a single renewable energy power plant has been unable to meet the needs of large-scale renewable energy development. The effect of centralised large-scale renewable energy on the stability of the power grid's reactive voltage is no longer only a local problem; it is now a worldwide problem. Research on the distribution of reactive power in power networks that connect to large-scale renewable energy sources is required. To avoid large-scale wind power offgrid mishaps, the reactive power control of bases for large-scale renewable energy is coordinated with the main grid. This improves the voltage stability level of the entire system. Regenerative energy must be sent across great distances at high capacity because to the reverse distribution of supplies and loads. In this situation, DC gearbox has evolved into a more cost-effective and dependable gearbox method. The development of UHV DC gearbox technology has gained widespread acceptance thanks to projects like the Jindongnan-Jingmen 1000 kV UHV AC pilot demonstration project, the Xiangjiaba-Shanghai 800 kV UHV DC demonstration project, and several UHV projects that have been placed into service and are operating reliably. Currently, LCC-type HVDC technology makes up the majority of the finished DC transmission technologies. In order for the LCC-HVDC system to function normally, the inverters must absorb a significant amount of reactive power, necessitating the installation of several reactive power compensation devices. However, the VSC terminal station of the under-researched flexible DC transmission technology VSC-HVDC can manage reactive power and doesn't need a robust grid. China has proposed a number of requirements for wind farm operation control in the guidelines for grid connection of wind power, including the requirement of a specific amount of wind farm reactive power, in order to address the issue of reactive voltage caused by intermittent and random wind energy large-scale access to the grid. The operational range can be dynamically modified online in accordance with the voltage level or the grid dispatching department's directions.

The voltage control of the transmitting end grid has been impacted by large-scale renewable energy integration and high-capacity multi-DC transmission, and it is challenging to regulate the voltage of the transmitting end grid. In order to fully utilise the reactive power support capabilities of wind farms, the reactive power control capabilities of AC grids, and coordination, it is urgent to study the reactive power planning technology of large-scale renewable energy centralised access and sending-end AC grids using multi-DC transmission technology. With the use of renewable energy and DC transmission technology, the power grid may operate with stable voltage thanks to the reactive power management capacity of the receiving station's reactive power compensation equipment.

REACTIVE POWER PLANNING TECHNOLOGY OF POWER GRID CURRENT STUDY

The design, operation, and stability of renewable energy link to power networks have drawn more attention in China as a result of the country's recent large-scale growth of renewable energy. In order to address the significant problems brought on by large-scale renewable energy integration, independent research and development based on foreign experience in combination with the actual situation of China's renewable energy development is required. This is because China's model for developing renewable energy and its method of connecting to power systems differ significantly from those in developed countries in Europe and the United States.

A. Reactive Power Following Centralised Integration Of Renewable Energy

With previous study and use of renewable energy power generation, particularly wind power, many years of expertise in wind farm voltage optimisation control and reactive power allocation have been gathered. The concept of coordinated control of renewable energy power stations and grid voltages was proposed by developed nations that generate renewable energy abroad, such as Denmark and Spain. These nations have conducted research on reactive power demand and reactive power compensation device configuration after renewable energy integration. On the one hand, a sophisticated station-level reactive power control system has been developed, allowing it to coordinate the operation of wind turbines and centralised reactive power compensation devices, ensure the grid connection point's voltage quality, and bring the performance of the wind farm close to or up to that of Traditional energy sources. Although there has been less research done on this topic and reactive power has not been examined in conjunction with reactive voltage, it is understood that stable control of reactive voltage following the integration of large-scale renewable energy in the future will become a significant bottleneck limiting the transmission capacity of local areas. Despite the fact that foreign nations have some experience with reactive voltage control of renewable energy power generation units and voltage coordinated control of renewable energy power stations, due to the intermittent and unpredictable nature of renewable energy output, how to increase the concentration in the station the operating economy of the reactive power compensation device enables the voltage of the entire renewable energy power plant to be controllable during the day. China's wind energy industry has grown quickly in recent years. The problem of reactive voltage brought on by wind power / photovoltaic access has come under intense scrutiny in provinces and areas with a high percentage of solar installation. Current domestic research has been approximated or connected to reactive power voltage stability and regulation of the grid after wind power / photovoltaic access systems have been implemented. The characteristics of a reactive power source in a doubly-fed/direct-drive wind turbine, a wind farm booster station, and the output of a single wind farm are the main topics of domestic research on the reactive power voltage stabilization mechanism of the grid after the wind power is connected to the system. The effect of the R/X ratio on the area's voltage stability when wind power is supplied. For large-scale wind generation centralized links to the power grid, there is no systematic ground-level reactive voltage analysis. Currently, domestic research on controlling the reactive power voltage of the grid after renewable energy is linked to the system is largely separated into station level and renewable energy producing unit level. Using wind power as an example, the reactive power regulation limit of a single wind turbine and the converter control technique within a variable speed constant-frequency wind turbine are the main topics of study on reactive voltage control at the wind turbine level. coordinated operation of the wind farm's various reactive voltage adjustment devices is necessary to reduce voltage variations brought on by changes in wind speed. Rarely is the reactive voltage of the entire system researched once the large-scale wind power bases are linked to the power grid. The wind power bases are not taken into account in the study on the reactive power design and optimisation of the complete system.

B. Power reserve for HVDC system

Submarine cable transmission was the first industry to use HVDC technology. Early initiatives included transmission systems in Sardinia, Italy (1967), and Gotland, Sweden (1954). After then, long-distance gearbox was used with it. The Pacific Intertie (1970) project on the Pacific Coast of the United States and the Nelson River DC transmission project (Nelson River, 1973) in Canada are examples of related projects. A mercury arc valve served as the DC gearbox converter at this time. In 1972, a significant turning point in the development of DC gearbox technology took place. The thyristor valve made its debut as the converter device for DC transmission in the Il River back-to-back DC transmission project that asynchronously connected Quebec and New Brunswick. Since then, the development of DC transmission in world basis. The JiabaShanghai f 800kV UHV DC demonstration project was formally launched by the State Grid Corporation of

China in 2010. The Xiangjiaba—Shanghai 800kV UHVDC transmission demonstration project is the world's biggest DC transmission channel, with the greatest voltage level (800kV), the longest transmission distance (1980km), and the largest transmission capacity (6400MW). High-voltage IGBTs started to become available in the early 1990s (3.3 kV in 1997 and 6.5 kV in 2004), allowing for the use of IGBTs as voltage source converters for DC power transmission. The Helsian experimental project, the first DC power transmission system in the world to use voltage source commutation technology, went into operation in 1997. The converter utilises a pulse width modulator (PWM), an IGBT valve, and a two-level three-phase bridge construction. The inverter's AC output and IGBT valve switching are both under the control of modulated PWM technology. The technical use of flexible DC power transmission technology has been realised for the first time with the commissioning of Hersheim's experimental project.

The introduction of the switchable power electronic device commutation technology into the field of DC power transmission signifies the transition of this technology into a new stage of development. The economic capacity of DC transmission lines has been decreased to tens of MW by the development of VSC-HVDC transmission systems. The world's first commercially run VSC-HVDC gearbox project was launched in 1999 on the Swedish island of Gotland. VSC-HVDC gearbox technology has advanced quickly with the growth of technology. The Trans Bay Cable project in the United States, which went into service in 2010, has a transmission capacity of 400 MW and a voltage of 200 kV. Wind farms can be safely connected to the electricity grid thanks to VSC-HVDC transmission technology, which provides significant benefits for the grid integration of wind generation. The Gotland Project (50MW, 80kV), which was put into operation in 1999, not only transported the island's plentiful wind resources to the mainland, but it also provided the dynamic reactive power support needed by wind power sites, resolving the problem of frequency instability, voltage flicker, and tide fluctuations, and enhancing the stability of the connected AC system. For the purpose of studying the usage of VSC-HVDC power converters to provide overall frequency conversion for wind turbines, Tjaereborg's experimental project (7.2MW, about 9kV) was conducted in Denmark in 2000. In addition to attempting to use VSC-HVDC power transmission to the grid connection of wind farms, this research offered a helpful resource for the grid connection of future large-scale offshore wind farms with a capacity more than 100 MW.

TECHNIQUE OF REACTIVE POWER PLANNING

A. HVDC system's operating principal

In general, the maximum installed capacity of renewable energy power plants is constrained by the transmission capacity of the line and the voltage stability limit of the grid. The capacity of connected renewable energy power stations is constrained by the grid's own conditions when grid planning is not coordinated with the renewable energy plan. This is because the grid's ability to accommodate renewable energy frequently cannot adapt to renewable according to the requirements of energy planning and development. Using wind power as an example, when a wind farm's installed capacity is big and its production is high, both the wind farm's reactive power demand and the transmission line's reactive power loss rise. The issue of decreased margin and the grid's voltage stability constraint place a cap on the total installed capacity of wind farms.

In-depth research must be done on the reactive voltage issue brought on by the grid connection of renewable energy, reactive power connected to the power grid by renewable energy start with the analysis of voltage problems, grasp the reactive power regulation performance of renewable energy power generators, and other pertinent research needs to combine the theoretical analysis method with the practical work of large-scale renewable energy integration in the power grid.

The ideal control technique for a reactive power allocation method for a substantial renewable energy base should be investigated. Thyristors are primarily used in LCC- HVDC as switching components. The thyristor converter valve has a low switching frequency, is incapable of self-shutdown or phase reversal, and can only be regulated to open. As a result, the converter's performance is severely limited. As a result, an AC power supply with suitable strength and capacity is needed for LCC-HVDC technology. The AC point's shortcircuit capacity is at least three times more than the DC system's rated capacity. It can convert DC to AC so that the power receiving system may use it. When there isn't a nearby AC grid, STATCOM can be utilised to maintain the required voltage for offshore wind farms. The LCC converter cannot independently regulate the active power and reactive power of the system since it can only be controlled by altering the control amount of the converter's firing angle. A significant portion of the reactive power – between 40% and 60% of the DC power – must also be consumed by the LCC converter in the converter city at the same time. As a result, each converter station requires a substantial amount of reactive power compensation machinery.

B. Technical Approach

It begins with a theoretical approach, examines the contributing causes to the reactive voltage stability issue when renewable energy is connected to the grid, and investigates the effects of large-scale renewable energy grid connection on system voltage stability. Analyse the operating characteristics of renewable energy power generation units and reactive power compensation equipment, research the operational characteristics of various reactive power sources and their cooperating processes, and suggest the reactive power allocation capacity and performance requirements under steady state and transient conditions. Perform technical analysis of off-grid accident simulations including renewable energy bases, and research wind power reactive power coordination control solutions based on reactive power regulation capabilities and dynamic reactive power support capabilities of renewable energy generating units. As large-scale renewable energy bases are connected to the grid, study is also done on the reactive power allocation needs of the system.

The model of renewable energy and LCC-HVDC transmission systems was constructed in the simulation software based on the gathering of technical data of the real engineering and primary network transmitted by China's renewable energy through the DC grid. Reactive power allocation technology, work compensation device, and grid-connected transmission system for large-scale renewable energy. Set up a DC power grid under fault conditions, research the method of transient reactive power planning for the entire network including renewable energy and DC transmission, and carry out large-scale renewable energy fluctuations on the voltage of the LCCHVDC power grid transmission-end system and its reactive power configuration needs analysis.

CONCLUSION

Over 300 wind turbine off-grid mishaps have occurred nationwide since 2010. most justifications for Off-grid accidents occur when wind turbines are isolated from the grid during low-voltage situations brought on by grid or wind farm failures because they lack the capacity to ride through low voltage. However, in many mishaps the high-voltage protection went offline as a result of the reactive power compensation equipment not being coordinated and regulated in time owing to the quick change in active power. In addition to the accident mentioned above, some large wind farms frequently result in the disconnecting of the wind turbine over-voltage or under-voltage protection from the grid because of excessively long lines, unreasonable wind turbine control modes, and unoptimized control parameters. In typical operation, the active power of wind farms frequently varies substantially, impacting the power system's ability to run safely and predictably. The field voltage dispersion and quick change of active power are not taken into consideration by the reactive voltage control mode of wind turbines and centralised reactive power compensation equipment in big wind farms. Inconsistent control methods used

by the various wind farm nodes, and protection from high and low voltage for each node's voltage. The increase of accidents is mostly caused by the degree of imbalance. As a result, one of the key barriers to the integration of wind power is the issue of reactive power following centralised connection to renewable energy, and study into this issue is urgently required.

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Investigating the Effects of Workplace Diversity on Creativity and Innovation

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Abstract:

This research article explores the effects of workplace diversity on creativity and innovation within organizations. Drawing upon a comprehensive review of existing literature and empirical studies, the article examines the relationship between diversity and the generation of new ideas, problem-solving capabilities, and innovation outcomes. The findings highlight the positive impact of workplace diversity on creativity and innovation, providing insights into the mechanisms through which diversity enhances organizational performance and competitiveness. The article concludes with recommendations for organizations to effectively harness the potential of diversity to foster a culture of creativity and innovation.

Keywords: workplace diversity, creativity, innovation, problem-solving, organizational performance

Introduction:

Workplace diversity has become increasingly recognized as a catalyst for creativity and innovation within organizations. The presence of individuals with diverse backgrounds, perspectives, and experiences can significantly impact the generation of new ideas, problem-solving capabilities, and innovation outcomes. This article aims to explore the effects of workplace diversity on creativity and innovation, highlighting the ways in which diversity contributes to organizational success.

Understanding Workplace Diversity:

1.1 Definition and Dimensions of Workplace Diversity:

1.2

Workplace diversity encompasses various dimensions, including demographic diversity (e.g., age, gender, ethnicity), cognitive diversity (e.g., different thinking styles, approaches to problem-solving), cultural diversity (e.g., nationalities, religions, languages), and experiential diversity (e.g., professional backgrounds, educational experiences). Each dimension brings unique perspectives and insights to the organization.

1.2 Importance of Workplace Diversity in the Modern Business Environment:

In today's globalized and multicultural world, organizations that embrace diversity are better positioned to understand and meet the needs of diverse customer bases. Workplace diversity fosters inclusivity, enhances creativity, improves decision-making, and enables organizations to attract and retain top talent. Additionally, diversity has become an important factor in enhancing organizational reputation and brand image.

Creativity and Innovation:

2.1 Definitions and Differentiation between Creativity and Innovation:

Creativity refers to the generation of novel and valuable ideas, while innovation is the successful implementation of these ideas to create tangible outcomes. Creativity involves the ability to think beyond traditional boundaries and explore new possibilities, while innovation requires turning these ideas into practical solutions that drive organizational growth and competitiveness.

2.2 Significance of Creativity and Innovation in Organizational Success:

Creativity and innovation are essential for organizations to adapt to a rapidly changing business landscape. They enable organizations to develop unique products, services, and processes, stay ahead of competitors, respond to customer needs, and drive sustainable growth.

2.3 Factors Influencing Creativity and Innovation:

Several factors influence creativity and innovation, including organizational culture, leadership support, resources, and the work environment. Workplace diversity has emerged as a key factor that significantly impacts the creative and innovative potential of organizations.

The Link between Workplace Diversity and Creativity:

3.1 Diverse Perspectives and Knowledge:

Workplace diversity brings together individuals with different backgrounds, experiences, and expertise. This diversity of perspectives and knowledge leads to a wider range of ideas and insights, stimulating creativity and enabling teams to approach problems from multiple angles.

3.2 Cognitive Flexibility and Problem-Solving:

Diverse teams tend to exhibit higher cognitive flexibility, as they can draw upon a broader range of problem-solving approaches. This flexibility allows for more innovative solutions to complex challenges, as diverse perspectives contribute to a richer pool of ideas and alternative viewpoints.

3.3 Enhanced Information Processing and Decision-Making:

Diverse teams have access to a wider range of information sources, which facilitates more comprehensive and informed decision-making. Different perspectives and experiences help identify potential biases, challenge assumptions, and ensure a more thorough evaluation of alternatives.

3.4 Challenging Assumptions and Groupthink:

Workplace diversity disrupts groupthink, a phenomenon where homogeneous groups tend to conform to a dominant perspective, hindering innovation. Diverse teams encourage members to question assumptions, challenge traditional norms, and explore unconventional ideas, fostering a culture of innovation.

3.5 Stimulating Creativity through Collaboration and Exchange of Ideas:

Workplace diversity promotes collaboration and the exchange of ideas among team members. By fostering an inclusive environment that encourages open dialogue and respectful disagreement, diverse teams can leverage collective creativity and generate innovative solutions.

The Impact of Workplace Diversity on Innovation:

4.1 Enhanced Product and Service Development:

Workplace diversity fuels the development of products and services that cater to a broader range of customer needs. Diverse perspectives and cultural insights enable organizations to understand different market segments and design innovative offerings.

4.2 Market Expansion and Global Competitiveness:

Organizations with diverse workforces are better equipped to operate in global markets. The ability to understand diverse customer preferences, cultural nuances, and local market dynamics gives them a competitive advantage, facilitating expansion and growth.

4.3 Organizational Agility and Adaptability:

Diversity fosters organizational agility by enabling organizations to adapt to changing market conditions and seize new opportunities. Diverse teams are more adept at identifying emerging trends, anticipating shifts in customer preferences, and adapting strategies accordingly.

4.4 Employee Engagement and Retention:

Workplace diversity positively impacts employee engagement and retention. When employees feel valued and included, they are more likely to be committed, motivated, and satisfied in their roles. A diverse and inclusive workplace fosters a sense of belonging and creates an environment where all employees can thrive.

Conclusion:

Workplace diversity plays a crucial role in driving creativity and innovation within organizations. By embracing diverse perspectives, knowledge, and experiences, organizations can foster a culture of innovation that leads to increased creativity, enhanced problem-solving capabilities, and improved innovation outcomes. The benefits of workplace diversity extend beyond innovation, positively impacting employee engagement, organizational reputation, and market competitiveness. To fully leverage the potential of diversity, organizations should strive to create an inclusive work environment, promote collaboration, and value diverse perspectives. Embracing workplace diversity is not only a moral imperative but also a strategic advantage in today's dynamic and interconnected business landscape.

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Exploring the Impact of Work-Life Balance Initiatives on Employee Well-being and Productivity

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Abstract:

This research article investigates the impact of work-life balance initiatives on employee well-being and productivity. The concept of work-life balance has gained increasing attention in recent years, as organizations recognize the importance of supporting employees in maintaining a healthy equilibrium between work and personal life. The article reviews existing literature on work-life balance initiatives, employee well-being, and productivity, and presents empirical evidence supporting the positive effects of work-life balance initiatives on employee outcomes. The findings suggest that implementing work-life balance initiatives improves employee well-being, reduces work-related stress, enhances job satisfaction, and increases productivity. The article concludes with implications for organizations to develop and implement effective work-life balance initiatives that promote employee well-being and enhance productivity.

Keywords: work-life balance, work-life balance initiatives, employee well-being, productivity, work-related stress, job satisfaction.

Introduction:

In today's fast-paced and demanding work environment, achieving a healthy work-life balance has become increasingly important. Organizations are recognizing the need to support their employees in maintaining a harmonious integration of work and personal life. Work-life balance initiatives aim to create an environment that promotes employee well-being, reduces stress, and enhances productivity. This article explores the impact of work-life balance initiatives on employee well-being and productivity, highlighting their significance in fostering a positive and sustainable work culture.

Defining Work-Life Balance:

Work-life balance refers to the equilibrium between work-related responsibilities and personal life. It involves effectively managing time and energy to meet professional commitments while also attending to personal and family needs, hobbies, and overall well-being. Work-life balance is essential for achieving optimal performance and overall life satisfaction.

The Importance of Work-Life Balance Initiatives:

2.1 Employee Well-being:

Work-life balance initiatives contribute to the well-being of employees. By providing support and flexibility, organizations help employees manage personal and work-related stress, reduce burnout, and improve overall mental and physical health. When employees feel supported in achieving a healthy balance, they experience higher levels of job satisfaction and overall life satisfaction.

2.2 Productivity and Performance:

Work-life balance initiatives positively impact employee productivity and performance. When employees have the freedom to manage their personal obligations alongside work

responsibilities, they experience reduced stress levels and increased focus and engagement. This, in turn, leads to higher productivity, enhanced creativity, and better problem-solving abilities.

Types of Work-Life Balance Initiatives:

3.1 Flexible Work Arrangements:

Flexible work arrangements, such as flexible working hours, telecommuting, compressed workweeks, and job sharing, provide employees with greater control over their work schedules. This flexibility allows employees to meet personal commitments and maintain a healthy work-life balance.

3.2 Paid Time Off and Vacation Policies:

Generous paid time off and vacation policies enable employees to take time off to rest, rejuvenate, and spend quality time with family and friends. Adequate vacation time reduces burnout and enhances overall well-being.

3.3 Family-friendly Policies:

Family-friendly policies, such as parental leave, on-site childcare facilities, and flexible parental work arrangements, support employees in managing their family responsibilities alongside their careers. These policies promote work-life balance and create a supportive work environment for employees with caregiving responsibilities.

3.4 Wellness Programs:

Wellness programs encompass initiatives that promote physical, mental, and emotional well-being. These programs may include gym memberships, stress management workshops, counseling services, and health screenings. By investing in employee wellness, organizations demonstrate their commitment to work-life balance and employee well-being.

The Impact of Work-Life Balance Initiatives:

4.1 Employee Well-being:

Work-life balance initiatives have a positive impact on employee well-being. They contribute to reduced stress levels, improved mental health, increased job satisfaction, and better work-life integration. Employees who feel supported in achieving work-life balance are more likely to experience higher overall life satisfaction and lower rates of turnover.

4.2 Employee Engagement and Retention:

Work-life balance initiatives enhance employee engagement and retention. Employees who perceive their organization as supportive of work-life balance are more committed to their work and less likely to seek opportunities elsewhere. This leads to higher employee retention rates, reduced recruitment and training costs, and increased organizational stability.

4.3 Productivity and Performance:

Work-life balance initiatives positively influence employee productivity and performance. By promoting well-being and reducing stress, employees are better able to focus, make sound decisions, and perform at their best. A healthy work-life balance fosters creativity, innovation, and job satisfaction, resulting in increased productivity and overall organizational success.

Implementing Work-Life Balance Initiatives:

5.1 Leadership Support and Commitment:

Work-life balance initiatives require leadership support and commitment. Leaders must champion work-life balance as a core value and ensure that policies and practices align with this belief. Leading by example and creating a supportive work culture that encourages work-life balance is crucial for successful implementation.

5.2 Communication and Training:

Organizations should communicate work-life balance initiatives effectively to all employees. Providing clear information about available programs, policies, and resources ensures that employees are aware of their options and can take advantage of work-life balance initiatives. Additionally, training programs can educate employees and managers on the benefits and best practices for work-life balance.

5.3 Regular Evaluation and Feedback:

Organizations should regularly evaluate the effectiveness of work-life balance initiatives and seek feedback from employees. This allows for continuous improvement and ensures that initiatives are meeting the evolving needs of employees.

Conclusion:

Work-life balance initiatives have a significant impact on employee well-being and productivity. By fostering a supportive work culture, implementing flexible work arrangements, promoting wellness programs, and providing family-friendly policies, organizations can create an environment that supports work-life balance. The result is enhanced employee well-being, increased productivity, improved employee engagement, and higher retention rates. Organizations that prioritize work-life balance initiatives demonstrate their commitment to the holistic well-being of their employees and contribute to a positive and sustainable work culture.

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The Influence of Organizational Justice on Employee Satisfaction and Commitment

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Abstract:

This research article examines the influence of organizational justice on employee satisfaction and commitment. Organizational justice refers to employees' perceptions of fairness in the workplace, encompassing distributive justice, procedural justice, and interactional justice. The article reviews existing literature on organizational justice, employee satisfaction, and commitment, and presents empirical evidence supporting the relationship between organizational justice and employee outcomes. The findings suggest that when employees perceive fairness in resource allocation, decision-making processes, and interpersonal interactions, it positively impacts their satisfaction and commitment to the organization. The article concludes with implications for organizations to foster organizational justice and enhance employee satisfaction and commitment.

Keywords: organizational justice, employee satisfaction, employee commitment, fairness, resource allocation, decision-making processes, interpersonal interactions.

Introduction:

Organizational justice is a crucial factor in determining employee satisfaction and commitment within an organization. It refers to employees' perceptions of fairness in the workplace, encompassing distributive justice, procedural justice, and interactional justice. When employees perceive fairness in the allocation of resources, decision-making processes, and interpersonal interactions, it positively influences their satisfaction and commitment. This article explores the influence of organizational justice on employee satisfaction and commitment, highlighting the importance of fairness in fostering a positive work environment.

Understanding Organizational Justice:

1.1 Distributive Justice:

Distributive justice refers to the fairness of outcomes and resource allocation in the workplace. It involves equitable distribution of rewards, recognition, promotions, and other tangible resources. When employees perceive that rewards and outcomes are distributed fairly based on their contributions and performance, they are more likely to be satisfied and committed.

1.2 Procedural Justice:

Procedural justice focuses on the fairness of decision-making processes within an organization. It involves transparency, consistency, and opportunities for employee participation in decision-making. When employees perceive that decisions are made through fair and unbiased procedures, they feel a sense of empowerment and trust in the organization, leading to higher satisfaction and commitment.

1.3 Interactional Justice:

Interactional justice relates to the fairness of interpersonal treatment and communication within the organization. It involves respectful and considerate treatment, informational fairness, and explanations for decisions. When employees are treated with respect and dignity, and their

opinions are valued, they develop a sense of belonging, resulting in increased satisfaction and commitment.

Employee Satisfaction:

2.1 Definition and Importance of Employee Satisfaction:

Employee satisfaction refers to the level of contentment and fulfillment an employee experiences in their work environment. It is crucial for organizational success as satisfied employees are more engaged, motivated, and productive. Satisfaction is influenced by various factors such as job design, work-life balance, compensation, and organizational justice.

2.2 Factors Influencing Employee Satisfaction:

Several factors contribute to employee satisfaction, including job autonomy, opportunities for growth and development, work-life balance, supportive leadership, and a positive work environment. Among these factors organizational justice has a significant impact on employee satisfaction.

2.3 The Role of Organizational Justice in Employee Satisfaction:

Organizational justice enhances employee satisfaction by creating a sense of fairness and equity. When employees perceive that they are treated fairly, they feel valued and respected, leading to higher levels of job satisfaction. Fairness in resource allocation, decision-making processes, and interpersonal interactions fosters a positive work environment that promotes employee satisfaction.

Employee Commitment:

3.1 Definition and Importance of Employee Commitment:

Employee commitment refers to an employee's emotional attachment, identification, and dedication to their organization. Committed employees are more likely to exhibit discretionary effort, loyalty, and a willingness to go above and beyond their job requirements. Commitment is crucial for organizational success and employee retention.

3.2 Types of Employee Commitment:

Employee commitment can be categorized into three types: affective commitment, continuance commitment, and normative commitment. Affective commitment reflects an emotional attachment to the organization, continuance commitment is driven by the perceived costs associated with leaving the organization, and normative commitment is based on a sense of obligation or moral responsibility.

3.3 Factors Influencing Employee Commitment:

Factors such as job satisfaction, organizational support, leadership effectiveness, and perceived fairness significantly influence employee commitment. Organizational justice plays a critical role in fostering commitment by creating a sense of trust, loyalty, and a shared belief in the organization's values and goals.

3.4 The Role of Organizational Justice in Employee Commitment:

Organizational justice positively influences employee commitment by instilling a sense of trust and fairness in the workplace. When employees perceive that they are treated fairly and their voices are heard, they develop a strong sense of commitment to the organization. Fairness in decision-making processes and interpersonal interactions enhances employees' identification with the organization and their willingness to contribute to its success.

The Influence of Organizational Justice on Employee Satisfaction and Commitment:

4.1 Distributive Justice and Employee Satisfaction/Commitment:

Fairness in resource allocation and rewards promotes employee satisfaction and commitment. When employees perceive that rewards are distributed equitably based on their performance and contributions, they are more satisfied and committed to the organization.

4.2 Procedural Justice and Employee Satisfaction/Commitment:

Fairness in decision-making processes and procedures enhances employee satisfaction and commitment. When employees have opportunities to participate in decision-making, receive transparent information, and perceive that decisions are made fairly, they develop a sense of trust and commitment to the organization.

4.3 Interactional Justice and Employee Satisfaction/Commitment:

Fairness in interpersonal treatment and communication positively impacts employee satisfaction and commitment. When employees are treated with respect, dignity, and courtesy, and when they receive fair and transparent communication, they develop a strong sense of satisfaction and commitment to the organization.

Implications for Organizations:

5.1 Creating a Culture of Organizational Justice:

Organizations should prioritize the creation of a fair and just work environment by promoting transparency, consistency, and respect. Leaders should model and reinforce fair behaviors, establish clear decision-making processes, and ensure that employees are treated with dignity and respect.

5.2 Enhancing Distributive Justice:

Organizations should strive for fairness in resource allocation, ensuring that rewards, promotions, and opportunities for growth are based on objective criteria and performance evaluations.

5.3 Enhancing Procedural Justice:

Organizations should focus on transparency, employee involvement, and clear communication in decision-making processes. Providing opportunities for employee input and feedback can enhance procedural justice perceptions.

5.4 Enhancing Interactional Justice:

Organizations should promote respectful and considerate treatment of employees, encourage open communication, and provide feedback and explanations for decisions. This fosters a positive work environment and enhances interactional justice perceptions.

5.5 Communication and Transparency:

Effective communication and transparency play a crucial role in promoting organizational justice. Regularly sharing information, providing feedback, and being responsive to employee concerns contribute to perceptions of fairness and ultimately enhance employee satisfaction and commitment.

Measuring and Assessing Organizational Justice:

Organizations should implement mechanisms to measure and assess organizational justice perceptions. Employee surveys, focus groups, and feedback mechanisms can help identify areas of improvement and gauge employee perceptions of fairness.

The Benefits of Organizational Justice:

7.1 Increased Employee Satisfaction:

Organizational justice positively influences employee satisfaction, leading to higher levels of engagement, motivation, and productivity. Satisfied employees are more likely to remain committed to the organization and perform at their best.

7.2 Enhanced Employee Commitment:

Organizational justice fosters a sense of trust, loyalty, and identification with the organization, resulting in higher levels of employee commitment. Committed employees contribute to a positive work culture, exhibit higher levels of discretionary effort, and are less likely to leave the organization.

7.3 Improved Organizational Performance and Productivity:

When employees are satisfied and committed, they are more engaged, motivated, and productive. Organizational justice contributes to creating a positive work environment, fostering collaboration, and stimulating innovation, ultimately leading to improved organizational performance and productivity.

7.4 Positive Organizational Reputation and Employer Branding:

Organizations that prioritize organizational justice and create a fair work environment enhance their reputation as an employer of choice. This improves their ability to attract and retain top talent, contributing to long-term organizational success.

Conclusion:

Organizational justice significantly influences employee satisfaction and commitment. Fairness in resource allocation, decision-making processes, and interpersonal interactions fosters a positive work environment and enhances employee perceptions of fairness. Organizations that prioritize organizational justice reap the benefits of higher employee satisfaction, increased commitment, improved performance, and a positive organizational reputation. By promoting fairness, transparency, and effective communication, organizations can create an environment that values and promotes organizational justice, ultimately leading to a more engaged and committed workforce.

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Exploring the Role of Organizational Ethics in Shaping Employee Behavior and Decision-Making

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Abstract:

Organizational ethics significantly influence employee behavior and decision-making within companies. This research article aims to investigate the role of organizational ethics in shaping employee behavior and decision-making processes. It explores the impact of ethical leadership, the establishment of an ethical climate, the influence of ethical training and communication, and the role of rewards and consequences. The findings emphasize the importance of promoting ethical behavior to enhance organizational culture, employee engagement, and long-term success.

Introduction:

Organizational ethics play a pivotal role in shaping the behavior and decision-making processes of employees within a company. In today's business landscape, where ethical misconduct can lead to severe reputational damage and legal consequences, fostering a culture of ethical behavior has become a critical priority for organizations. This article aims to explore the role of organizational ethics in shaping employee behavior and decision-making. It will delve into the importance of ethical leadership, the impact of ethical climate, and the influence of ethical training and communication in promoting ethical behavior within organizations.

Ethical Leadership:

Ethical leadership sets the foundation for promoting ethical behavior throughout an organization. Leaders who demonstrate high ethical standards and integrity serve as role models for employees. They establish clear ethical expectations and create a culture of trust, transparency, and accountability. Ethical leaders inspire employees to align their behavior and decision-making with ethical values, fostering a sense of moral responsibility and commitment to ethical conduct.

Ethical Climate:

The ethical climate within an organization refers to the prevailing perceptions and shared norms regarding ethical behavior. A positive ethical climate encourages employees to make ethical decisions and engage in ethical behavior. Factors such as ethical policies, ethical decision-making processes, and the presence of ethical role models shape the ethical climate. When employees perceive that ethical behavior is valued and rewarded, they are more likely to exhibit ethical conduct in their actions and choices.

Ethical Training and Communication:

Providing employees with ethical training and communication is crucial for shaping their behavior and decision-making. Ethical training programs equip employees with the necessary knowledge and skills to identify ethical dilemmas, analyze potential consequences, and make ethical choices. Effective communication channels that facilitate open dialogue and encourage reporting of ethical concerns create a supportive environment for ethical decision-making. Regular ethics-related communication and reinforcement of ethical expectations serve as reminders and reinforce the importance of ethical conduct.

Organizational Rewards and Consequences:

The rewards and consequences implemented by an organization play a significant role in influencing employee behavior and decision-making. When ethical behavior is recognized, appreciated, and appropriately rewarded, employees are motivated to continue exhibiting ethical

conduct. Conversely, clear consequences for unethical behavior deter employees from engaging in misconduct and reinforce the importance of ethical behavior. Organizations must align their reward systems and performance evaluations with ethical standards to promote ethical decision-making and discourage unethical practices.

External Influences:

External influences, such as industry regulations, legal frameworks, and societal expectations, also shape employee behavior and decision-making. Organizations operating within a highly regulated industry are more likely to emphasize and prioritize ethical behavior due to legal requirements and compliance obligations. Similarly, societal expectations and public scrutiny can significantly impact how organizations and employees approach ethical issues, as they strive to maintain a positive reputation and meet the expectations of their stakeholders.

Conclusion:

Organizational ethics play a crucial role in shaping employee behavior and decision-making. Ethical leadership, the establishment of a positive ethical climate, ethical training and communication, and appropriate rewards and consequences are key factors in fostering an ethical culture within organizations. By prioritizing and promoting ethical behavior, organizations can not only mitigate the risk of ethical misconduct but also enhance employee engagement, organizational reputation, and long-term success.

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The Role of Emotional Intelligence in Effective Team Dynamics and Organizational Success

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Abstract:

This research article explores the significant role of emotional intelligence (EI) in fostering effective team dynamics and contributing to organizational success. Emotional intelligence refers to the ability to recognize, understand, and manage emotions in oneself and others. By examining the impact of emotional intelligence on team communication, collaboration, trust, and overall performance, this study highlights the importance of developing emotional intelligence competencies within teams. The findings underscore the positive influence of emotional intelligence on team dynamics and its consequential effects on organizational success.

Introduction:

Emotional intelligence (EI) has emerged as a critical factor in determining the success of teams and organizations. Effective team dynamics and organizational success depend not only on technical skills and knowledge but also on the ability to understand, manage, and harness emotions. This article explores the significance of emotional intelligence in fostering effective team dynamics and its impact on organizational success. By examining the relationship between emotional intelligence, teamwork, and organizational outcomes, we can gain valuable insights into the importance of developing emotional intelligence competencies within teams.

Defining Emotional Intelligence:

Emotional intelligence refers to the ability to recognize, understand, and manage emotions in oneself and others. It encompasses a range of skills, including self-awareness, self-regulation, empathy, and effective interpersonal communication. Individuals with high emotional intelligence can navigate complex social interactions, build strong relationships, and respond adaptively to emotional situations.

Emotional Intelligence and Team Dynamics:

2.1 Enhancing Communication: Emotional intelligence enables team members to understand and interpret nonverbal cues, listen actively, and express their thoughts and feelings effectively. This fosters open and honest communication, leading to better collaboration and problem-solving within the team.

2.2 Building Trust: Emotional intelligence plays a crucial role in establishing trust among team members. By demonstrating empathy, understanding, and respect, individuals with high emotional intelligence create a supportive and inclusive team environment that encourages trust, psychological safety, and effective interpersonal relationships.

2.3 Conflict Resolution: Teams inevitably face conflicts, but emotional intelligence helps navigate these challenges constructively. Individuals with emotional intelligence can manage conflicts by remaining calm, understanding different perspectives, and finding mutually beneficial solutions. This leads to healthier team dynamics and more effective resolution of conflicts.

2.4 Promoting Collaboration: Emotional intelligence facilitates effective collaboration by encouraging cooperation, fostering a sense of shared purpose, and promoting teamwork. Team members with high emotional intelligence can effectively manage their own emotions and navigate the emotions of others, leading to enhanced collaboration and synergy within the team.

Emotional Intelligence and Organizational Success:

3.1 Employee Engagement and Satisfaction: Emotional intelligence positively influences employee engagement and job satisfaction. When team members feel understood, supported, and valued, they are more likely to be engaged in their work, resulting in higher levels of productivity and overall organizational success.

3.2 Team Performance and Productivity: Teams composed of members with high emotional intelligence exhibit improved performance and productivity. The ability to understand and manage emotions enables team members to work cohesively, solve problems effectively, and adapt to changing circumstances, leading to enhanced team performance.

3.3 Decision-Making and Problem-Solving: Emotional intelligence contributes to better decision-making and problem-solving within teams. By considering the emotions and perspectives of team members, individuals with emotional intelligence can make more informed decisions and generate innovative solutions to complex problems.

3.4 Leadership Effectiveness: Emotional intelligence is also critical for effective leadership. Leaders with high emotional intelligence can inspire and motivate their team members, establish strong relationships, and create a positive work culture. This, in turn, leads to improved organizational success.

Developing Emotional Intelligence in Teams and Organizations:

4.1 Training and Development Programs: Organizations can provide training programs to enhance emotional intelligence skills among team members. These programs can focus on self-awareness, empathy, communication, conflict management, and relationship building.

4.2 Hiring and Selection Processes: Organizations can incorporate emotional intelligence assessments into their hiring and selection processes to identify individuals with high emotional intelligence who are likely to contribute to effective team dynamics and organizational success.

4.3 Leadership and Management Practices: Leaders and managers can model emotional intelligence behaviors and create a supportive work environment that values and encourages emotional intelligence competencies.

4.4 Feedback and Coaching Mechanisms: Regular feedback and coaching sessions can help team members identify their strengths and areas for improvement in terms of emotional intelligence. This promotes continuous learning and growth.

Conclusion:

Emotional intelligence plays a crucial role in shaping effective team dynamics and contributing to organizational success. By fostering open communication, building trust, resolving conflicts, and promoting collaboration, emotional intelligence enhances team cohesion, productivity, and problem-solving capabilities. Organizations that prioritize the development of emotional intelligence competencies within teams are more likely to experience higher levels of employee engagement, improved team performance, and overall organizational success. Investing in emotional intelligence development through training, hiring practices, leadership behaviors, and a supportive work environment can yield long-term benefits and create a positive organizational culture that values emotional intelligence as a key driver of success.

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POTENTIAL TRENDS OF CORPORATE SOCIAL RESPONSIBILITY IN 2020`s FOR SUSTAINABLE FUTURE

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Corporate social responsibility (CSR) is a self-policing corporate strategy that enables an organisation to be socially accountable to its customers, employees, and stakeholders. Companies can be aware of their impact on the economic, social, and environmental aspects of society by engaging in corporate social responsibility, often known as corporate citizenship.

When a firm practises corporate social responsibility (CSR), it means that it operates in a way that benefits society and the environment rather than detracting from it.

Why Should a Business Adopt CSR?

Many businesses see CSR as an essential component of their brand image because they think that consumers will be more willing to buy from companies they perceive as being more ethical. In this regard, CSR initiatives can be a significant part of corporate PR. Additionally, some business founders are inspired to participate in CSR because of their convictions.

1. Enhanced Employee Satisfaction: Keep in mind that a company's treatment of its employees can be inferred from the way it serves the community.

People are likely to be more productive and contented at work if they feel respected and supported in their positions.

When a business offers its staff members the chance to volunteer during working hours, it helps to foster a sense of community within the business.

Employees frequently become more motivated and proud of their work as a result of these personal growth chances.

Companies with highly engaged staff were found to have 21 percent higher business profitability.

2. The capacity to make a positive contribution to the community: When social responsibility is prioritised, businesses are more likely to act morally and to think about how their operations will affect society and the environment.

When this is done, a company frequently starts to minimise the negative effects of its operations on the neighbourhood.

Many businesses will start looking for methods to alter their value chain or services in order to better serve the community. CSR thus has a favourable effect on the community.

3. Enhanced Public Image: Companies who exhibit corporate social responsibility in this digital age are getting recognition and acclaim for their efforts.

Keep in mind that promoting good deeds in your community is the only way to boost your brand's reputation.

When customers purchase goods and services from businesses that are improving their neighbourhood, they frequently feel good and happy about themselves.

Don't pass up the opportunity to raise awareness of your CSR programmes and your community involvement.

You can accomplish this by publishing, tweeting, or sharing your social media programmes.

When the public is aware of your good activities, your brand's reputation will improve.

4. Supports Being a Preferred Employer: Being a sought-after employer mostly entails a company's ability to recruit and retain top talent.

Being an employer of choice may be achieved primarily in two ways: first, by promoting work-life balance, and second, by offering favourable working conditions and workplace flexibility.

A strong corporate social responsibility framework will help a company become more appealing to possible future employees who are looking for companies with socially responsible activities, good ethics, and community-mindedness, according to one study. The benefits of corporate social initiatives to organisations are as previously mentioned.

FUTURE TRENDS AND DEVELOPMENTS OF CORPORATE SOCIAL RESPONSIBILITY

The future of corporate social responsibility (CSR) is expected to evolve and become even more crucial for businesses. Here are some potential trends and developments that could shape the future of CSR:

1. **Integrated Sustainability:** CSR will increasingly be integrated into core business strategies rather than being seen as a separate department or initiative. Companies will recognize that sustainability and social impact are fundamental to long-term success and will embed them into their operations, products, and services.
2. **Stakeholder Engagement:** Businesses will prioritize engaging with a broader range of stakeholders, including employees, customers, local communities, NGOs, and governments. Meaningful collaboration and dialogue will be essential to address social and environmental challenges effectively.
3. **ESG Integration:** Environmental, social, and governance (ESG) factors will be more deeply integrated into investment decisions. Investors will demand transparency and accountability regarding a company's ESG performance, and businesses will have to demonstrate their commitment to sustainable practices to attract capital.
4. **Climate Action:** The urgency of climate change will push companies to take more significant action to reduce their carbon footprint and mitigate environmental impacts. Climate-related goals, such as achieving net-zero emissions, will become more prevalent, and businesses will be expected to contribute to global sustainability efforts.
5. **Tech-Driven Innovation:** Technology will play a vital role in advancing CSR initiatives. Artificial intelligence, blockchain, big data analytics, and other emerging technologies will enable companies to measure, track, and report their social and environmental impact

more accurately. Tech-driven solutions will also support sustainable supply chains, circular economy practices, and renewable energy adoption.

6. **Social Justice and Inequality**: Businesses will increasingly address social justice issues, such as diversity, equity, and inclusion. Companies will be expected to promote equal opportunities, pay fair wages, and support marginalized communities. The focus on addressing systemic inequalities will grow, and CSR initiatives will be used as a means to drive positive social change.
7. **Global Collaboration**: Collaboration among businesses, governments, and civil society organizations will be essential to tackle complex global challenges. Partnerships and collective action will become more prevalent to address issues like poverty, human rights, and sustainable development goals.
8. **Reporting and Transparency**: There will be a greater emphasis on transparent reporting of CSR activities and outcomes. Standardized frameworks, such as the Global Reporting Initiative (GRI) and Sustainability Accounting Standards Board (SASB), will continue to evolve, enabling better comparison and benchmarking of companies' CSR performance.
9. **Employee Engagement**: Employees will play a vital role in driving CSR initiatives within organizations. Companies will invest in employee engagement programs, volunteerism, and skill development opportunities that align with their social and environmental goals. The focus will be on creating a strong culture of sustainability and shared purpose.
10. **Consumer Expectations**: Consumer demand for sustainable and socially responsible products and services will continue to grow. Businesses will need to adapt and respond by adopting more sustainable practices throughout their value chains, promoting transparency, and providing ethical options to meet changing consumer expectations.

It is important to note that these are potential trends and developments, and the future of CSR will depend on various factors such as evolving societal priorities, regulatory changes, and the commitment of businesses to embrace sustainable practices.

SEVERAL CHALLENGES OF CORPORATE SOCIAL RESPONSIBILITY

When considering corporate social responsibility (CSR) from an economic point of view, there are several challenges that companies may face. These challenges include:

1. **Cost implications**: Implementing CSR initiatives often involves additional costs for companies. These costs may include investments in sustainability measures, employee training, community development projects, and ethical sourcing practices. Balancing the financial implications of CSR with the company's profitability can be a challenge, especially for smaller businesses with limited resources.

2. Return on investment (ROI): Measuring the financial return on investment for CSR activities can be complex. While CSR initiatives can have long-term benefits such as enhanced brand reputation, customer loyalty, and employee engagement, quantifying and attributing these benefits directly to CSR efforts can be challenging. Demonstrating the economic value of CSR to stakeholders and investors is crucial.
3. Competitiveness and market positioning: Companies engaging in CSR must consider how their actions impact their competitiveness in the marketplace. Implementing sustainable practices and responsible business operations may require higher upfront costs, potentially affecting pricing strategies and competitiveness compared to industry peers who do not prioritize CSR. Finding ways to differentiate and communicate the economic benefits of CSR to customers can be a challenge.
4. Regulatory compliance: Compliance with evolving regulations and standards related to CSR can be demanding. Companies must stay up-to-date with changing legal requirements and industry standards related to environmental, social, and governance (ESG) issues. Failure to comply can result in legal and financial penalties, damaging the company's economic standing.
5. Complexity of supply chains: Ensuring responsible practices across the entire supply chain can be challenging from an economic standpoint. Companies may need to invest in supplier audits, monitoring systems, and capacity building to ensure ethical sourcing, fair labor practices, and environmental sustainability. These investments can add costs and complexity to the supply chain management process.
6. Reputation and brand risks: Companies engaging in CSR may face reputation risks if their actions are perceived as insincere or inconsistent with their stated values. Negative publicity related to social or environmental issues can harm a company's brand image and impact its economic performance. Building and maintaining a strong reputation for CSR requires ongoing effort and strategic communication.

Despite these challenges, many companies recognize the potential economic benefits of CSR, such as improved customer loyalty, enhanced brand reputation, access to new markets, and attracting and retaining top talent. By addressing these challenges effectively, companies can integrate CSR into their economic strategies and achieve sustainable business success.

EMERGENCE OF TOTAL QUALITY MANAGEMENT IN HEALTHCARE

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Abstract

This essay describes how healthcare organizations must concentrate on whole quality improvement. -Providing patients with acceptable, high-quality medical care at an affordable cost within a suitable timeframe; implementing a zero-error policy for all patient services, continuing an ongoing program to prevent errors, training medical staff members in such areas as error prevention, reducing delay time, and providing promptly reasonable to patient's needs. Therefore, there is an urgent need to monitor and maintain the paradigm change in the quality of healthcare delivery. It goes without saying that institutions that care about quality and are dedicated to constant quality improvement will enjoy the highest levels of consumer approval and prosper at the expense of others. Thus, TQM integrates internal quality metrics with value analysis and conformity to specifications and lays a strong emphasis on improving the Customer Satisfaction Index, which gives the promise of greater. Additionally, Total Quality of Performance that is directly related to healthcare security, nursing, and word boy attitudes, and the role of doctors in terms of "time" may be included. This covers appointment, delay, and service times, as well as timing for medical procedures like surgery and treatment. Total Quality Management as a Concept. The study is purely based on secondary data. Different journals, articles, newspapers, and a certain number of people were interviewed for research purposes.

Keywords: TQM, zero error policy.

INTRODUCTION

Today, all levels of hospitals in our communities have a fundamental interest in healthcare systems. Over time, healthcare systems will place more and more emphasis and dependence on whole quality management. Due to its growing significance, a growing portion of national and international resources are being allocated to the commercial and public sectors for use in hospital management systems.

Additionally, it may encompass the total quality of performance that is directly related to healthcare safety, security, nursing and word boy attitudes, and the role of doctors in terms of "time," which covers appointment, delay, and service times, as well as timeliness with regard to medical treatment and surgery. TQM could play a significant role in a hospital's competitive strategy for a high-quality healthcare system. Hospitals operating in crowded markets are more inclined to try to set themselves apart from the competition by offering higher-quality services. Thus, TQM combines internal quality measures with value analysis and adherence to specifications. It lays a strong emphasis on improving the Customer Satisfaction Index, which offers the promise of greater. In addition to direct medical services like diagnoses, medications, surgery, and treatment, acceptable quality services also comprise indirect operations like purchasing and administration, the expenses of which are represented in the price the customer pays.

Total Quality Management (TQM) is a management philosophy and approach that aims to improve the quality of products, services, and processes within an organization. It is a comprehensive and systematic approach that involves all members of an organization, from top-level management to frontline employees, in continuous improvement efforts.

TQM originated in the 1950s and gained popularity in the 1980s and 1990s. It emphasizes the importance of customer satisfaction, employee involvement, process improvement, and the use of data and statistical methods to drive decision-making.

General key principles of Total Quality Management include:

1. **Customer Focus:** TQM places a strong emphasis on understanding and meeting customer needs and expectations. Organizations strive to deliver high-quality products and services that consistently satisfy customers.
2. **Continuous Improvement:** TQM promotes a culture of continuous improvement where all employees are encouraged to identify and contribute to improving processes, products, and services. This involves regularly evaluating and refining existing practices.
3. **Employee Involvement:** TQM recognizes that employees are valuable resources with valuable insights and ideas. It encourages their active participation in problem-solving, decision-making, and process improvement initiatives.
4. **Process-Oriented Approach:** TQM emphasizes the importance of understanding and managing processes. By focusing on the entire process rather than isolated tasks, organizations can identify bottlenecks, inefficiencies, and areas for improvement.
5. **Data-Driven Decision Making:** TQM advocates the use of data and statistical methods to make informed decisions. Organizations collect and analyze data to measure performance, identify trends, and make evidence-based decisions for improvement.
6. **Leadership Commitment:** TQM requires strong leadership commitment and involvement. Leaders must set clear quality goals, provide necessary resources, and support employee involvement in improvement efforts.
7. **Supplier Relationships:** TQM recognizes the importance of developing strong relationships with suppliers. Organizations work closely with suppliers to ensure the quality of incoming materials, components, and services.

By implementing Total Quality Management principles, organizations strive to achieve higher customer satisfaction, improved operational efficiency, reduced waste and defects, increased employee morale and engagement, and ultimately, sustained business success.

WHAT IS TQM IN HEALTHCARE?

Now as we know Total Quality Management (TQM) is a management philosophy and approach that aims to improve the quality of products, services, and processes within an organization. While TQM originated in the manufacturing industry, its principles and techniques have been adapted and applied to various sectors, including healthcare.

In healthcare, TQM focuses on enhancing patient care, safety, and satisfaction by involving all members of the healthcare team and optimizing processes. Here are some key aspects of TQM in healthcare:

- **Patient-Centered Care:** TQM emphasizes patient-centered care, where the needs, preferences, and safety of patients are the central focus. It involves actively engaging

patients in their own care decisions, ensuring effective communication, and promoting a culture of empathy and respect.

- **Continuous Improvement:** TQM emphasizes the concept of continuous improvement, encouraging healthcare organizations to continually assess and improve their processes, systems, and outcomes. This involves measuring performance, identifying areas for improvement, implementing changes, and monitoring the results to ensure sustained progress.
- **Teamwork and Collaboration:** TQM recognizes the importance of teamwork and collaboration in delivering high-quality healthcare. It encourages multidisciplinary teams to work together, share knowledge and expertise, and collaborate on problem-solving and decision-making processes.
- **Quality Measurement and Metrics:** TQM relies on the use of quality measures and metrics to assess and monitor performance. This includes collecting and analyzing data related to patient outcomes, safety incidents, process efficiency, and patient satisfaction. These metrics help identify areas of improvement and track progress over time.
- **Process Optimization:** TQM emphasizes the need to optimize healthcare processes to eliminate waste, reduce errors, and enhance efficiency. This involves applying lean principles, such as value stream mapping, to identify and eliminate non-value-added activities and streamline workflows.
- **Training and Education:** TQM recognizes the importance of providing training and education to healthcare professionals to enhance their skills and knowledge. This includes ensuring that staff members have the necessary training to perform their roles effectively, understand quality improvement methodologies, and contribute to a culture of continuous learning.
- **Patient Safety:** TQM places a strong emphasis on patient safety and the prevention of medical errors. It encourages the use of evidence-based practices, the implementation of safety protocols, the reporting and analysis of adverse events, and the establishment of a culture of transparency and accountability.

By implementing TQM principles and techniques, healthcare organizations can improve the quality of care, enhance patient satisfaction, reduce costs, and promote a culture of continuous improvement and innovation.

WHY THERE IS A NEED FOR TQM IN HEALTHCARE?

Total Quality Management (TQM) is a systematic approach to quality improvement and management that aims to enhance customer satisfaction and organizational efficiency. While TQM principles are often associated with manufacturing and business sectors, their significance in healthcare systems cannot be understated. Here are some key reasons why TQM is important in healthcare:

1. **Quality of Care:** TQM helps healthcare organizations focus on continuously improving the quality of care provided to patients. By implementing TQM principles, healthcare systems can develop standardized processes, measure performance indicators, and enhance the overall delivery of care, resulting in better patient outcomes.
2. **Efficiency and Cost Reduction:** TQM emphasizes the elimination of waste, streamlining of processes, and efficient resource utilization. By applying TQM principles, healthcare

organizations can identify areas of inefficiency, reduce unnecessary costs, and optimize resource allocation, leading to improved financial sustainability.

3. **Continuous Improvement:** TQM promotes a culture of continuous improvement within healthcare systems. This involves constantly evaluating processes, gathering feedback, and implementing changes to enhance efficiency, effectiveness, and patient satisfaction. Continuous improvement fosters innovation and adaptability in the face of changing healthcare dynamics.
4. **Teamwork and Collaboration:** TQM encourages teamwork and collaboration among healthcare professionals, promoting a culture of shared responsibility and accountability. By breaking down silos and fostering effective communication, TQM enables interdisciplinary collaboration, leading to improved coordination, reduced errors, and enhanced patient care.
5. **Patient-Centered Approach:** TQM aligns with a patient-centered approach to healthcare, wherein patients and their families are actively involved in decision-making processes. TQM principles facilitate patient engagement, respect for patient preferences, and the provision of personalized care, resulting in higher patient satisfaction and improved patient-provider relationships.
6. **Regulatory Compliance:** Healthcare systems are subject to numerous regulatory requirements and quality standards. TQM provides a structured framework to ensure compliance with these standards, promoting adherence to guidelines, best practices, and evidence-based medicine.
7. **Staff Engagement and Satisfaction:** TQM principles involve engaging and empowering healthcare professionals at all levels. TQM fosters a sense of ownership, job satisfaction, and professional development among healthcare personnel by involving staff in quality improvement initiatives, providing training opportunities, and recognizing their contributions.

Conclusion

In summary, TQM plays a vital role in healthcare systems by promoting patient safety, enhancing the quality of care, improving efficiency, fostering continuous improvement, encouraging teamwork, and ensuring regulatory compliance. By implementing TQM principles, healthcare organizations can optimize their operations, achieve better patient outcomes, and provide a higher standard of care.

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COGNITIVE, SOCIAL AND EMOTIONAL IMPLICATIONS OF TECHNOLOGY ON HUMANS

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Abstract

Even though technology has greatly benefited modern civilization, there are also signs that, in certain cases, how people utilise technology has compromised their humanity. Human nature is framed by four factors in this article: cognition, social interaction, emotion, and ethics. We contend that although fundamental human nature is unchanging, our engagement with the outside world, particularly via the use of technology, has some influence on the four dimensions. We must use technology as a strong tool to ensure that human intellect, social connection, emotion, and ethics are supported and not significantly interfered with by digital technologies. By minimising the negative effects of technology, education can assist students in using it effectively. This paper demonstrates how humans can coexist peacefully with technology depending on their preferences and degree of technology use. Additionally, it suggests ways to promote a positive relationship with technology among students. The recommendations include implementing decision-making theory, raising self-awareness, promoting academic integrity, and addressing issues with technology addiction through programmes such as impulse control training. The study is purely based on secondary data. Different journals, articles, newspapers, and a certain number of people were interviewed for research purposes.

Keywords: Cognitive implications, IT sector

Introduction

Humanity in the digital age refers to the impact and influence of technology, particularly digital technology, on various aspects of human life, including communication, work, education, entertainment, and social interactions. The digital age has brought about significant changes in how people live, work, and interact with one another.

Few HR talks nowadays combine the ideas of "digital disruption" with "creating a meaningful workplace," despite the fact that both topics are frequently discussed separately.

On the one hand, the world of work is being dramatically altered by digital disruption. Many of the duties and jobs that are currently carried out by humans will eventually be automated and done by machines. In fact, a PwC estimate states that by 2030, robotics and artificial intelligence (AI) might automate between 30 and 38 percent of professions in the UK, Germany, and US markets. But how does it feel to be a human in digital age?

COGNITIVE IMPLICATIONS OF TECHNOLOGY ON HUMANITY

The cognitive implications of digitalization refer to the effects that digital technology and the digital age have on human cognition, thinking processes, and mental abilities. Here are some key cognitive implications of digitalization:

1. **Information overload:** With the vast amount of information available online, individuals are exposed to a constant stream of data, news, and stimuli. This can lead to information overload, where individuals struggle to filter and process the excessive amount of information. It can impact attention span, focus, and the ability to retain and apply knowledge effectively.
2. **Multitasking and divided attention:** Digital devices and the proliferation of multiple screens have encouraged multitasking behaviors. People often engage in simultaneous activities, such as checking emails, browsing social media, and watching videos. However, research suggests that multitasking can negatively affect cognitive performance, leading to reduced productivity, increased errors, and difficulties in concentration.
3. **Changes in memory processes:** The digital age has influenced memory processes. With the availability of search engines and digital storage, individuals rely on external devices and platforms to store and retrieve information. This can lead to a shift from internal memory processes to reliance on external sources, potentially affecting memory consolidation and retrieval abilities.
4. **Shallow processing and reduced critical thinking:** The constant exposure to bite-sized information, online articles, and social media posts may promote shallow processing of information. Quick scanning and skimming instead of deep reading and critical thinking can become the norm. This may impact analytical and problem-solving skills, as well as the ability to evaluate information critically.
5. **Digital distractions:** Digital devices and online platforms can be highly distracting, leading to interruptions and reduced focus. Notifications, alerts, and the constant temptation to check messages and social media can hinder sustained attention and disrupt cognitive processes. This can affect productivity, learning, and overall cognitive performance.
6. **Visual-spatial skills and attentional shifts:** Digital technology often relies heavily on visual interfaces and multimedia content. This may impact the development and utilization of visual-spatial skills, as well as the ability to shift attention effectively between different sources of information.
7. **Enhanced cognitive abilities:** On the positive side, digitalization can also enhance certain cognitive abilities. For example, digital tools and software can assist in complex calculations, data analysis, and information processing, enabling individuals to perform tasks more efficiently and accurately. Online cognitive training programs and brain games have also been developed to enhance specific cognitive functions.

It's important to note that the cognitive implications of digitalization are complex and can vary among individuals. Factors such as digital literacy, usage patterns, and self-regulation play a significant role in determining the impact of digital technology on cognition.

SOCIAL IMPLICATIONS

The social implications of technology on humans are wide-ranging and have both positive and negative effects on society. Here are some key social implications of technology:

1. **Connectivity and social interaction:** Technology has enabled unprecedented connectivity among people. Social media platforms, messaging apps, and online communities have made it easier to connect and communicate with others, regardless of geographical boundaries. This has expanded social networks, facilitated information sharing, and provided platforms for social movements and activism.
2. **Changes in communication patterns:** Technology has influenced the way people communicate, leading to both benefits and challenges. Digital communication tools, such as texting and instant messaging, offer convenience and speed, but they can also lead to miscommunication and a loss of non-verbal cues. The use of emojis, abbreviations, and shorthand has changed the dynamics of language and communication.
3. **Impact on relationships:** Technology has had a profound impact on interpersonal relationships. It has facilitated long-distance relationships, enabled the maintenance of connections across time zones, and allowed for virtual interactions. However, there are concerns about the quality of relationships in the digital age, as online interactions may lack the depth and intimacy of face-to-face interactions.
4. **Privacy and security concerns:** The widespread use of technology has raised significant concerns about privacy and security. Data breaches, surveillance, and the collection of personal information by tech companies have created privacy risks. Social media platforms also raise questions about the control of personal data and the potential for misuse or manipulation.
5. **Digital divide and inequality:** Technology has the potential to exacerbate existing social inequalities. The digital divide refers to the gap between those who have access to technology and those who do not. Socioeconomic factors, geographical location, and infrastructure disparities can limit access to technology and digital literacy, perpetuating social inequality.
6. **Employment and workforce transformation:** Technology has reshaped the job market and the nature of work. Automation and artificial intelligence have led to the displacement of certain jobs while creating new opportunities. The digital age has also given rise to the gig economy, freelance work, and remote employment, changing traditional work structures and impacting job security and income stability.

7. **Impact on mental health:** The use of technology and social media has been linked to various mental health issues. Excessive screen time, cyberbullying, social comparison, and the pressure to curate a perfect online image can contribute to anxiety, depression, and low self-esteem. However, technology can also provide support through mental health apps, online therapy, and access to information and resources.
8. **Cultural and societal changes:** Technology has influenced cultural norms, values, and behaviors. It has altered the way people consume media, engage in entertainment, and access information. Online platforms have provided a space for diverse voices and perspectives, but they have also been associated with the spread of misinformation, echo chambers, and polarization.

It's important to recognize that the social implications of technology are complex and context-dependent. The impact of technology on individuals and society can vary based on factors such as culture, age, socioeconomic status, and individual usage patterns. Striking a balance between embracing the benefits of technology while mitigating its negative consequences is a key challenge in the digital age.

EMOTIONAL IMPLICATIONS

Technology has had significant emotional implications on humans, both positive and negative. Here are some of the key emotional implications of technology:

1. **Connection and Loneliness:** Technology has facilitated global connectivity, allowing people to stay connected with loved ones and build new relationships. Social media platforms, messaging apps, and video calling tools have made it easier to stay in touch. However, technology can also contribute to feelings of loneliness and isolation when real-life interactions are replaced by virtual ones. Spending excessive time on social media can lead to social comparison, FOMO (fear of missing out), and a sense of disconnection from real-world relationships.
2. **Instant Gratification and Impatience:** The advent of technology has made information and entertainment readily accessible at our fingertips. This instant gratification can lead to a decreased tolerance for delayed gratification and increased impatience. People may become accustomed to quick responses, fast-paced interactions, and immediate results, which can affect their ability to handle situations that require patience and perseverance.
3. **Overwhelm and Stress:** The constant influx of information and notifications from various devices can lead to information overload and overwhelm. Being constantly connected and available can create a sense of pressure and anxiety. The pressure to keep up with the demands of technology, such as responding to messages promptly or maintaining a strong online presence, can contribute to stress and burnout.
4. **Fear and Uncertainty:** Advancements in technology, such as artificial intelligence, automation, and robotics, have raised concerns about the future of work and potential job

displacement. This can create fear and anxiety about job security and the ability to adapt to an increasingly technology-driven world. Additionally, the rapid pace of technological change can leave people feeling uncertain about the future and their ability to keep up with evolving technologies.

5. **Addiction and Dependency:** Certain technologies, such as smartphones and social media, can be addictive. The constant availability of engaging content, notifications, and the desire for social validation can lead to excessive use and a loss of control. This addiction to technology can have negative consequences on mental well-being, productivity, and relationships.
6. **Enhanced Communication and Expression:** Technology has provided new ways to express emotions and communicate with others. Emoticons, emojis, GIFs, and video calls allow for richer and more nuanced emotional expression, transcending the limitations of text-based communication.

Fusarium Wilt in Cucurbits: Prevention and Control

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Abstract

Fusarium wilt, caused by the soil-borne fungus *Fusarium oxysporum* f. sp. *cucumerinum*, is a devastating disease that affects cucurbit crops worldwide. This chapter focuses on the prevention and control strategies for managing Fusarium wilt in cucurbits. It discusses the importance of understanding the disease cycle, pathogen identification, and the impact of host resistance. Various preventive measures, cultural practices, and biological control options are explored. Additionally, the chapter highlights the use of chemical fungicides and their limitations in disease management. Overall, this chapter provides a comprehensive overview of effective strategies to prevent and control Fusarium wilt in cucurbits.

Keywords: Fusarium wilt, cucurbits, *Fusarium oxysporum* f. sp. *cucumerinum*, disease management, prevention, control strategies.

Introduction

Fusarium wilt, caused by the soil-borne fungus *Fusarium oxysporum* f. sp. *cucumerinum*, is a destructive disease that affects cucurbit crops worldwide. Cucurbits, which include cucumbers, melons, pumpkins, and squash, are economically important crops grown for both human consumption and ornamental purposes. Fusarium wilt poses a significant threat to cucurbit production, leading to yield losses, reduced fruit quality, and economic losses for growers.

Fusarium wilt is characterized by wilting and yellowing of leaves, stunting of plants, and ultimately plant death. The fungus infects the plant through the roots and colonizes the vascular system, causing vascular tissue blockage and disrupting water and nutrient transport. This leads to wilt symptoms and plant decline.

The management of Fusarium wilt in cucurbits is crucial to ensure sustainable production and protect crop yields. Effective prevention and control strategies are essential to minimize the disease's impact on agricultural systems. This chapter aims to provide a comprehensive overview of these strategies, ranging from cultural practices to biological control and chemical management options.

Understanding the disease cycle and the pathogen's identification is a fundamental step in developing effective prevention and control measures. This chapter will discuss the disease development, symptomatology, and pathogenicity of *Fusarium oxysporum* f. sp. *cucumerinum*, providing a solid foundation for disease management.

Host resistance is another critical aspect of managing Fusarium wilt. Breeding for resistant cultivars plays a significant role in reducing disease incidence and severity. The chapter will explore different techniques used for screening and selecting resistant cultivars, as well as the challenges and limitations associated with host resistance.

Preventive measures and cultural practices play a vital role in managing Fusarium wilt. Strategies such as soil management, crop rotation, intercropping, and seed treatment are essential components of disease management programs. The chapter will delve into these practices, highlighting their importance and implementation methods.

Biological control agents offer an environmentally friendly approach to managing Fusarium wilt. This chapter will explore the potential of using beneficial microorganisms, particularly *Trichoderma* spp., as biocontrol agents against the pathogen. Other microbial antagonists will also be discussed, along with application methods and considerations.

Chemical control, while not always the preferred option, can provide short-term relief from Fusarium wilt. The chapter will explore the use of fungicides for disease management, including their mode of action, efficacy, and limitations. Proper timing and considerations for fungicide application will also be discussed.

Integrated disease management, which combines preventive measures, cultural practices, biological control, and chemical control, offers a holistic approach to managing Fusarium wilt in cucurbits. The chapter will emphasize the importance of integrating these strategies and discuss disease forecasting, monitoring, and sustainable approaches.

Finally, the chapter will provide future perspectives and research needs in the field of Fusarium wilt management. Emerging technologies, biotechnological advancements, and the molecular basis of pathogenesis are areas that warrant further exploration to enhance disease control strategies.

Disease Cycle and Pathogen Identification of Fusarium Wilt in Cucurbits

2.1 Disease Development and Symptomatology

Fusarium wilt of cucurbits is caused by the soil-borne fungus *Fusarium oxysporum* f. sp. *cucumerinum*. The disease cycle begins when the pathogen survives in the soil or plant debris as fungal spores or mycelia. These survival structures can persist for several years, maintaining a source of inoculum for future infections.

When susceptible cucurbit plants are present, the fungus can infect the roots through wounds or natural openings. It colonizes the root cortex and advances into the vascular system, eventually reaching the xylem vessels. As the pathogen grows, it produces toxins that contribute to the development of wilt symptoms.

The disease's initial symptoms include wilting of leaves, starting with the older leaves, which may appear pale green or yellow. Over time, wilting progresses throughout the entire plant, resulting in plant stunting and eventually death. The vascular tissue becomes discolored, ranging from brown to black, as a result of the pathogen's colonization and the host's defense response.

2.2 Identification and Classification of the Pathogen

The causal agent of Fusarium wilt in cucurbits, *Fusarium oxysporum* f. sp. *cucumerinum*, belongs to the fungal genus *Fusarium*. Morphological characteristics alone are often insufficient to identify the specific forma specialis (f. sp.) of *Fusarium oxysporum* causing wilt in cucurbits. Therefore, molecular techniques such as DNA sequencing and PCR-based assays are commonly employed to accurately identify and classify the pathogen.

Isolation and culturing of the pathogen from infected plant tissues or soil samples are performed to obtain pure cultures for identification. Microscopic examination of the fungal structures, including spores, conidiophores, and hyphae, can aid in distinguishing *Fusarium* species. However, molecular techniques provide more precise identification, allowing for differentiation between different formae speciales within the *Fusarium oxysporum* complex.

2.3 Pathogenicity and Virulence Factors

Fusarium oxysporum f. sp. *cucumerinum* possesses various virulence factors that contribute to its pathogenicity. The fungus produces enzymes, such as cellulases and pectinases, which degrade plant cell walls and facilitate penetration into the host tissues. It also produces toxic metabolites, including fusaric acid, which is known to induce wilt symptoms and contribute to disease development.

The pathogen's ability to colonize the xylem vessels and obstruct water and nutrient transport plays a crucial role in the wilt development process. As the fungus grows and multiplies within

the vascular system, it restricts the movement of water and essential nutrients, leading to plant wilting and eventual death.

Understanding the disease cycle and pathogen identification is essential for implementing effective prevention and control strategies for Fusarium wilt in cucurbits. By identifying the specific *forma specialis* causing the disease and comprehending its pathogenicity, researchers and growers can develop targeted approaches to manage the disease and mitigate its impact on cucurbit crops.

3. Preventive Measures and Cultural Practices of Fusarium Wilt in Cucurbits

Preventive measures and cultural practices play a crucial role in managing Fusarium wilt in cucurbits. By implementing these strategies, growers can reduce the incidence and severity of the disease. Here are some effective preventive measures and cultural practices:

3.1 Soil Management and Sanitation:

Crop rotation: Avoid planting cucurbits in the same field or area where Fusarium wilt has occurred in previous seasons. Rotate with non-host crops, such as grains or legumes, to break the disease cycle and reduce the pathogen's population in the soil.

Deep plowing: Deep plowing before planting can bury crop debris and reduce the survival of the pathogen in the soil.

Soil solarization: Use plastic mulch to cover the soil during the hot summer months, trapping solar heat and raising soil temperatures. This practice helps kill or suppress the pathogen in the upper layers of the soil.

Avoid soil compaction: Proper soil management practices, including avoiding excessive compaction, improve soil drainage and aeration, reducing favorable conditions for disease development.

3.2 Crop Rotation and Intercropping:

Rotate with non-host crops: Rotate cucurbits with crops that are not susceptible to Fusarium wilt. This helps break the disease cycle and reduces the pathogen's population in the soil.

Intercropping: Planting non-host crops alongside cucurbits can create a physical barrier and reduce the spread of the pathogen. Companion plants with natural disease-suppressive properties, such as marigold or mustard, can also be intercropped to suppress the pathogen.

3.3 Seed Treatment and Disinfection:

Seed selection: Use certified disease-free seeds or seeds from resistant cultivars. Properly clean and store seeds to prevent contamination.

Seed treatment: Treat seeds with hot water or fungicidal treatments to eliminate or reduce the pathogen's presence on the seed surface. Follow recommended procedures and ensure proper seed drying before sowing.

3.4 Irrigation and Water Management:

Avoid over-irrigation: Fusarium wilt thrives in moist conditions, so it is crucial to avoid excessive irrigation. Maintain appropriate soil moisture levels without creating waterlogged conditions.

Drip irrigation: Use drip irrigation instead of overhead sprinklers to deliver water directly to the root zone. This reduces foliar moisture, minimizing the chance of pathogen splashing and infection.

3.5 Weed Control:

Proper weed management: Control weeds in and around the field, as they can serve as alternative hosts for the pathogen or create conditions conducive to disease development.

3.6 Resistant Varieties:

Use resistant cultivars: Planting resistant cultivars is an effective long-term strategy to manage Fusarium wilt. Select cultivars that have been bred for resistance against *Fusarium oxysporum* f. sp. *cucumerinum*. Consult local agricultural extension services or seed suppliers for information on available resistant varieties.

Biological Control Agents for Fusarium Wilt in Cucurbits

Biological control offers an environmentally friendly approach to managing Fusarium wilt in cucurbits. Various beneficial microorganisms have been investigated as potential biocontrol agents against the pathogen *Fusarium oxysporum* f. sp. *cucumerinum*. Here are some commonly studied biological control agents:

4.1 *Trichoderma* spp.:

Trichoderma harzianum: This fungus is one of the most extensively studied biocontrol agents against Fusarium wilt. It colonizes the root system, suppresses the growth of the pathogen, and induces systemic resistance in the host plant. *Trichoderma harzianum* produces antifungal compounds, such as chitinases and glucanases, which inhibit the growth of *Fusarium oxysporum* f. sp. *cucumerinum*.

Trichoderma virens: Another species of *Trichoderma* that shows promising biocontrol activity against Fusarium wilt. It produces enzymes and secondary metabolites that degrade the cell walls of the pathogen, interfering with its growth and pathogenicity.

Trichoderma asperellum, *Trichoderma koningiopsis*, and other *Trichoderma* species have also demonstrated efficacy against Fusarium wilt in cucurbits.

4.2 Other Microbial Antagonists:

Pseudomonas fluorescens: Some strains of this bacterium have shown antagonistic activity against Fusarium wilt. They produce secondary metabolites, such as phenazines and siderophores, which inhibit the growth of the pathogen and induce systemic resistance in plants.

Bacillus subtilis: This bacterium has biocontrol properties and can suppress Fusarium wilt through the production of antimicrobial compounds, competition for nutrients, and stimulation of plant defense mechanisms.

Streptomyces spp.: Certain strains of Streptomyces bacteria produce antifungal metabolites that inhibit the growth of *Fusarium oxysporum* f. sp. *cucumerinum*.

4.3 Application Methods and Considerations:

Seed treatment: Coating or inoculating cucumber seeds with biocontrol agents before sowing can provide early protection against Fusarium wilt.

Soil drenching: Applying biocontrol agents as a soil drench around the plant roots can establish their presence in the rhizosphere, allowing them to compete with and suppress the pathogen.

Root dip: Treating seedlings' roots with a suspension of biocontrol agents before transplanting can protect the plants from infection.

When using biological control agents, several factors should be considered:

Compatibility: Ensure compatibility between the selected biocontrol agents and other disease management practices, such as chemical fungicides or fertilizers.

Application timing: Apply biocontrol agents at the appropriate growth stage of the crop and when the pathogen is most susceptible.

Formulation: Use properly formulated biocontrol products to ensure the viability and efficacy of the microorganisms.

Crop-specific considerations: Different biocontrol agents may have varying degrees of effectiveness against Fusarium wilt in different cucurbit species or cultivars.

5. Chemical Control of Fusarium Wilt in Cucurbits

Chemical control can provide short-term relief from Fusarium wilt in cucurbits, particularly when other management strategies are not sufficient or practical. Fungicides are commonly used to manage the disease, but it is important to note that chemical control should be integrated with other cultural and preventive measures for effective management. Here are some key considerations for chemical control of Fusarium wilt:

5.1 Fungicide Selection:

Fungicide efficacy: Different fungicides vary in their effectiveness against Fusarium wilt. Choose fungicides that have demonstrated efficacy specifically against *Fusarium oxysporum* f. sp. *cucumerinum* or Fusarium wilt in general.

Mode of action: Fungicides can have different modes of action, such as inhibition of spore germination, fungal growth, or interference with cell membrane integrity. Consider rotating or combining fungicides with different modes of action to reduce the risk of fungicide resistance development.

Compatibility: Ensure that the selected fungicide is compatible with the cucurbit crop, growth stage, and other pesticides or management practices being used. Follow label instructions and consult with local agricultural extension services or experts for specific recommendations.

5.2 Application Timing and Method:

Pre-plant soil treatment: Applying fungicides to the soil before planting can help control the pathogen and reduce its initial infection pressure. Incorporate the fungicide into the soil as recommended and allow sufficient time for it to disperse before planting.

Seed treatment: Coating or treating cucumber seeds with fungicides can provide protection against Fusarium wilt at the early stages of plant development. Follow label instructions and recommended rates for seed treatment.

Foliar application: Fungicides can be applied as foliar sprays to protect the plants from foliar infection or to suppress the pathogen's growth. Timing and frequency of foliar applications will depend on the severity of the disease and the fungicide's residual activity.

5.3 Considerations and Limitations:

Resistance management: To minimize the risk of developing fungicide resistance, it is important to rotate fungicides with different modes of action and use them in combination with other management strategies.

Environmental impact: Follow label instructions and local regulations to minimize environmental impact and ensure proper handling, application, and disposal of fungicides.

Pre-harvest interval (PHI): Take note of the fungicide's PHI, which is the minimum waiting period required between the last fungicide application and harvest. Adhere to the specified PHI to comply with food safety regulations and ensure consumer safety.

6. Integrated Disease Management of Fusarium Wilt in Cucurbits

Integrated Disease Management (IDM) is a comprehensive approach that combines multiple strategies to effectively manage Fusarium wilt in cucurbits. By integrating cultural practices, biological control agents, chemical control, and other management techniques, IDM aims to reduce disease incidence, minimize pathogen population, and enhance overall crop health. Here are key components of an integrated approach:

6.1 Crop Rotation and Field Management:

Crop rotation: Rotate cucurbits with non-host crops to break the disease cycle and reduce the population of *Fusarium oxysporum* f. sp. *cucumerinum* in the soil. Incorporate crops with different root exudates and disease resistance traits to further enhance disease management.

Sanitation: Remove and destroy infected plant debris to reduce the survival and spread of the pathogen. Properly clean equipment and tools to prevent contamination between fields.

Soil management: Maintain optimal soil health and fertility through practices such as organic matter incorporation, balanced nutrient management, and appropriate irrigation practices. Healthy plants are more resilient to diseases.

6.2 Resistant Varieties:

Plant resistant cultivars: Select and plant cucumber varieties that have been bred for resistance against *Fusarium* wilt. Consult local agricultural extension services or seed suppliers for information on available resistant varieties that are suitable for your region.

Multi-gene resistance: Look for cultivars with multiple genes conferring resistance to enhance durability and effectiveness against different strains of *Fusarium oxysporum* f. sp. *Cucumerinum*.

6.3 Biological Control Agents:

Use biocontrol agents: Incorporate beneficial microorganisms such as *Trichoderma* spp., *Pseudomonas fluorescens*, or *Bacillus subtilis* to suppress the growth of *Fusarium oxysporum* f. sp. *cucumerinum*. Apply them as seed treatments, soil drenches, or root dips following recommended guidelines.

Enhance soil biodiversity: Foster a diverse microbial community in the soil through practices such as organic amendments, cover cropping, and avoiding excessive use of fungicides. A healthy and diverse soil microbiome can contribute to disease suppression.

6.4 Chemical Control:

Fungicide application: If necessary, use fungicides as part of an integrated approach. Select fungicides with efficacy against *Fusarium* wilt and rotate them with different modes of action to reduce the risk of resistance development. Follow label instructions and adhere to recommended application rates and timings.

Precision application: Use targeted application methods such as soil drenches or foliar sprays to minimize fungicide usage and environmental impact.

6.5 Monitoring and Early Detection:

Regular scouting: Monitor fields regularly for symptoms of *Fusarium* wilt. Early detection allows for timely interventions and prevents the disease from spreading.

Diagnostic testing: If symptoms are observed, confirm the presence of *Fusarium* wilt through laboratory testing to ensure accurate disease identification.

Decision-making based on thresholds: Develop action thresholds based on disease severity and crop stage to determine when intervention is necessary.

6.6 Education and Record-Keeping:

Stay informed: Keep up-to-date with research findings, disease management practices, and new cultivars. Attend workshops, conferences, and training sessions to enhance knowledge on *Fusarium* wilt management.

Maintain records: Keep detailed records of field history, including crop rotation schedules, disease incidence, and management practices. These records can guide future decision-making and help evaluate the effectiveness of management strategies.

7. Conclusion

Fusarium wilt is a significant disease that affects cucurbits, including crops such as cucumbers, melons, and squash. It is caused by the soil-borne pathogen *Fusarium oxysporum* f. sp. *cucumerinum*, which invades the vascular system of the plants, leading to wilting, stunting, and ultimately, crop loss. Managing Fusarium wilt requires a comprehensive approach that combines various preventive, cultural, biological, and chemical control measures.

Preventive measures and cultural practices, such as crop rotation, soil management, and sanitation, are crucial for reducing the pathogen's population and breaking the disease cycle. Implementing these practices can create an unfavorable environment for the pathogen's survival and minimize disease incidence.

The use of resistant cultivars is an effective long-term strategy to manage Fusarium wilt. Planting resistant varieties helps mitigate the disease's impact by limiting pathogen colonization and reducing disease severity. Additionally, integrating biological control agents, such as *Trichoderma* spp. and beneficial bacteria like *Pseudomonas fluorescens*, can suppress the growth of the pathogen and induce plant resistance.

Chemical control, including the use of fungicides, can provide short-term relief from Fusarium wilt. However, it should be integrated with other management strategies and used judiciously to minimize the risk of fungicide resistance development.

Integrated Disease Management (IDM) is a comprehensive approach that combines multiple strategies to effectively manage Fusarium wilt. By integrating cultural practices, biological control agents, chemical control, and other management techniques, IDM aims to reduce disease incidence, minimize pathogen population, and enhance overall crop health.

Regular monitoring, early detection, and record-keeping are essential components of managing Fusarium wilt. These practices allow for timely interventions, accurate disease identification, and the evaluation of management strategies' effectiveness.

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Role of insect pathogenic bacteria in biological control and their mode of action

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Abstract

Insect pathogenic bacteria have gained significant attention as potent biocontrol agents due to their ability to target specific insect pests while minimizing environmental impact. This chapter provides an overview of the use of insect pathogenic bacteria in biological control and examines their mode of action. It explores various bacterial species, their pathogenicity mechanisms, and their interaction with the insect host. Additionally, this chapter discusses the potential applications and challenges associated with utilizing insect pathogenic bacteria for pest management strategies.

1. **Introduction**
2. **The term "biological control" was first used by Harry Scott Smith, in California. It was brought into more widespread use by the entomologist Paul H. DeBach. The term "biological control" and its abbreviated synonym "biocontrol" have been used in different fields of biology, most notably entomology and plant pathology. In entomology, it has been used to describe the use of live predatory insects, entomopathogenic nematodes, or microbial pathogens to suppress populations of different pest insects. In plant pathology, the term applies to the use of microbial antagonists to suppress diseases as well as the use of host-specific pathogens to control weed populations. In both fields, the organism that suppresses the pest or pathogen is referred to as the biological control agent (BCA). More broadly, the term biological control also has been applied to the use of the natural products extracted or fermented from various sources. These formulations may be very simple mixtures of natural ingredients with specific activities or complex mixtures with multiple effects on the host as well as the target pest or pathogen.**
3. **Entomopathogenic bacteria are unicellular prokaryotic organisms having size ranging from less than 1 μm to several μm in length. Bacteria with rigid cell walls are cocci, rod-shaped and spiral while bacteria without cell walls are pleomorphic. More than 100 bacteria have been identified as arthropod pathogens among which, *Bacillus thuringiensis*, *B. sphaericus*, *B. cereus* and *B. popilliae* have received most attention as microbial control agents. The majority of bacterial pathogens of insect-pests occur in bacterial families:**

- Bacillaceae
- Pseudomonadaceae
- Enterobacteriaceae
- Streptococcaceae
- Micrococcaceae.

These families of bacteria usually represent epiphytes or weak pathogens. However, some of them are highly virulent to their respective hosts. Among the entomopathogenic bacteria, much attention has been given to the family Bacillaceae.

4. Background

The utilisation of entomopathogenic bacteria for insect control started in the 1960s with the discovery and development of *Bacillus thuringiensis* (*Bt*) varieties that produced insecticidal proteins active against agricultural insect pests. The *B. thuringiensis* serovar *israelensis* (*Bti*) discovered by Goldberg and Margalit (1978) was the first serotype identified as active against Diptera larvae. This entomopathogenic bacterium enjoyed a rapid development from the characterisation of its properties to field utilisation, mainly because of the serious resistance problems encountered by synthetic insecticides in vector-control programmes during that period. The second mosquitocidal bacterium *Lysinibacillus sphaericus* (*Ls*), previously designated as *B. sphaericus*, was identified by Neide in 1904.

5. 1. Bacillaceae

a) *Bacillus thuringiensis*

Bacillus thuringiensis is a soil-dwelling bacterium. It is the most widely applied species of bacteria used for biological control with at least four sub-species used against Lepidopteran (moth, butterfly), Coleopteran (beetle) and Dipteran (true fly) insect pests.

The pathogenic action of this bacterium normally occurs after ingestion of spores and crystalline inclusions containing insecticidal δ -endotoxins that specifically interact with receptors in the insect midgut epithelial cells.

It is largely demonstrated that these toxins, mostly represented by Cry proteins, after being solubilized and activated in the insect midgut, act through a pore-forming mechanism determining the disruption of natural cell membrane permeability, with consequent cell lysis followed by gut paralysis and death.

b) *Paenibacillus popilliae* (Eubacteriales: Bacillaceae)

Paenibacillus popilliae is commonly used against Japanese beetle larvae and known to cause the milky spore disease. *Paenibacillus popilliae* (formerly *Bacillus popilliae*) is a soil-dwelling, Gram-positive, rod-shaped bacterium of 1.3 to 5.2 x 0.5 to 0.8 micrometers. It is a fastidious organism that grows only on rich media containing yeast extract, casein hydrolysate or an equivalent amino acid source, and sugars.

The host-parasite interaction

B. popilliae causes disease of Japanese beetle larvae when they ingest spores in the soil. The spores germinate in the high pH in the gut within 2 days and the vegetative cells proliferate, attaining maximum numbers within 3 to 5 days. By this time some of the cells have penetrated the gut wall and begun to grow in the haemolymph, where large numbers of cells develop by day 5 to 10. A few spores also are formed at this stage but in the variety *popilliae* the main phase of sporulation occurs later and is completed by 14 to 21 days when the larva develops the typical milky appearance. In laboratory conditions the larva remains alive until this stage and usually contains about 5×10^9 spores. In field conditions, however, there are reports that larvae sometimes die earlier, before the main phase of sporulation is completed. This is of concern because sporulation stops when the host dies and the larva ultimately releases fewer spores to maintain the level of infestation of a site.

6. **2. Clostridiaceae**

1. *Clostridium bifermentans*

Clostridium bifermentans is an anaerobic, spore-forming, gram-positive bacillus. A strain of *C. bifermentans serovar malaysia* (C.b.m.), isolated in Malaysia, shows high toxicity against mosquitoes and black flies. During sporulation, this bacterium produces three major proteins involved in the insecticidal action. These include the mosquitocidal protein Cbm71 showing homology to *B. thuringiensis* delta endotoxins.

7. **3. Gammaproteobacteria**

1. **3.1. *Photorhabdus* spp. and *Xenorhabdus* spp.**

2. **Endosymbionts of insecticidal nematodes.**

Photorhabdus is a genus of bioluminescent, gram-negative bacilli which lives symbiotically within entomopathogenic nematodes, hence the name *photo* (which means light-producing) and *rhabdus* (rod-shape). Use of *Photorhabdus* species alone as biopesticide, independent of its nematode symbiont, against the cabbage white butterfly,

Pieris brassicae, mango mealybug, *Drosichamangiferae* and the pupae of the diamond back moth, *Plutellaxylostella* has been demonstrated successful.

· *Photorhabdus* species facilitate the reproduction of entomopathogenic nematodes by infecting and killing susceptible insect larvae. entomopathogenic nematodes are normally found in soil. Nematodes infect larval hosts by piercing the larval cuticle. When the nematode enters an insect larvae, *Photorhabdus* species are released by the nematodes and will produce a range of toxins, killing the host within 48 hours. *Photorhabdus* species feed on the cadaver of the insect and the process converts the cadaver into a nutrient source for the nematode. Mature nematodes leave the depleted body of the insect and search for new hosts to infect.

Xenorhabdus is a genus of motile, gram-negative, rod shaped, non spore forming bacteria from the family of the Enterobacteriaceae. It has the particularity that all the species of the genus live in symbiosis with soil entomopathogenic nematodes from the genus *Steinernema*.

The mutualistic association between *Xenorhabdus* and *Steinernema* represent an insecticidal complex, active against a large range of insect pests. Indeed, the complex is used in biological pest control, and is very efficient against insects such as *Spodoptera exigua* (Lepidoptera), *Cydia pomonella* (Lepidoptera), *Leptinotarsa decemlineata* (Coleoptera), Tipulidae family (Diptera). *Xenorhabdus nematofila* is the most used species in biological control, in association with *Steinernema carpocapse* and *Steinernema feltiae*.

1. In the non-infestant-stage nematode living in the soil, *Xenorhabdus* spp. are carried in a specialized region of the intestine, termed the receptacle.
2. At the third-stage of development, the infective juvenile (IJs) invade the hemocoel of susceptible insect hosts.
3. The bacteria are released in the insect hemocoel, where they overcome the insect's defense systems and produce numerous virulence factors such as hemolysin and cytotoxin. They participate in suppressing insect immunity and killing the host.
4. The bacteria proliferate to high levels in the insect cadaver and produce diverse antimicrobial compounds that suppress the growth of antagonistic microorganisms. *Xenorhabdus* spp. also secrete an array of exoenzymes that stimulate macromolecular degradation, the products of which, together with the bacteria themselves, are thought to provide a nutrient base for nematode growth and reproduction.
5. When nematode numbers become high and nutrients become limiting in the insect cadaver, nematode progeny re-associate with bacteria and differentiate into colonized, non-feeding IJs that emerge into the soil to forage for new hosts.

The *Steinernema-Xenorhabdus* association is currently sold as biocontrol agent by private companies, like Biobest, SUMI AGRO, and Biosafe.

3.2 *Serratia* spp.

Serratia are considered to be ubiquitous in the environment and the organism is found in water, soil, plants, insects, animals, mammals including humans and food, particularly those rich in starch. Most *Serratia* isolates are motile with petrichous flagella. Optimum growth of *Serratia* has been observed at pH 9 and at temperatures ranging from 20 to 37 °C.

Serratia produce a cell-associated red color pigment called prodigiosin or 2-methyl-3-amyl-6-methoxy-prodigiosene.

Serratia marcescens is known to associate with and colonize the digestive tract of a broad range of insects, but can be found as a potential or facultative pathogen with a lethal dose that kills 50% of a test insect population (LD₅₀) of just a few cells per insect once in the hemocoel. Some insects, however, are susceptible to *S. marcescens* strains through the oral route, such as tsetse flies, *Glossina* spp., blow fly, *Lucilia sericata* and May beetles, *Melolontha melolontha*.

A novel species, *S. entomophila*, causing amber disease in the larvae of the New Zealand grass grub, *C. zealandica*, was associated with population decline in field. Ingestion of the bacteria while feeding on the grass roots and organic matter in soil has a major effect on the appearance of the infected larva. Within one to three days of ingesting amber disease-causing bacteria, *C. zealandica* larvae cease feeding and the levels of the major digestive enzymes, trypsin and chymotrypsin, decrease dramatically in the midgut. The disease leaves larvae with a translucent amber coloration which is the characteristic of the disease. Bacteria finally invade the hemocoel, causing death through septicemia. After ingestion, *S. entomophila* bacteria colonize the insect gut and adhere to the foregut cuticle. *Serratia* toxins act to cause degradation of the cytoskeletal network and prevent secretion of midgut digestive proteinases as both the actin cytoskeleton and microtubules are involved in exocytosis.

3.3. *Yersinia entomophaga*

Isolated from the New Zealand grass grub, *C. zealandica*, *Y. entomophaga* is a non-spore-forming entomopathogenic bacterium characterized by the production of an insecticidal toxin complex showing similarity to those produced by *Photorhabdus* spp. These complexes include three Yen protein families, A, B and C, and two chitinases (Chi1 and Chi2). The broad insecticidal range of these toxins and their post-ingestion histopathological action in the insect midgut epithelium have been reported.

3.4. *Pseudomonas entomophila*

Pseudomonas entomophila is a Gram-negative bacteria found in soil, aquatic, and rhizosphere environments. It was first isolated from the species *Drosophila melanogaster* (Diptera: Drosophilidae) as once ingested by this insect, it was found to cause lethality in the fly larvae and adults.

Pseudomonas entomophila's presence within the gut initiates a local and systemic immune response in the insect. Its virulence factor causes lethality within 1-2 days of high dose ingestion among *Drosophila melanogaster* larvae and adults.

P. entomophila can also effectively kill members of other insect orders (e.g. *Bombyxmori*, *Anopheles gambiae*).

4. Betaproteobacteria

4.1 *Burkholderia* Spp.

The bean bug *Riptortus pedestris* (Heteroptera: Alydidae), formerly known as *Riptortus clavatus*, develops a number of sac-like tissues, called crops or crypts, in the posterior region of the midgut, and these crypts are colonized by dense populations of a *Burkholderia* symbiont (Betaproteobacteria). Different insect species harbor symbiotic bacteria of the genus *Burkholderia*, mostly in association with specific gut regions. In addition to these mutualistic relationships with insects, *Burkholderia* sp. has recently been reported to affect oviposition and fecundity of the bean bug *Riptortus pedestris* (Fabricius). The insecticidal properties of a new strain isolated in soil from Japan and identified as *B. rinojensis* were discovered. Whole cell broth cultures of this bacterial strain, named A396, show oral toxicity and contact effects against the beet armyworm *Spodoptera exigua* (Lepidoptera: Noctuidae) and the two-spotted spider mite *Tetranychusurticae* Koch. Insecticidal and miticidal properties are maintained after heat-treatment, hence commercial formulations against a variety of chewing and sucking insects and mites are based on heat-killed cells and spent fermentation media. Researchers have demonstrated that an intestinal symbiotic bacterium, which has beneficial effects on the growth and reproduction of the bean bug (*Riptortus pedestris*), accumulates polyhydroxyalkanoate (PHA), a type of polyester, as intracellular granules under symbiotic conditions, and that this intracellular polyester accumulation is required for maintenance of the normal symbiotic relationship.

(Left) The bean bug *Riptortus pedestris*. (Center) Dissected intestine of *R. pedestris*, whose posterior is specialized as a symbiotic organ (yellow arrow) for harboring a specific bacterial symbiont. (Right) The symbiont cells where accumulated PHA granules are seen (red arrowheads).

4.2. *Chromobacterium* spp.

Chromobacterium is a genus of Gram-negative rod-shaped bacteria. A strain of *Chromobacterium* isolated from a soil sample in Maryland (USA) and named PRAA4-1T, was discovered to show high insecticidal activity against insect species in different orders, including the Diamondback moth *Plutella xylostella* L. (Lepidoptera: Plutellidae), the Sweet potato whitefly *Bemisia tabaci* (Rhynchota: Aleyrodidae), the Southern green stink bug *Nezaraviridula* L. (Rhynchota: Pentatomidae), the Southern corn rootworm *Diabroticaundecimpunctata* (Coleoptera:Chrysomelidae), the Western corn rootworm *Diabroticavirgifera* (Coleoptera: Chrysomelidae), the Colorado potato beetle *Leptinotarsa decemlineata*(Coleoptera: Chrysomelidae), and the Small hive beetle *Aethina tumida* (Coleoptera: Nitidulidae).

Bacteria of the genus *Chromobacterium* are best known for the production of the purple pigments violacein and deoxyviolacein.

Grandevo is a biological insecticide containing fermentation solids of *Chromo bacterium subtsugae* strain PRAA4-1T for use on edible crops against the pests. Grandevo functions primarily as a stomach poison for use in the control or suppression of many foliar-feeding pests, including caterpillars, and certain coleopteran.

5. Actinobacteria

5.1. *Streptomyces* spp.

Different *Streptomyces* spp. are associated with herbivorous insects that take advantage of their cellulolytic properties. Among the first discovered insecticidal substances produced by *Streptomyces* species are flavensomycin, antimycinA, piericidins, macrotetralides and prasinons. Later on, the insecticidal and anthelmintic activities of avermectins produced by *Streptomyces avermitilis* MS &D was, were discovered. These macrocyclic lactone derivatives target the gamma-aminobutyric acid (GABA) receptor in the insect peripheral nervous system. The enhancement of GABA binding generates a cascade of events resulting in the inhibition of neurotransmission and paralysis of the neuromuscular systems. Insecticides based on avermectins include a mixture of avermectin B1a and avermectin B1b, known as abamectin, that act by contact and ingestion and have a limited plant translaminar activity. Analogous substances produced by *Streptomyces* species include Emamectin, especially toxic to Lepidoptera.

5.2. *Saccharopolyspora spinosa*

Saccharopolysporaspinosa was discovered during a screening program where the insecticidal activity of the isolate A83543 emerged.

Spinosyns are a family of broad-spectrum insecticides including spinosad and spinetoram, all with a macrocyclic lactone structure, isolated from bacterium *Saccharopolyspora spinosa*.

Spinosyns exhibited broad-spectrum activity against insect species in different orders, especially Lepidoptera and Diptera. The natural *S. spinosa* fermentation-derived mixtures were named “spinosad” and contain spinosyn A and spinosyn D, as major and minor component. It has been demonstrated their interaction with g-aminobutyric acid receptors and nicotinic acetylcholine receptors, eventually lead to the disruption of neuronal activity and consequent insect paralysis and death. Despite their broad spectrum of activity against insects, spinosyns are associated with a low risk toward non-target species, including mammals and various aquatic organisms, in comparison with other insecticides.

Important bacteria groups and the modes of their infection process are described below:

There are spore-forming bacterial entomopathogens such as *Bacillus* spp., *Paenibacillus* spp., and *Clostridium* spp, and non-spore-forming ones that belong to the genera *Pseudomonas*, *Serratia*, *Yersinia*, *Photorhabdus*, and *Xenorhabdus*.

Infection occurs when bacteria are ingested by susceptible insect hosts. Several species of the soilborne bacteria, *Bacillus* and *Paenibacillus* are pathogenic to coleopteran, dipteran, and lepidopteran insects. *Bt* subsp. *aizawai* and *Bt* subsp. *kurstaki* are effective against caterpillars, *Bt* subsp. *israelensis* and *Bt* subsp. *sphaericus* target mosquito larvae, and *Bt* subsp. *tenebrionis* effective against some coleopterans.

The main route of insect infection by entomopathogenic bacteria is ingestion. Some bacteria like *Photorhabdus* and *Xenorhabdus* can access the hemocoel inside entomophagous hosts.

Bacillus thuringiensis is a gram-positive bacterium living naturally in the soil. During spore formation, it produces parasporal inclusions containing Cry and Cyt toxins encoded by plasmid genes, which allow bacteria to break the gut anatomical barrier.

Cry toxins are highly specific for particular insect species, while Cyt toxins are present in a lower number of strains and are less specific.

The death of many insect species can be caused by the action of toxins alone (toxemia), while for others the presence of bacterial cells is required.

Ingested parasporal crystal inclusions are solubilized in the insect gut and activated by gut digestive proteases. Afterward, they cross the peritrophic barrier and bind to different classes of midgut receptors, which results in the formation of pores. This interferes with the natural functioning of the intestine and can be already lethal in the case of species highly sensitive to the particular toxin. The next step of *B. thuringiensis* invasion is the germination of spores and vegetative growth. Bacterial cells reach the hemocoel via a perforated gut and proliferate in the body of the infected insect, causing septicemia.

When *Btis* ingested, alkaline conditions in the insect gut (pH 8-11) activate the toxic protein (delta-endotoxin) that attaches to the receptors sites in the midgut and creates pore in midgut cells. This leads to the loss of osmoregulation, midgut paralysis, and cell lysis. Contents of the gut leak into insect's body cavity (hemocoel) and the blood (hemolymph) leaks into the gut disrupting the pH balance. Bacteria that enter body cavity cause septicemia and eventual death of the host insect. Insects show different kinds of responses to *Bt*toxins depending on the crystal proteins (delta-endotoxin), receptor sites production of other toxins (exotoxins), and requirement of spore. The type responses below are based on the susceptibility of caterpillars to *Bt*toxins.

Type I response – Midgut paralysis occurs within a few minutes after delta-endotoxin is ingested. Symptoms include cessation of feeding, increase in hemolymph pH, vomiting, diarrhea and sluggishness. General paralysis and septicemia occur in 24-48 hours resulting in the death of the insect. Examples of insects that show Type I response include silkworm, tomato hornworm, and tobacco hornworm.

Type II response – Midgut paralysis occurs within a few minutes after the ingestion of delta-endotoxin, but there will be no general paralysis. Septicemia occurs within 24-72 hours. Examples include inchworms, alfalfa caterpillar, and cabbage butterfly.

Type III response – Midgut paralysis occurs after delta-endotoxin is ingested followed by cessation of feeding. Insect may move actively as there will be no general paralysis. Mortality occurs in 48-96 hours. Higher mortality occurs if spores are ingested. Insect examples include Mediterranean flour moth, corn earworm, gypsy moth, spruce budworm.

Type IV response – Insects are naturally resistant to infection and older instars are less susceptible than the younger ones. Midgut paralysis occurs after delta-endotoxin is ingested followed by cessation of feeding. Insect may move actively as there will be no general paralysis. Mortality occurs in 72-96 or more hours. Higher mortality occurs if spores are ingested. Cutworms and armyworms are examples for this category.

Unlike caterpillars, the response in mosquitoes is different where upon ingestion of *Bt* subsp. *israelensis* delta-endotoxin, the mosquito larva is killed within 20-30 min.

While *Bt* with its toxic proteins is very effective as a biopesticide against several pests, excessive use can lead to resistance development. Corn earworm, diamondback moth, and tobacco budworm are some of the insects that developed resistance to *Bt*toxins. Genetic engineering allowed genes that express *Bt*toxins to be inserted into plants such as corn, cotton, eggplant, potato, and soybean and reduced the need to spray pesticides. However, appropriate management strategies are necessary to reduce insect resistant to *Bt* toxins in transgenic plants.

· Bacteria in the Rickettsiaceae and Coxiellaceae families are highly fastidious, obligate, intracellular parasites and are among the most common parasitic microbes, impacting on the

insect host through cytoplasmic incompatibility or male-killing phenotypes during infection. The most common Rickettsiaceae genus infecting insects is *Wolbachia*. The rickettsiae are a diverse collection of obligately intracellular Gram-negative bacteria found in ticks, lice, fleas, mites, chiggers, and mammals. They include the genera *Rickettsiae*, *Ehrlichia*, *Orientia*, and *Coxiella*. These zoonotic pathogens cause infections that disseminate in the blood to many organs.

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Mass Production of Green lacewing *chrysoperla carnea* (coccinelid:chrysopidae)

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Abstract:

Green lacewings (Chrysopidae) are effective predators widely used in biological control programs for the management of various insect pests. Their voracious appetite for aphids, mites, and other soft-bodied insects makes them valuable assets in integrated pest management. This chapter focuses on the methods and techniques employed for the mass production of green lacewings. It covers the selection and maintenance of host insects, rearing conditions, artificial diets, and quality control measures. Furthermore, it discusses challenges and future prospects associated with the mass production of green lacewings.

1. Introduction

Chrysopid predators are important for the management of bollworms and aphids in cotton and tobacco and several sucking pests in fruit crops. They are capable of bringing down the population of the pest drastically. *Chrysoperla* (*Chrysoperla carnea*) is a potential chrysopid, which is also amenable to mass multiplication. *Chrysoperla* are generally green in colour, varying in length from 1.0-1.3 cm. The pre-oviposition period lasts 3 to 7 days. Adults start laying eggs from 5th day onwards and peak egg-laying period is between 9 and 23 days after emergence. The male longevity is 30-35 days. Adult female lay eggs of 600-800 eggs/female on an average. The eggs are stalked and green in colour. The eggs are laid singly or in clusters. Egg stage lasts 3-4 days. The larva has 3 instars and after 8-10 days it will form cocoons. Adult emerges in 5-7 days from cocoons.

The green lacewing is being mass released in the field for the control of aphids, white flies, mealy bugs and eggs and young larvae of lepidopteron pests. The *Chrysoperla* predators may be used on cotton, groundnut, pulses, vegetables, ornamentals and several other crops.

They also feed on the eggs and freshly hatched larvae of *Helicoverpa armigera* and such other caterpillar pests.

It is being mass produced primarily on the eggs of rice grain moth, *Corcyra cephalonica* in India. For mass production of *chrysoperla*, an efficient rearing technique is required.

2. Mass Production

Chrysoperla predators are mass multiplied in the laboratory at $27\pm 10^{\circ}\text{C}$ and 70% RH on the eggs of *Corcyra cephalonica*, a laboratory host. Three days old 120 chrysopidae eggs are mixed with 0.75 ml *Corcyra* eggs (the embryo of *Corcyra* eggs are inactivated by keeping them at 2 feet distance from 30 watt ultraviolet tube light for 45 minutes) in a plastic container. On hatching, the larvae feed on the contents of eggs. The second and subsequent instars are reared individually in cells of louvers on the eggs of *C. cephalonica*. It is assumed that for rearing 100 larvae (1cc) *C. cephalonica* eggs are required. Host eggs are provided twice during the course of larval rearing. First feeding of 1.75 ml for 100 larvae and second feeding of 2 ml for 100 larvae with a gap of 3 to 4 days is provided. Cocoons formed in the cells are collected after 24 hours. The cocoons are placed in oviposition cage for adult emergence (Photograph-1). In each oviposition box roughly 20 pairs can be accommodated and inside portion of the container is covered with black paper on which adults lay eggs. The adults in the oviposition boxes are provided with castor pollen, protinex mixture (equal volume of protinex, fructose, honey and powdered yeast dissolved in small quantity of water), 50% honey and drinking water in cotton swab. Adults lay eggs

on the under surface of the top lid which is removed by sliding a clean lid. After 24 hours of hardening the eggs are gently brushed with a brush to dislodge on to a paper eggs are collected and either reused for mass multiplication or sent to farmers for field release. Only first instar larvae are

released on to the recommended crop plants.

3. Major equipment required:-

Facilities like rearing room (6 x 6 m), slotted angle iron racks, work tables, plastic louvers 60 x 22 cms with 2.5 cm cubical cells, acrylic sheets to cover the louvers, glass vials, adult oviposition cages (45 x 30 x 30 cms), plastic louvers, plastic containers, scissors and brushes, cotton wool, tissue paper, sponge, fructose, protinex, honey, yeast, castor pollen etc. are required for the mass rearing of chrysopids.

4. Dosage

At least 1000 eggs or larvae may be used per acre.

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Method for mass production of Ladybird beetle

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Cryptolaemus montrouzieri (coccinellid)

Abstract:

The ladybird beetle *Cryptolaemus montrouzieri*, commonly known as the mealybug destroyer, is a valuable predator used in biological control programs for managing mealybug populations. Its effectiveness in controlling mealybugs, scale insects, and other soft-bodied pests has made it a popular choice among integrated pest management practitioners. This chapter focuses on the methods and techniques employed for the mass production of *Cryptolaemus montrouzieri*. It covers the selection and maintenance of host insects, rearing conditions, artificial diets, and quality control measures. Additionally, it discusses the challenges and future prospects associated with the mass production of this beneficial ladybird beetle.

1. Importance

Mealybugs are serious pests on fruits, vegetables, ornamentals and plantation crops. Besides causing direct loss to the plants they also reduce market value of infested fruits. The extent of damage may go upto 70 percent in severe infestation. Lady bird beetle, *Cryptolaemus montrouzieri* introduced from Australia is a potential bio control agent and is being utilized on many crops in Southern India. Mealybugs or scale insects constitute the natural food of certain ladybird beetles. The adult beetles as well as their larvae (grubs) seek the pests and feed voraciously on all stages. They often wipe out the entire pest colonies. The lady bird beetles are being used for suppression of mealy bugs in citrus, coffee, grapes, guava, ornamental and a variety of other crops.

2. Equipment needed

Equipments like wooden boxes/cages, iron rack, buckets etc. are needed for mass multiplication of ladybird beetles.

3. Production Technology- The production involves the following steps:

After 15 days of infestation of pumpkins with mealy bugs (*Planococcus citri*), they are exposed to a set of 100 beetles for 24 hrs. After exposing the pumpkin is kept back in a cage. The beetles during the period of exposure feed on mealybugs as well as deposit their egg singly or in groups of 4-12. The young grubs feed on eggs and small mealybugs but as they grow they become voracious and feed on all stages of mealybugs. For facilitating the pupation of grubs, dried guava leaves or pieces of papers are kept at the base of each of the eggs. The first beetle from the cages start emerging on 30th day of exposure to beetle adults. The beetles are collected daily and kept in separate cages for about 10-15 days to facilitate completion of mating and pre-oviposition. The beetles are also fed on diet containing agar powder (1gm), sugar (20gm), honey (40cc) and water (100cc).

The adult beetle diet is prepared by boiling sugar in 70cc of water, adding 1gm agar, diluting 40cc honey in 30cc of water and adding to the sugar and agar mixture when it comes to boiling point. The hot liquid diet is kept on small white plastic cards in the form of droplets which get solidified on cooling. Such cards containing diet can be fed not only to *C. montroozieri* but also to many other species of coccinellids. From each cage about 175 beetles are obtained. The emergence of the beetles is completed within 10 days.

The Beetles can also be reared on *corcyra cephalanica* eggs but empty ovisacs of *Planococcus citri* are to be kept for inducing egg laying by the beetles.

4. Field release and application

Before releasing in the field in the endemic areas, moderate to severely infested plants are marked. The plant trunks are ringed one foot away with a band of 5% diazinan granules 24 hrs before the release of the beetles; this stops the patrolling of ants on the trunk atleast 3 days. On citrus 10 beetles per infested plants are released but on other crops the releases are calculated based on infestation and crop canopy.

Release of 10-15 adults / tree depending up on canopy and infestation once in a season
600 to 1000 beetles may be released per acre

5. Precautions

The important precautions are given below:

All due precautions should be taken to avoid scarcity of food for the grubs to avoid cannibalism by grubs.

All the pumpkins showing sign of rotting should be properly incinerated.

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The Relationship between Emotional Intelligence and Work-Life Balance in the IT Sector: A Comprehensive Study

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Abstract:

This chapter aims to examine the relationship between emotional intelligence and work-life balance within the IT sector. Emotional intelligence and work-life balance are two important factors that can significantly impact employee well-being, job satisfaction, and organizational productivity. Through an extensive literature review, clear objectives, a robust research methodology, data analysis, data interpretation, practical suggestions, and a conclusion, this chapter explores the concept of emotional intelligence, work-life balance, and their interplay within the IT sector. The findings of this study provide valuable insights for organizations and employees in enhancing work-life balance and promoting emotional intelligence.

Introduction:

The introduction section provides an overview of the IT sector and highlights the significance of emotional intelligence and work-life balance for employees within this industry. This section sets the context for the chapter and outlines its structure.

Literature Review:

The literature review section presents a comprehensive analysis of existing theories, models, and empirical studies related to emotional intelligence, work-life balance, and their relationship within the IT sector. It explores the definitions, dimensions, and measurement of emotional intelligence and work-life balance. The review establishes the theoretical foundation for the subsequent research and analysis.

Objectives:

This section outlines the specific objectives of the study. It aims to investigate the relationship between emotional intelligence and work-life balance in the IT sector, identify the factors influencing this relationship, and explore the impact of emotional intelligence and work-life balance on employee well-being and job satisfaction.

Research Methodology:

The research methodology section describes the research design, sample selection process, data collection methods, and instrumentation used in the study. It explains how the study ensures data validity and reliability and discusses ethical considerations. The section also outlines the analytical techniques employed to analyze the collected data.

Data Analysis:

This section presents the findings of the data analysis conducted on the collected data. It utilizes quantitative and/or qualitative techniques to analyze the relationship between emotional intelligence and work-life balance in the IT sector. The analysis provides insights into the strength and nature of this relationship.

Data Interpretation:

Building upon the analysis presented in the previous section, this section offers a detailed interpretation of the data findings. It explores the implications of the results, identifies trends, patterns, and relationships between emotional intelligence, work-life balance, and employee well-being within the IT sector. The interpretation provides valuable insights for organizations and employees in promoting work-life balance and emotional intelligence.

Suggestions:

Based on the research findings, this section provides practical suggestions and recommendations for organizations and employees to enhance work-life balance and foster emotional intelligence in the IT sector. It explores strategies for promoting work-life balance initiatives, developing emotional intelligence skills, and creating a supportive work environment.

Conclusion:

The conclusion section summarizes the key findings, implications, and contributions of the study. It provides a comprehensive understanding of the relationship between emotional intelligence and work-life balance in the IT sector and highlights the importance of these factors for employee well-being and job satisfaction.

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Training and Development: A Comprehensive Analysis

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Abstract: This chapter provides an in-depth examination of training and development practices within organizations. Training and development programs play a crucial role in enhancing employee skills, knowledge, and capabilities, contributing to improved performance and organizational success. Through a comprehensive review of literature, clear objectives, a robust research methodology, data analysis, interpretation, and practical suggestions, this chapter aims to explore the significance of training and development, its impact on employee performance, and recommendations for optimizing training and development initiatives within organizations.

Introduction:

The introduction section provides an overview of the importance of training and development in organizations. It highlights the benefits of investing in employee training and development programs, such as increased employee engagement, productivity, and retention. This section also outlines the structure and content of the chapter.

Literature Review:

The literature review section presents a comprehensive analysis of existing theories, models, and empirical studies related to training and development. It explores various training methods, development approaches, and best practices employed in organizations. The review provides a theoretical foundation for the subsequent research and analysis.

Objectives:

This section outlines the specific objectives of the chapter. It aims to evaluate the effectiveness of training and development programs, identify key factors influencing their success, and explore the impact of training and development on employee performance, satisfaction, and organizational outcomes.

Research Methodology:

The research methodology section describes the research design, data collection methods, and instrumentation used in the study. It explains how the study ensures data validity and reliability and discusses ethical considerations. The section also outlines the analytical techniques employed to analyze the collected data.

Data Analysis:

This section presents the findings of the data analysis conducted on the collected data. It employs quantitative and/or qualitative techniques to analyze the effectiveness of training and development programs, the impact on employee performance, and the alignment with organizational goals. The analysis provides insights into the strengths, limitations, and areas for improvement in training and development initiatives.

Data Interpretation:

Building upon the analysis presented in the previous section, this section offers a detailed interpretation of the data findings. It explores the implications of the results, identifies trends, patterns, and relationships between training and development, employee performance, and organizational outcomes. The interpretation provides valuable insights for organizations seeking to optimize their training and development strategies.

Suggestions:

Based on the research findings, this section provides practical suggestions and recommendations for enhancing training and development programs. It explores strategies for designing and delivering effective training, aligning development initiatives with organizational objectives, and evaluating the impact of training and development efforts.

Conclusion:

The conclusion section summarizes the key findings, implications, and contributions of the chapter. It provides a comprehensive understanding of training and development practices, highlights their benefits, and offers recommendations for organizations to optimize their training and development efforts.

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Value Added Tax and Goods and Services: A Comprehensive Guide

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Abstract:

This book provides a comprehensive guide to the concepts, principles, and implications of value added tax (VAT) and goods and services taxation. Through an abstract, introduction, literature review, objectives, research methodology, data analysis, data interpretation, suggestions, conclusion, and references, this book aims to enhance the readers' understanding of VAT and its impact on businesses and economies.

Introduction:

The introduction section presents an overview of VAT and its significance in modern taxation systems. It highlights the objectives, benefits, and challenges associated with VAT implementation. This section also introduces the structure and organization of the book.

Literature Review:

The literature review section explores the existing research and scholarly articles on VAT and goods and services taxation. It covers the historical development, theoretical foundations, and practical applications of VAT across different countries and industries. The review also examines the effects of VAT on consumption patterns, economic growth, and government revenue.

Objectives:

This section outlines the specific objectives of the book. It aims to provide a comprehensive understanding of VAT and goods and services taxation, examine the impact of VAT on businesses and consumers, analyze the effectiveness of VAT as a revenue generation mechanism, and explore potential policy implications and future developments.

Research Methodology:

The research methodology section describes the research design, data sources, and data collection methods used in the book. It explains the selection of case studies, empirical data, and statistical analysis techniques to examine the implementation and effects of VAT. The section also discusses any limitations and assumptions made during the research process.

Data Analysis:

This section presents the findings of the data analysis conducted on VAT implementation and its impact on businesses and consumers. It examines and interprets key indicators, such as VAT revenue collection, compliance rates, and economic indicators affected by VAT. The analysis provides insights into the effectiveness and challenges of VAT implementation.

Data Interpretation:

Building upon the analysis presented in the previous section, this section offers a detailed interpretation of the data findings. It explores the implications of VAT on business operations, pricing strategies, consumer behavior, and government revenue. This interpretation serves as the basis for the suggestions and recommendations.

Suggestions:

Based on the research findings and data interpretation, this section provides practical suggestions and recommendations for policymakers, businesses, and consumers. It proposes strategies for improving VAT compliance, streamlining administrative processes, mitigating the impact on vulnerable populations, and optimizing the efficiency of VAT as a revenue generation tool.

Conclusion:

The conclusion section summarizes the key findings, implications, and contributions of the book. It highlights the importance of VAT as a key component of modern tax systems, its impact on businesses and consumers, and the potential policy considerations for its effective implementation. The section concludes by emphasizing the ongoing relevance and future prospects of VAT in the global economy.

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A Study on “Market Research and Outlets mapping in Fun Flips”

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Abstract:

This chapter explores the importance of market research and outlets mapping in the context of Fun Flips, a fictional amusement park. It provides an introduction to the concept of market research and outlets mapping, defines key terms, and outlines the objectives of the chapter. The chapter delves into data analysis, research methodology, findings, limitations, benefits, suggestions, and concludes with insights on the potential for growth and expansion of Fun Flips through effective market research and outlets mapping.

Introduction:

Market research and outlets mapping play a crucial role in understanding the target market, identifying potential customers, and strategically positioning a business for success. This chapter introduces the concept of market research and outlets mapping in the context of Fun Flips, an amusement park aimed at providing a fun-filled experience to visitors of all ages. It discusses the importance of market research and outlets mapping in identifying market trends, customer preferences, and locating suitable distribution channels.

Objective:

The objective of this chapter is to explore the significance of market research and outlets mapping in the growth and expansion of Fun Flips. It aims to analyze data, research methodologies, and findings to uncover opportunities for attracting a wider customer base, optimizing operations, and enhancing profitability. The chapter seeks to provide insights into the role of market research and outlets mapping in driving strategic decision-making and competitive advantage for Fun Flips.

Data Analysis: Data analysis in the context of market research and outlets mapping for Fun Flips involves reviewing market reports, customer surveys, competitor analysis, and demographic data. It includes examining customer preferences, market trends, and identifying potential target markets. Quantitative and qualitative analysis techniques, such as statistical analysis, trend analysis, and thematic analysis, may be used to derive insights from the data.

Research Methodology: The research methodology for this chapter may involve a combination of primary and secondary research. Primary research methods may include conducting customer surveys, interviews, and focus groups to gather insights on customer preferences, satisfaction levels, and expectations. Secondary research methods may involve reviewing industry reports, market analysis, and competitor studies to understand market dynamics and benchmark against industry standards.

Findings: The findings of this research highlight the importance of market research and outlets mapping in uncovering opportunities for Fun Flips. They showcase the potential target markets, customer segments, and distribution channels that can be explored to attract a wider customer base. The chapter presents empirical evidence, case studies, and examples that demonstrate the impact of effective market research and outlets mapping on business growth and success.

Limitations: Limitations of market research and outlets mapping for Fun Flips may include challenges in data collection, limited resources, and external factors influencing market dynamics. The chapter acknowledges these limitations and discusses their potential impact on the accuracy and generalizability of the findings. It also explores the need for ongoing market research and outlets mapping to adapt to changing customer preferences and market trends.

Benefits: Market research and outlets mapping offer several benefits to Fun Flips, including insights into customer needs and preferences, identification of untapped market segments, optimization of marketing strategies, and improved customer satisfaction. The chapter discusses these benefits and their implications for attracting and retaining customers, optimizing operations, and driving profitability.

Suggestions: Based on the findings, the chapter provides suggestions for Fun Flips to enhance their market research and outlets mapping efforts. It covers areas such as continuous customer feedback collection, leveraging technology for data analysis, exploring partnerships with local businesses, and investing in targeted marketing campaigns. These suggestions aim to optimize the effectiveness of market research and outlets mapping for Fun Flips.

Conclusion: Market research and outlets mapping are crucial for the growth and success of Fun Flips. This chapter concludes by emphasizing the importance of leveraging market research insights to identify new market opportunities, tailor offerings to customer preferences, and optimize distribution channels. It highlights the need for ongoing market research efforts and strategic decision-making based on reliable data and analysis.

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A Study on “Employees Health Management”

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Abstract:

This chapter explores the importance of employee health management in organizations. It provides a comprehensive analysis of the literature on the topic, examines the objective, data analysis, research methodology, findings, limitations, benefits, suggestions, and concludes with insights on the effective management of employee health. The chapter highlights the significance of promoting employee well-being and the impact it can have on organizational performance and productivity.

Introduction:

Employee health management refers to the proactive approach taken by organizations to promote the physical, mental, and emotional well-being of their employees. It encompasses various initiatives and strategies aimed at creating a healthy work environment, preventing health-related issues, and supporting employees in maintaining a healthy lifestyle. This chapter delves into the concept of employee health management, its relevance in today's workplace, and the factors driving its adoption by organizations.

Objective:

The objective of this chapter is to examine the significance of employee health management and its impact on organizational performance. By analyzing relevant data, research methodologies, and findings, this chapter aims to provide insights into the effective management of employee health. It seeks to help organizations understand the benefits, limitations, and suggestions for implementing successful employee health management programs.

Data Analysis:

Data analysis in employee health management involves examining employee health-related metrics, such as absenteeism rates, healthcare utilization, employee satisfaction surveys, and performance indicators. It also includes the analysis of data from wellness programs, health risk assessments, and biometric screenings. The data analysis provides valuable insights into the overall health status of employees and the effectiveness of health management interventions.

Research Methodology:

The research methodology for employee health management involves a combination of quantitative and qualitative approaches. It may include surveys, interviews, focus groups, and analysis of secondary data. Organizations often collaborate with healthcare professionals, occupational health experts, and wellness vendors to gather relevant data and insights.

Findings:

The findings of employee health management research revolve around the positive impact of effective health management programs on employee well-being and organizational outcomes. This includes reduced absenteeism, increased productivity, improved employee morale and engagement, and better overall organizational performance.

Limitations:

Limitations of employee health management programs may include difficulty in measuring the direct financial return on investment, the challenge of accommodating diverse employee needs and preferences, and the potential for program engagement and sustainability.

Benefits:

The benefits of employee health management include improved employee well-being, increased job satisfaction, reduced healthcare costs, enhanced employee retention, and a positive organizational culture. It can also lead to improved reputation and employer branding, attracting top talent to the organization.

Suggestions:

To optimize employee health management programs, organizations should consider implementing a holistic approach that addresses physical, mental, and emotional well-being. They should prioritize communication, employee involvement, and leadership support in promoting a culture of health. Regular evaluation and feedback loops are essential to refine and enhance the effectiveness of the programs.

Conclusion:

Employee health management plays a crucial role in organizational success by promoting employee well-being, engagement, and productivity. By implementing effective health management programs, organizations can create a supportive work environment that fosters employee satisfaction and enhances overall performance. Understanding the benefits, limitations, and best practices of employee health management is essential for organizations to prioritize and invest in the well-being of their workforce.

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Working Capital Management in Manmandir Milk and Agro Products Pvt. Ltd. (Vita): A Comprehensive Study

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Abstract:

This book focuses on the critical aspects of working capital management in the context of Manmandir Milk and Agro Products Pvt. Ltd. (Vita). It provides an in-depth analysis of the company's working capital policies, challenges faced, and strategies adopted to effectively manage working capital. Through an abstract, introduction, literature review, objectives, research methodology, data analysis, data interpretation, suggestions, conclusion, and references, this book presents valuable insights into working capital management, specifically tailored to the operations of Manmandir Milk and Agro Products Pvt. Ltd. (Vita).

Introduction:

The introduction section provides an overview of working capital management and its significance in the financial performance and liquidity of an organization. It introduces Manmandir Milk and Agro Products Pvt. Ltd. (Vita) as a leading player in the dairy industry and highlights the importance of efficient working capital management in sustaining its operations. This section outlines the structure of the book, including the key topics and research questions addressed.

Literature Review:

The literature review section explores existing research and scholarly articles on working capital management, with a specific focus on the dairy industry and Manmandir Milk and Agro Products Pvt. Ltd. (Vita). It examines key concepts and theories related to working capital, liquidity management, cash conversion cycle, and the impact of working capital management on financial performance. The review also discusses industry-specific challenges and best practices in working capital management.

Objectives:

This section outlines the specific objectives of the book. It aims to analyze the working capital management practices of Manmandir Milk and Agro Products Pvt. Ltd. (Vita), evaluate their effectiveness in optimizing liquidity and operational efficiency, identify key challenges faced by the company in managing working capital, and provide recommendations and strategies for improved working capital management.

Research Methodology:

The research methodology section describes the research design, data collection methods, and data analysis techniques used in the study. It explains the use of both primary and secondary data sources, such as financial statements, company reports, and industry data. The section also discusses the sample selection process, ethical considerations, and limitations of the study.

Data Analysis:

This section presents the findings of the data analysis conducted on the working capital management practices of Manmandir Milk and Agro Products Pvt. Ltd. (Vita). It analyzes key financial ratios, cash flow patterns, and operating cycle metrics to evaluate the efficiency of working capital management. It also examines the company's liquidity position, inventory management, accounts receivable and payable practices, and cash conversion cycle.

Data Interpretation:

Building upon the data analysis, this section offers a comprehensive interpretation of the findings. It explores the implications of the results, identifies areas of improvement in working capital management, and provides insights into strategies for optimizing liquidity, reducing operating cycle, and enhancing financial performance. This interpretation forms the basis for the suggestions and recommendations.

Suggestions:

Based on the research findings and data interpretation, this section provides practical suggestions for improving working capital management practices in Manmandir Milk and Agro Products Pvt. Ltd. (Vita). It offers recommendations for effective inventory management, efficient cash flow forecasting, optimizing accounts receivable and payable processes, and adopting suitable working capital financing strategies.

Conclusion:

The conclusion section summarizes the key findings, implications, and contributions of the study. It highlights the importance of effective working capital management for the financial health and

sustainability of Manmandir Milk and Agro Products Pvt. Ltd. (Vita). The section emphasizes the need for continuous monitoring, control, and optimization of working capital to enhance operational efficiency and profitability.

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A Study on “Edtech Startups and Businesses”

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Abstract:

This chapter explores the emergence and impact of edtech startups and businesses in transforming the education landscape through the integration of technology. It provides an introduction to edtech, defines key terms, and outlines the objectives of the chapter. The chapter delves into data analysis, research methodology, findings, limitations, benefits, suggestions, and concludes with insights on the opportunities and challenges associated with edtech startups and businesses.

Introduction:

Edtech startups and businesses have revolutionized the education sector by leveraging technology to enhance teaching and learning experiences. This chapter introduces the concept of edtech, highlighting its potential to bridge gaps in education, improve access to quality learning resources, and enable personalized learning. It discusses the importance of edtech startups and businesses in driving educational innovation and addressing the evolving needs of learners.

Objective:

The objective of this chapter is to explore the role of edtech startups and businesses in transforming education, understand the key drivers of their success, and provide insights into the opportunities and challenges they face. It aims to analyze data, research, and industry trends to shed light on the significance of edtech startups and businesses in shaping the future of education.

Data Analysis:

Data analysis in the context of edtech startups and businesses involves reviewing relevant literature, market reports, and case studies. It includes examining data on edtech adoption rates, user feedback, market trends, and the impact of edtech solutions on student outcomes. Quantitative analysis techniques, such as statistical analysis and trend analysis, may be used to derive insights from the data.

Research Methodology:

The research methodology for this chapter may involve a combination of literature review, case studies, and empirical research. The literature review provides a comprehensive understanding of edtech concepts, models, and best practices. Case studies and empirical research may involve analyzing success stories of edtech startups, conducting surveys or interviews with educators and learners, and evaluating the effectiveness of edtech solutions.

Findings:

The findings of this research highlight the transformative potential of edtech startups and businesses in education. They showcase the impact of edtech solutions on student engagement, learning outcomes, and access to quality education. The chapter presents empirical evidence, case studies, and examples that demonstrate the diverse range of edtech applications, including online learning platforms, adaptive learning tools, virtual reality experiences, and data analytics in education.

Limitations:

Limitations of edtech startups and businesses may include issues of equity, access, and privacy concerns. The chapter acknowledges these limitations and discusses their potential impact on the

scalability and effectiveness of edtech solutions. It also explores the challenges faced by edtech startups in terms of funding, user adoption, and regulatory compliance.

Benefits:

Edtech startups and businesses offer several benefits to the education sector, including increased access to education, personalized learning experiences, improved student engagement, and enhanced teacher effectiveness. The chapter discusses these benefits and their implications for learners, educators, and educational institutions.

Suggestions:

Based on the findings, the chapter provides suggestions for edtech startups and businesses to maximize their impact. It covers areas such as user-centered design, collaboration with educational stakeholders, effective implementation strategies, continuous improvement based on user feedback, and partnerships with schools and universities.

Conclusion:

Edtech startups and businesses have the potential to transform education by harnessing the power of technology. This chapter concludes by emphasizing the importance of collaboration between edtech startups, educators, policymakers, and other stakeholders to realize the full potential of edtech in driving educational innovation. It highlights the need for continuous research, evaluation, and adaptation to ensure the effective integration of edtech in educational settings.

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Breeding For Durable Rust Resistance in Wheat

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Abstract

Wheat (*Triticum aestivum* L.) is one of the most important cereal crop favoured for eating by people all around the globe and commercially produced by the farmers. There are different diseases that harmed the yield as well quality of crop, rust is one of the major disease that cause approximately 20-100 percent loss (Lehman and Shaner, 2018). To alter this condition we use different kinds of approaches that is gene pyramiding, Marker assistant selection, genetic engineering, Marker assistant breeding. However the life cycle of rust makes the condition for its survival in form of primary as well in secondary host where in secondary host act in a dormant stage in high temperature and survives in alternate host where spread through the primary host (Alvarez-Zamorano, 2017). There are two types of goal used to resist the crop, Short term and long term goal, short term goal is also called as the immediate goal. In this generally the introgression and the pyramiding of the major effective gene is done in popular cultivated varieties. It is also called as the race specific resistance because it is only resistant to the specific race of the disease causing pathogen (Dyck, 2020). It is less durable because the pathogen can easily overcome this resistance by the mutation or evolution in the nature. Where in Long term goal also known as the Durable resistance. In this the combining of the Some APR genes like Sr2, Sr13, Sr14, Sr22 with major genes Like Sr24, Sr25, Sr26, Sr27, Sr36 (already introgressed). Also we can Explore new rust resistance gene sources from wild wheat relatives, land races and can be utilized. It is more durable than short term because in this the resistance is not specific to the particular race as combing of the many minor genes which have more additive effect than the major gene are very difficult for the pathogen to overcome through the mutation or evolution (Caldwell, 2068).

Key words- Rust, Durability, gene, inheritance, races, resistance and pathogen.

Introduction

Wheat (*Triticum aestivum* L.) is one of the most important cereal crop favored for eating by people all around the globe, and commercially produced by the farmers. Wheat is grown on the more area as compared to the other crops. It represents 30 percent production among every grain crop all over the world followed by rice (27%) and maize (25%)

According to FAO estimation, world would require around 840 million tons of wheat by 2050 from its present level of 642 million tons. The rust pathogens of wheat are among the most significant yield pathogens making a constant danger crop production. Primarily there are three sorts of rusts: yellow (stripe) rust brought about by *Puccinia striiform. tritici* (*Pst*), leaf (dark colored) rust brought about by *P. triticina* and stem (dark) rust brought about by *P. graminisf.sp. tritici*.

Life cycle of rust

Wheat rust have very complex life cycle that includes two host (wheat the primary host and an alternate host) and have different spore stage. However, the in-season rust cycle is fairly simple, since the alternate host and three of the five spore stages are of little importance for in-season rust development. The urediospores stage is the spore type responsible for dispersal and infection of the wheat crop. Urediospores overwinter on infected wheat in the more moderate climate. Under favourable temperature and moisture conditions, urediospores germinate and infect leaves within 6 to 8 hours after landing on the plant surface. Once established, a new crop of urediospores may be produced every 7 to 14 days if environmental conditions are favourable. The earlier rust develops, the more spore and disease cycles are likely to occur during the season and the greater the risk of severe epidemics and yield loss. Frequent heavy dew, light rain, or high humidity and temperatures of 77 to 86°F are ideal for leaf rust development. Stem rust has a similar optimum temperature range, but stripe rust develops best under much cooler conditions (50 to 64°F). All three diseases are spread by wind blow urediospores from plant to plant and from field to field until the crop matures. As the plant matures, black, submerged pustules develop on the leaves, leaf sheaths, stems, and spikes, depending on the rust. These pustules (telia) contain the winter spores (teliospores). Teliospores do not infect wheat. Telia may not develop when plants become infected very late in the season (close to maturity). In the fall urediospores are blown southward and infect wheat and overwinter as urediospores or mycelium on volunteer wheat plants.

Breeding for Rust resistance in wheat

Use of host resistance is the preferred method for control of disease as it is more effective, economical and eco-friendly as we do not use chemicals to control the disease and it ultimately become more economical for the farmer as he do not have to spray for the disease as he has to just grow the resistant variety. It is effective as lang as the pathogen do not develop virulence against it. A total of 60Sr, 79Lr and 82Yr genes have been designated. Also many temporarily designated and undesignated have been identified and used. The scattered pattern of resistance loci in wheat in contrast to the clustered loci for the resistance in corn and flax for instance offers the breeder more advantage in term of combining other desirable agronomic traits. Another advantage from the breeder point of viewpoint is that relatively only few loci (three Sr, five Lr, and two Yr) are multiallelic.

Durable Leaf Rust Resistance

Resistance is considered durable if it remains effective within a cultivar under cultivation for a significant number of years over a substantial area with favorable conditions for the respective pathogen. Several studies have demonstrated that durability of leaf rust resistance is more likely to be of adult plant type than of seedling type and is often linked to genes or gene loci that confer durable resistance to other rusts and diseases

DIFFERENT APPROCHES

- **Short term goal**
- **Long term goal**

Short term goals - Short term goal is also called as the immediate goal. In this generally the introgression and the pyramiding of the major effective gene is done in popular cultivated varieties. It is also called as the race specific resistance because it is only resistant to the specific race of the disease causing pathogen. It is less durable because the pathogen can easily overcome this resistance by the mutation or evolution in the nature.

Long term goals- Long term goal also known as the Durable resistance. In this the combining of the Some APR genes like Sr2,Sr13,Sr14,Sr22 with major genes Like Sr24,Sr25,Sr26,Sr27,Sr36 (already introgressed). Also we can Explore new rust resistance gene sources from wild wheat relatives, land races and can be utilized.it is more durable than he short term because in this the resistance is not specific to the particular race as combing of the many minor genes which have more additive effect than the major gene are very difficult for the pathogen to overcome through the mutation or evolution.

Host plant resistance

Host plant resistance against *Pt* is grouped into two broad categories: (1) seedling resistance, which is conferred by single or major genes (often race-specific) and (2) adult plant resistance (APR) or partial or polygenic or slow rusting resistance caused by minor genes. APR is mainly race-non-specific, but it can also be race-specific and short-lived, being effective only against *Pt* isolates carrying the corresponding avirulence gene. Seedling resistance is expressed at all growth stages and is sometimes referred to as all-stage resistance (ASR). All-stage resistance is commonly qualitative and associated with a programmed cell death defence response referred to as hypersensitive immunity. Adult plant resistance, on the other hand, is most effective in adult plants and is commonly quantitative. Durable resistance breeding programs should be guided by accurate information of the mechanism and impact of resistance conferred by target genes because it is often the mode of resistance and the right combination of resistance genes that determine the durability of resistance.

Resistance conferred by APR genes is commonly undetectable at a seedling stage but is often effective against a wide range of known *Pt* physiologic races. APR genes confer partial resistance, regulating the pathogen's effectiveness by producing fewer and smaller uredinia which are surrounded by chlorosis. APR often provides long-term and durable resistance. *Lr34/Sr57/Yr18/Pm38* and *Lr67/Sr55/Yr46/Pm46* are some of the few cloned and sequenced adult plant (race-non-specific) resistance genes in plants conferring durable resistance to leaf rust, stripe rust, stem rust, powdery mildew. Adult plant resistance genes may have small to intermediate effects when used individually, while high levels of resistance are achieved by combining four to five genes with additive effects

Linkage between rust resistance genes

There is linkage between several rust resistance gene which offers an added advantage toward multiple rust resistance breeding for example-Sr2/Lr24/Yr30 Sr15/Lr20 , Sr23/Lr16 , Sr24/Lr24/Yr71 ,Sr25/Lr19, Sr31/Lr26/Yr9, Sr38/Lr37/Yr17 , Sr39/Lr35 , Lr57/Yr40 , Lr62/Yr12 , Lr76/Yr70 , Yr51/Yr60. Through this it we transfer one gene we will get resistance against other automatically.

Some of the rust resistance gene are inherited recessively for example- Sr2, Sr12 and Sr 17. Leaf rust resistance gene like Lr14b , Lr30 , Lr37 and Lr48 and yellow rust resistance gene Yr2. But all other resistance gene are dominant. In independent studies, the gene Lr42 was reported dominant or recessive.

Linked genes Lr34/Yr18 and Lr46/Yr29 for slow rusting to leaf and stripe rusts

Dyck (2020) designated gene Lr34 located in chromosome 7DS, which is now known to be present in several cultivars with durable resistance to leaf rust. Singh (1993).Studies have shown that Lr34 affects all three components of slow rusting, i.e. it increases latent period and decreases number and size of uredinia. The effect was more pronounced in post seedling growth stages, although measurable differences also occurred in the seedling stage. Temperature can influence the expression of resistance conferred by the gene Lr34

Studies of Singh (1992b) and McIntosh (1992) have shown that gene Lr34 is closely linked with gene Yr18, which confers slow rusting to stripe rust. It has been seen that Yr 18 also increases the latent period, and decreases infection frequency and length of infection lesions (stripes) to stripe rust.

Rubiales and Niks (1995) studied the infection process and indicated that partial resistance due to Lr34 was based on reduced rate of haustorium formation in the early stages of infection, in association with no or relatively little plant cell necrosis. Electron microscopic studies of Alvarez-Zamorano (2017) on Jupateco 73 isolines have shown an accumulation of unknown electron dense substances in the cells of Lr34 line near the site where haustorial mother cells try to dissolve the cell wall of mesophyll cells for the formation of haustoria. It would appear that the accumulation (cell wall apposition) causes a thickening of cell wall, which reduces the establishment of haustorial tube. If haustoria are formed, the slow mycelial growth may be due to a restricted movement of fungus from one cell to other by a similar phenomenon. Alvarez-Zamorano (1995) also observed structural change in the Lr34 line leading to invagination, or contraction of cell wall, which may delay the completion of infection process. These observations indicate a different mechanism for Lr34 based slow rusting than hypersensitivity, which is associated with race-specific genes. Because pathogen isolates can vary for aggressiveness (Lehman and Shaner, 2018), it may be difficult to differentiate pathogenic variation for increased capability to overcome slow rusting resistance of this type from aggressiveness.

Combinations of Lr34, Lr46 and other genes for durable leaf rust resistance

The South American cultivar 'Frontana' is considered to be one of the best sources of durable resistance to leaf rust (Roelfs, 1988). Genetic analysis of Frontana and various CIMMYT

wheats possessing excellent partial resistance to leaf rust worldwide has indicated that adult plant resistance is based on the additive effects of Lr34 and two or three additional slow rusting genes, commonly known as the Lr34 complex (Singh and Rajaram, 1992). Cultivars with Lr34 and three or four additional genes show a stable response in environments tested so far, with final leaf rust ratings lower than 5% even under heavy rust pressure. The presence of Lr34 can be indicated by the presence of leaf tip necrosis in adult plants, which is closely linked with it (Singh, 1992a). Results of Sayre et al. (1998) show that 7.7 to 10.4% losses in grain yield of cultivars that carry such combinations of 2 or 3 genes with Lr34 were similar to 6.6 to 10.2% losses in cultivars that carry hypersensitive types of resistance under high leaf rust pressure.

Combinations of Yr18, Yr29, Yr30 and other genes for durable stripe rust resistance

Singh (1992b) and McIntosh (1992) have indicated that the moderate level of durable adult plant resistance of the CIMMYT-derived US wheat cultivar Anza is controlled by gene Yr18, which is also present in winter wheats such as Bezostaja. As mentioned earlier, this gene is completely linked with the Lr34 gene. The level of resistance it confers is usually not adequate when present alone. However, combinations of Yr18 and 3-4 additional slow rusting genes (the Yr18 complex) result in adequate resistance levels in most environments (Singh and Rajaram, 1994).

Molecular markers for genes conferring slow rusting resistance Although advances in finding closely linked markers are notable with race-specific genes, especially those transferred into wheat from alien sources, progress with slow rusting genes has been slow and limited. QTL analyses have shown several chromosomal regions that enhance resistance to leaf or yellow rust (William et al., 1997; Nelson et al., 1997; Messmer et al., 2000; Singh et al., 2000; William et al., 2003; Suenaga et al., 2003).

Chromosomal regions involved in slow rusting resistance to leaf and yellow rusts in Pavon 76 and Parula were identified at CIMMYT by testing RILs (recombinant inbred lines) from the crosses of these wheats with susceptible cultivar Avocet S. The linkage between Lr46 and Yr29 was in fact first identified in the Avocet S/Pavon 76 cross. Other interesting features included the presence of additional QTLs that conferred resistance to both leaf and yellow rusts, and QTLs which were disease specific. It is also worth mentioning that presence of *Agropyronelongatum* segment carrying stem rust resistance gene Sr26 had minor but significant effects in reducing leaf and yellow rust severities in at least Pavon population. This relationship was also found in the Avocet/Tonichi 81 cross (data not presented). A total of at least 6 distinct additive genes for leaf and yellow rusts were identified between Pavon 76, Parula and Tonichi81. Such mapping efforts have been useful to understand the genetic basis of interactions among genes and their mapping. All attempts to find a diagnostic marker for slow rusting genes Lr34 and Yr18 have failed so far. The closest markers for Lr34/Yr18 and Lr46/Yr29 genes are about 10 cM away.

Challenges in Breeding for Durable Leaf Rust Resistance

As much as rust pathogens, in general, have great economic importance, limited information is available on the genes and factors required for pathogenesis and virulence. Adding to this, accurate information on the effect of the environment and full knowledge of the identity of effective resistance genes in the host, their mode of action when interacting with the *Avr* gene, and the interaction of slow rusting resistance genes with other resistance genes or gene

loci to achieve stable and durable rust resistance across environments is still limited. It has been reported in several studies that temperature variations play a significant role in the expression of many resistance genes. Studies by Pretorius et al. (1984) and Kolmer (1996) also highlighted the effects of temperature on the expression of the APR gene *Lr13*. In the former study, *Lr13* was expressed at 25°C, resulting in an avirulent infection type in seedling plants exposed to three isolates of *Pt* from Mexico, China and Chile. Kolmer (1996) on the other hand showed that *Pt* isolates from North America have high infection types to seedlings with *Lr13* regardless of temperature, but many of the same isolates have low infection types to adult plants with *Lr13*.

The Future of Durable Resistance Breeding

Much effort is still required than just relying on the phenotypic and genetic characterization of individual resistance genes to achieve durable resistance. A more system-oriented approach is needed, and this may include developing durable transgenic hosts and silencing of essential genes in the pathogen by expressing small interfering RNAs in the host (HIGS). Modest progress has been made in engineering durable resistance to wheat rust, especially leaf rust which causes considerable damage to wheat production. Resistance genes are continually being characterized and mapped in wheat and its relatives with only a few durable leaf rust resistance genes mapped. Cloning more effective resistance genes is needed for incorporation into resistance gene cassettes which could be successful in breeding for durable rust resistance. The advantage of cassettes is that the genes segregate as a unit. The genome editing technology can also prove useful for both the host and the pathogen, aiding in sequentially inserting multiple cassettes or incorporating multiple genes including non-host resistance genes at a single target site in the plant genome.

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Organic Farming in Fruit Production

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ABSTRACT

Organic farming refers to agricultural production systems reliant on green manure, compost, biological pest control and crop rotation to produce crops, livestock, and poultry. Organic farming is dependent on developing ecological biodiversity in the plantation farm to interrupt the habitation of pests and diseases, and ensuring meaningful maintenance and improvement of soil fertility. By all necessary means, organic farming does not allow the use of synthetic chemical fertilizers, antibiotics, herbicides or pesticides. The most important nutrients that humans get from fruits, vegetables and other food items are calcium, protein, carbohydrates, vitamins etc. Organic farming preserves the nutrients of the food item, which makes us healthier (Justin 2013). Organic farming provides macronutrients and micronutrients to the plants and also improves soil physical, chemical and biological characteristics of soil. Plants treated with *Azospirillum* + *Azotobacter* + VAM showed maximum fruit weight, maximum fruit length and yield in guava (Dutta *et al.*, 2014). Nagpur oranges favor more requirement of organic matter to maintain and regulate the supply of nutrients to plants. Application of 10Kg vermicompost in the month of June significantly increase the fruit number, fruit weight and fruit yield of orange. (Makode 2015). The combined application of organic manures FYM + Neem cake + Vermicompost + Wood ash + Triple green manuring with Sunhemp + Double intercropping of Cow Pea + Biofertilizers registered the maximum growth and yield in Banana (Vanilarasuet *et al.*, 2014). Thus, under present scenarios of highly deteriorated soils health and quality due to over doses of chemical fertilizers, organic manures and biofertilizers may play a crucial role in improving the yield of fruit crops making the production system economical and eco-friendly to use.

3. Introduction

Today in agricultural sector, crop yield is diminishing day by day in spite of maximization of chemical inputs. Vicious cycle of chemical farming is now exposed in the increasing crop un-sustainability, higher input requirement, poor soil quality as well as repeatedly pest and disease infestation. The excess use of pesticides and fertilizers gave rise to the entry of harmful compounds into food chain, death of natural enemies and deterioration of surrounding ecology. Enhanced use of pesticide has resulted in serious health influences to man and his environment. So, improvement, conservation and maintenance of system productivity and resource quality is necessary for sustainable agriculture. Organic farming can solve many of these problems as this system helps to maintain soil productivity and effectively control pest by enhancing natural processes and

cycles in harmony with environment. Today, it is clear to the agricultural community that organic farming is the best option for not only protecting/sustaining soil-plant - ecological relationship but to reduce the unfavourable effect of climate change. **(Barik A.K. 2017)**

Organic farming is a technique, which involves the cultivation of plants and rearing of animals in natural ways. This process involves the use of biological materials, avoiding synthetic substances to maintain soil fertility and ecological balance thereby minimizing pollution and wastage. The specific agricultural practices that have less negative impacts on the environment are such as crop rotation, manure, green manure, organic pest control etc., and some technical and methodological innovations. Organic farming leads to preservation of natural resources, causes minimal negative impact on nature. Both organic and low-input farming could minimize this negative impact so as to maintain biodiversity and control weeds, insects and other pests through natural approaches. The demand of organic foods and their products is increased day by day which is good opportunities for producers and retailers to establish their own market and sell products on premium prices. **(Tsvetkov et al.,2018)**

History

- Sir Albert Howard(1873-1947) is the Father of modern organic agriculture.
- In 1924 Biodynamic agriculture is given by Dr. Rudolf Steiner. **(Paull et al., 2011)**
- The Book Published “Living Soil” of Lady Eve Balfour in 1939.
- Walter James Coined the term “Organic Farming” in his book “Look to the Land” in1940. **(Paull et al., 2014)**
- An International Campaign called Green revolution was launched in Mexico in 1944.
- Book Published “Silent Spring” of Rachel Carson in 1962. **(Paull et al., 2007)**
- In 1972, the International Federation of Organic Agriculture Movements (IFOAM) wasfounded in Versailles, France. **(Paull et al., 2010)**
- Masanobu Fukuoka Published “The One Straw Revolution”, Natural Farming in 1975.
- In 1984, Oregon Tilth established an early organic certification service in the UnitedStates.

4. Area and Production under Organic Farming

1. AREA

- Total area under organic certification process (registered under National Programme for Organic Production) is 3.67 million Hectare.
- Among all the states, **Madhya Pradesh** has covered largest area under organic certification followed by Rajasthan, Maharashtra, Gujarat, Karnataka, Odhisa, Sikkim and Uttar Pradesh.

2. PRODUCTION

- India produced around 2.75 million MT of certified organic products which includes all varieties of food products namely Oil Seeds, Sugar cane, Cereals & Millets, Cotton, Pulses, Aromatic & Medicinal Plants, Tea, Coffee, Fruits, Spices, Dry Fruits, Vegetables, Processed foods etc. The production is not limited to the edible sector but also produces organic cotton fiber, functional food products etc

Among different states **Madhya Pradesh** is the largest producer followed by Maharashtra, Karnataka, Uttar Pradesh and Rajasthan. In terms of commodities Oil seeds

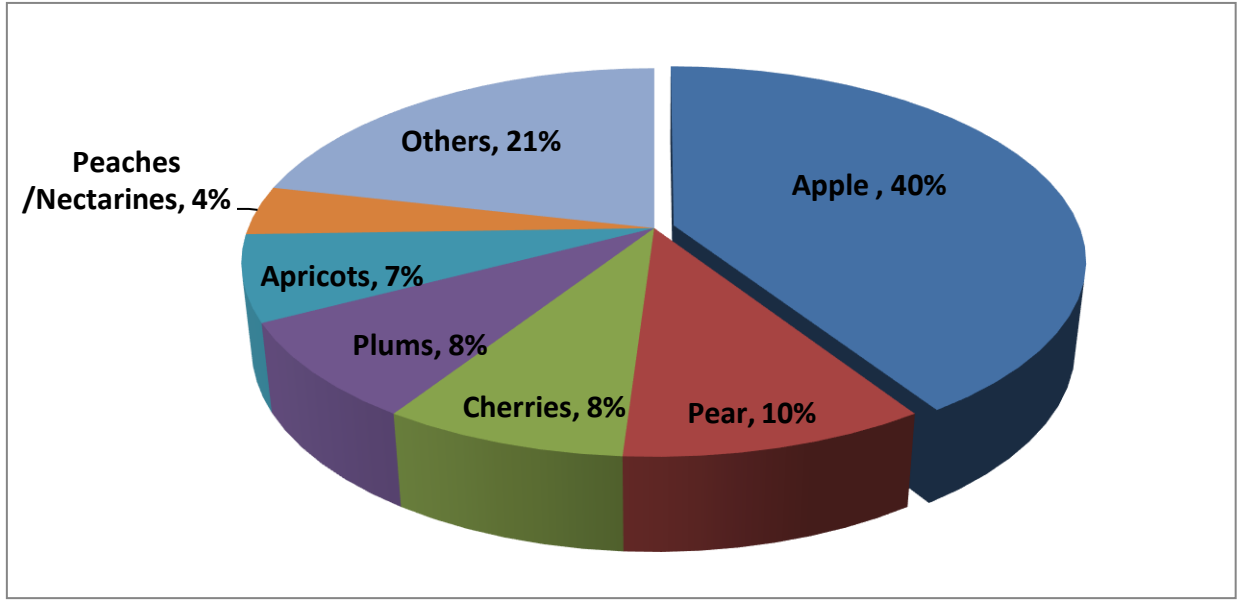
are the single largest category followed by Sugar crops, Cereals and Millets, Tea & Coffee, Fiber crops, fodder, Pulses, Medicinal/ Herbal and Aromatic plants and Spices & Condiments. (Source : APEDA 2019-2020)

5. Organic Production Under Fruits

	Production(Tons)
India	5814.95
Himachal Pradesh	1146.56

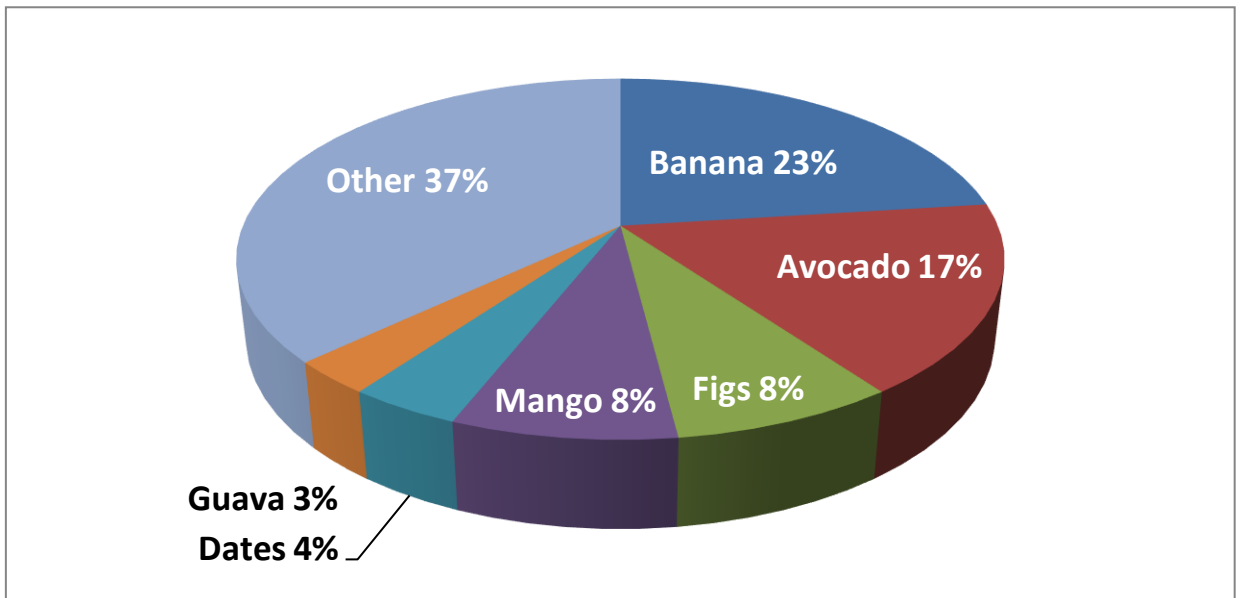
Organic Export

India	6,14,089.614 MT (5150.99 Crores)
Himachal Pradesh	11.270 MT (1.34 Crores)
Fruits/ juices/pulps and concentrates	12,195.92 MT (132.88 Crores)



- The maximum global organic area is covered by Apple which is 40% followed by Pear which is 10%. Area of apple in hectare is 81,837 and Organic share is 1.5%, Area of Pearis 20,664 ha and 1.3% Organic share.

6. Global Organic Area Covered by Tropical and Subtropical Fruit Crops



- The maximum global organic area is covered by Banana which is 23% followed by Avocado which is 17%. Area of in Banana hectare is 88,581 and Organic share is 0.9%, Area of avocado is 63,449 ha and 11.3% Organic share.

7. Principles of Organic Farming



Organic farming is underpinned by a set of guiding principles, drawn up by the International Federation of Organic Agricultural Movements (IFOAM). These are:

- **1. The principle of health:** Organic farming should sustain and enhance the health of soil, plant, animal and human as one and indivisible whole.

- **2. The principle of ecology:** Organic farming should be based on living ecological systems and cycles, work with them and help to sustain them.
- **3. The principle of fairness:** Organic farming should be built upon relationships that ensure fairness with regard to the common environment and life opportunities. This principle recognizes human and social issues as well as environmental concerns. Fairness is characterized by equity, respect, justice and legal.
- **4. The principle of care:** It should be managed in a precautionary and responsible manner to protect the health and well-being of current and future generations and the environment. **(kundu 2018)**

8. Characteristics of Organic Farming

- Organic farming systems aim to put those above mentioned principles into practice. It heavily relies on farm generated, renewable resources and less on external inputs. They are driven by ecological and biological processes to provide nutrition, and to protect the orchard against pests and diseases.

The main elements of an organic system are:

- 1) Good soil management leading to good soil fertility, maintenance of high soil organic matter, high levels of microbial activity and good soil structure.
- 2) Well designed crop rotations for balancing fertility, controlling weeds, and minimising pest and disease problems.
- 3) Preventative and non chemical approaches to weed, pest and disease problems.
- 4) A profitable output of organic cash crops and/or livestock. **(kundu 2018)**

9. Components of Organic Farming

1. Organic manures
2. Bio-fertilizers

3. Green manures
4. Non-chemical weed management
5. Biological control
6. Vermi-technology

1. Organic manures

Manure is the decomposed form of dead plants and animals, which is applied to the soil to increase production. It is a natural form of fertilizer and is cost-effective. The human and animal excreta is also used as manure. The livestock manure is rich in nitrogen, phosphorus, and potassium. Manure is highly rich in organic matter and humus and thus improves the soil fertility. These are better in the long run and does not cause any pollution. It is a valuable and renewable resource.

Manure can be obtained from various sources. The different sources of manure are mentioned below:

- Cattle dung, urine, and slurry from biogas plants.
- Wastes from human habitation such as human urine, night soil, sludge, sewage, domestic waste.
- Droppings of goat and sheep
- Waste from the slaughterhouses such as bones, meat, horn and hoof meal, fish waste
- By-products of agricultural industries
- Crop waste
- Weeds, water hyacinth.

Types of Manure

Manure can be grouped as farmyard manure, green manure and compost manure. Following are the different types of manure used by the farmers:

1. Green Manure

Green manure increases the percentage of organic matter in the soil. The roots of such manures go deep into the soil. These help in the suppression of weeds and the prevention of soil erosion.

2. Farmyard Manure

Farmyard manure improves the soil structure and is used as a natural fertilizer in farming. It increases the soil capacity to hold more water and nutrients. It also increases the microbial activity of the soil to improve its mineral supply and also the plant nutrients.

3. Compost Manure

It improves the soil structure and water and nutrient holding capacity of the soil. Thus, it increases the nutrient value and thereby improves the health of the plants.

2. Bio-fertilizers

Biofertilizer is a material which contains living microorganisms. When applied to plant surfaces, they promote plant growth by increasing the supply of primary nutrients to the host plant. Bio-fertilizers add nutrients through natural processes such as nitrogen fixation, solubilizing phosphorus, and stimulating plant growth along with the synthesis of growth-promoting substances. (Sneha *et al.*, 2018)

□ Rhizobium

Rhizobium is Gram-negative, motile, rod shape, free living organism present in soil and have the tendency to fix the atmospheric N in symbiotic manner. They are known as an endosymbiotic N fixing microorganism related with root of legumes. It penetrates into plants through the root system and later forms nodule. The root nodules

Rhizobium is able to influence the shoot and root growth in rice plants. There are several methods available for the introduction of Rhizobium inoculants in soil; seed dipping is one of the common method for the application of Rhizobium. During seed germination, the bacteria infects into root hair and spread towards the root. When the plant grows, Rhizobium will convert N into ammonia for plant growth.

□ **Azotobacter**

Azotobacter are free living bacteria which grows well on a nitrogen free medium. Such bacteria utilize the atmospheric nitrogen gas for their cell protein synthesis. This cell protein is later mineralized in soil after the death of Azotobacter cells, thus contributing to the nitrogen availability of the crop plants. Azotobacter spp. are sensitive to acidic pH, high salts, and temperature of 35 C. □ Besides N₂ fixation, Azotobacter synthesizes and secretes large amounts of organically active substances, such as B vitamins, nicotinic acid, pantothenic acid, biotin, heteroxins, and gibberellins etc., which improve the root growth of plants. Other characteristic of Azotobacter associate with crop improvement is the secretion of ammonia in the rhizosphere in the presence of root exudates, which helps in modification of nutrient uptake by the plants. Improvement in crop production due to Azotobacter inoculation has been reported in a number of crops. Azotobacter increases the production of the agriculture crop plants by 10-12%. Azotobacter can also improve growth and grain yield in wheat crop. Azotobacter act as one of vital biofertilizer for rice and other cereals, it can be applied by seed dipping and seedling root dipping methods.

□ **Azospirillum**

Azospirillum is a Gram negative motile bacteria, related with roots of monocots, including essential crops, particularly wheat, corn and rice. It is the main productive phytostimulator inoculant for cereals worldwide. Azospirillum can be established as an associative symbiosis with cereals, the association is not shown by the formation of new organs. It is an associative type of microorganism effective in colonizing the root surface of the plants. By establishing a symbiotic organization, it helps the plants to obtain nitrogen from the atmosphere.

□ **Vesicular Arbuscular Mycorrhiza (VAM)**

Mycorrhizae are common beneficial relationships between fungi and plant roots. VAM fungi contaminate and spread inside the root. They have special structures known as vesicles and arbuscules. The plant roots transfer substances to the fungi, and the fungi aid in transferring nutrients and water to the plant roots. The fungal hyphae may increase the root lengths. The hyphae reach further and wetter soil areas and help plants absorb many nutrients, especially the less available mineral nutrients such as phosphorus, zinc, molybdenum and copper. Several VAM fungi form a kind of sheath around the root, sometimes giving it a hairy, cottony appearance. Because they provide a protective cover, mycorrhizae improve seedling tolerance to drought, high temperatures, infection by disease fungi and even to extreme soil acidity. Application of VAM produces preferable root systems which engage root rotting and soil borne pathogens. The considerable growth response to mycorrhizal fungi is likely seen in plants in highly weathered tropical acid soils that are low in basic cations and P, and may have toxic levels of aluminium. Plants with limited root systems would be the most beneficial. (Sneha *et al.*, 2018)

3. Green manures

□ Legumes as Green Manure The green manuring practices are of two types:

(a) in situ green manuring crops and (b) ex situ green leaf manuring (GLM). In in situ green manuring, short-duration (~45 to 60 days) crops are grown and incorporated into soil at the same site. In ex situ green manuring, foliage and tender parts of green manuring crops collected from nearby forests, shrubs, and trees are incorporated into the soil at 15–30 days prior to the sowing of main crops. There are many crops which can be used for green manuring; however the selection of the green manure crop depends upon several factors like the prevailing climatic conditions, cropping system practiced, availability of seed, and other factors including local habits and prejudices. The legume crops have an edge over nonlegume crops due to ability of fixing atmospheric N.

- (a) Grain legumes: pigeon pea (*Cajanus cajan*), green gram (*Vigna radiata*), soybean (*Glycine max*), or groundnut (*Arachis hypogaea*)
- (b) Multipurpose perennial legume trees: subabul (*Leucaena leucocephala*), gliricidia (*Gliricidia sepium*), and kassod tree (*Cassia tora*)
- (c) Non-grain legume crops: sunn hemp (*Crotalaria juncea*), dhaincha (*Sesbania rostrata*), centrosema (*Centrosema acutifolium*), stylo (*Stylosanthes guianensis*), and desmodium (*Desmodium ovalifolium*).

The most commonly grown LGM crops are sunn hemp, dhaincha, berseem (*Trifolium alexandrinum*), and green gram. The leguminous crops, namely, cowpea, green gram, black gram, pigeon pea, chick pea, black lentil, pea, groundnut, soybean, dhaincha, and sunn hemp; woody legumes, namely, subabul, gliricidia, karanj and Pongamia have the ability to fix the atmospheric N in their root nodules. A green manure crop should have some desirable characteristics, viz., fast-growing habit, short duration, high N accumulation rate, high tolerance to biotic stresses (pest and disease), abiotic stresses (flood, drought, salinity, and adverse temperatures), wide range of ecological adaptability, timely release of nutrients, photoperiod insensitivity, high seed production, higher seed viability, and most importantly easiness in incorporation (**Meena et al., 2018**).

4. Non-chemical weed management

Most weed control strategies aim at changing and/or reducing the relative competitiveness of the weed species, thereby favouring growth and development of the crop in comparison with the weed flora.

2. Preventive weed control methods:

- Cultural weed management-** Cultural management method refers to any technique that involves maintaining field conditions such as growing competitive crops in the

intercropping or cover crops timely cultivation, mulching, using agronomic practices that promote vigorous crop growth, and growing a competitive variety, all contribute to an effective weed management program. These practices can also have additional benefits of enhancing soil fertility and facilitating the management of pest and diseases. The ability of crops to compete against weeds could be increased by selecting the right crops and cultivars, considering the weeds present as well as the climate, ensuring rapid and uniform crop emergence through proper seedbed preparation, and by using the right seed and seeding depth, increasing planting density and adapting planting patterns wherever possible to crowd out weeds, adequate and localized resource (water, fertilizer) application, and optimum management of the crop, including insect pest and disease management.

- **Mechanical and physical weed control-** Mechanical weeding is one of the oldest, but the most common methods of weed control and it is an essential component of most organic cropping systems, as there are few alternatives to control intra-row weeds after crop emergence. Most mechanical weed control methods, such as hoeing, tillage, harrowing, torsion weeding, finger weeding and brush weeding, are used at very early weed growth stages. Hoeing can be effective on older weeds, and remains selective, many mechanical control methods become difficult after the cotyledon stage and their selectivity decreases with increasing crop and weed age. Thus, if the weeds have become too large, an intensive and aggressive adjustment of the implements is necessary to control the weeds, and by doing this one increases the risk of damaging the crop severely
- **Planting arrangement-** Alteration of planting arrangement can be proposed as an efficient practice to suppress weeds in agroecosystems. This can be achieved by the change of sowing time, planting density, row spacing, row orientation, etc.
- **Biological weed control-** Biological management of weeds involves the deliberate use of host-specific phytophagous arthropods and plant pathogens to reduce the population

weed control in crops can be distinguished: the inoculative or classical approach and the inundative or microbial approach. Classic approach involves the release of a relatively small number of control agents; these agents feed on the weed, reproduce and gradually suppress the weed as their population grows; arthropods are generally used as control agents. Successes with inoculative biological weed control has been recorded in control of *Chondrilla juncea* L. (skeleton weed) in wheat *Triticum aestivum* L. (wheat) in Australia. (Sanbagavalli *et al.*,2016)

5. Biological control of Pest and Diseases

- It includes agents which do not destroy the crop but rather destroy the insect and pests.
- Conservation of these naturally occurring farmer's friends in the field or multiplying them in the laboratory and releasing in the fields.

Biological Control Agents- Biological control agents or natural enemies are organisms such as Insects or plants disease that are use to control pest species. Natural enemies of insect pests, also known as biological control agents, include predators, parasitoids, and pathogens. Biological control agents of plant diseases are most often referred to as antagonists. Biological control agents of weeds include herbivores and plant pathogens.

- i. **Predators-** Predatory insects are beneficial because they feed directly on other insects like aphids. Common predatory insects include lacewings, ladybugs, and praying mantids.
- ii. **Parasitoids-** The term parasite is frequently used for insects that parasitize other insects. Parasites are usually much smaller than their host and have a shorter life cycle than their host. Examples include tapeworms and ticks. While a parasitoid is an organism that spends a significant portion of its life history attached to or within a single host organism in a relationship that is in essence parasitic.
- iii. **Pathogens-** Pathogens are microorganisms including certain bacteria, fungi, nematodes, protozoa, and viruses that can infect and kill the host. Populations of

prolonged high humidity or dense pest populations. In addition to naturally occurring disease outbreaks, some beneficial pathogens are commercially available as biological or microbial pesticides. For Example- *Bacillus thuringiensis* .(*Sanda et al., 2016*)

Example: In case of Apple : *Woolly apple aphid* is bio-controlled by *Aphelinus mali* at 1000 adults and *Banana Anthracnose* is bio-controlled by *Trichoderma harzianum* .

6. Vermi-technology

A. Vermiwash

- Prepared from populations of earthworms reared in earthen pots or plastic drums.
- The extract contains important micronutrients, vitamins (such as B12) and hormones(gibberellins) secreted by earthworms.
- Earthworms produce bacteriostatic substances and thus its use can prevent bacterialinfection.
- Vermiwash is sprayed on crops and trees for better growth, yield and quality of produce.

B. Vermicompost

- Vermicompost refers to organic manure produced by earthworms
- Mixture of worm forming (faecal excretions) organic materials including humus, liveearthworms, their cocoons and other micro-organisms.
- It acts as a complex fertilizer
- It has found that addition of bio-agents like *Pseudomonas* and *Trichoderma* improved thequality of vermicompost.
- *Eisenia foetida* and *Dendrobaena veneta* are used for making compost.

10. Brief Research Work

I. Effect of Organic Manures on Fruit Quality of Papaya cv. ArkaPrabhat

Treatments	Pulp thickness(cm)	Fruit firmness (kgcm ⁻²)	Ascorbic acid(mg100g ⁻¹)	Titration acidity (%)	TSS (°Brix)
T1 - FYM	2.59	10.54	60.66	0.123	12.46
T2 - Vermicompost	2.54	9.50	57.58	0.149	11.51
T3 - Neem cake	2.34	8.78	56.08	0.113	12.58
T4 - Sheep manure	2.84	11.53	67.33	0.133	13.32
T5 - FYM + Vermicompost	2.44	8.56	51.16	0.157	12.79
T6 - FYM + Neem cake	2.38	9.44	61.61	0.118	11.04
T7 - FYM + Sheepmanure	2.54	10.96	51.75	0.137	11.42

T8 - 100 % RDF	2.31	9.61	51.16	0.106	10.78
S.Em± C.D at 0.05	0.04	0.20	1.15	0.004	0.15
	0.15	0.63	9.65	0.013	0.47

Rekha *et al.*, (2018)

II. Effect of organic manure and biofertilizers on Plant Growth of sweetorange cv. Mosambi

Treatment	Increase in plant height(cm)	Plant volume (m³)	Trunk girth (cm)	Leaf size (cm²)
T1 (Control)	13.17	3.16	0.33	22.47
T2 (FYM-40kg/plant)	20.37	4.27	0.60	35.20
T3 (VAM-100g/plant)	15.47	3.41	0.40	25.51
T4 (Azotobacter-10g/plant)	16.13	3.42	0.43	27.48
T5 (FYM-40kg/plant+VAM-100g/plant)	23.60	4.66	0.67	38.51

T6 (FYM-40kg/plant+Azotobacter-10g/plant)	24.13	4.70	0.77	39.26
T7 (VAM-100g/plant+Azotobacter-10g/plant)	19.63	3.78	0.53	32.62
T8 (FYM-40kg/plant+VAM-100g/plant+Azotobacter-10g/plant)	25.23	4.87	0.97	40.54
S. E.(d)	0.66	0.47	0.12	1.18
C.D.0.05	1.43	1.02	0.26	2.25

Rana *et al.*, (2020)

III. Effect of organic manure and biofertilizers on Flowering and Fruiting of sweetorange cv. Mosambi

Treatment	No of flowers/plant	Fruit setting %	Average fruit weight (g)	Fruit yield/plant (kg)
T1(Control)	47.67	47.53	77.26	1.59

T2(FYM-40kg/plant)	65.67	55.38	93.32	3.38
T3 (VAM-100g/plant)	47.33	51.29	84.07	1.93
T4 (Azotobacter-10g/plant)	49.67	51.64	81.31	1.98
T5 (FYM-40kg/plant+VAM-100g/plant)	94.33	63.95	98.42	5.29
T6 (FYM-40kg/plant+Azotobacter-10g/plant)	84.33	55.83	97.63	4.52
T7 (VAM-100g/plant+Azotobacter-10g/plant)	62.67	47.87	84.13	2.92
T8 (FYM-40kg/plant+VAM-100g/plant+Azotobacter-10g/plant)	98.33	66.15	104.02	5.89
S. E.(d)	3.77	2.80	3.69	0.26
C.D.0.05	8.16	6.07	8.00	0.57

Rana *et al.*, (2020)

IV. Effect of organic manure and biofertilizers on Physical characteristics of sweetorange cv. Mosambi

Treatment	Fruit length (cm)	Fruit diameter(cm)
T1(Control)	5.52	5.31
T2(FYM-40kg/plant)	5.72	6.37
T3 (VAM-100g/plant)	5.54	5.43
T4 (Azotobacter-10g/plant)	5.56	5.67
T5 (FYM-40kg/plant+VAM-100g/plant)	6.01	6.53
T6 (FYM-40kg/plant+Azotobacter-10g/plant)	6.12	6.65
T7 (VAM-100g/plant+Azotobacter-10g/plant)	5.59	6.01
T8 (FYM-40kg/plant+VAM-100g/plant+Azotobacter-10g/plant)	6.19	6.87
S. E.(d)	0.22	0.12
C.D.0.05	0.48	0.27

Rana *et al.*, (2020)

V. Effect of vermicompost and biofertilizers on yield of strawberry

Treatment	Yield per plant (g)
Control	136.59
VC (10 t/ha)	159.13
Azoto(7 kg/ha)	164.90
PSB (6kg/ha)	201.52
AM(5kg/ha)	135.89
VC+Azotobacter	210.9
VC+PSB	237.01
VC+AM	251.38
VC+Azoto+PSB	279.05
VC+Azoto+AM	284.28
VC+PSB+AM	297.73
VC+Azoto+PSB+AM	311.26
Sem±	2.05
CD@5%	6.02

Singh *et al.*, (2015)

11. Merits

Strengths	Opportunities
<ol style="list-style-type: none">1. Sustainable agriculture2. Results in safe environment3. Preservation of biodiversity4. Reduces cost of cultivation	<ol style="list-style-type: none">1. Possibility for premium prices2. Can conserve the natural resources3. Build up soil fertility4. Improve global export market5. Employment generation

Demerits

Weaknesses	Threats
<ol style="list-style-type: none">1. Costly certification process2. Reduction of yield in early years3. Irregular supply of organic produce4. Weak government policy5. Lack of awareness	<ol style="list-style-type: none">1. Decreasing trends of all organic sources2. Non-affordable certification3. Belief in modernization4. Global competition for export

12. Conclusion

- The modern form of organic farming is new concept. However it is being popular in the world speedily especially in developed countries.

- Organic farming system is an alternative and appropriate management system would help to improve soil health environment thus increase the productive levels and improve quality of fruit crops.
- India has tremendous potential to grow crops & fruit organically and emerge as a major supplier of organic products in the world's organic market.

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A Study on “Human Resources and General Management”

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Abstract:

This chapter explores the relationship between human resources (HR) and general management within organizations. It examines the roles and responsibilities of HR in supporting overall business objectives and strategies. The chapter outlines the objective, data analysis, research methodology, findings, limitations, benefits, suggestions, and concludes with insights on how organizations can effectively integrate HR practices into general management to drive organizational success.

Introduction:

Human resources play a critical role in the effective management of an organization. This chapter introduces the concept of HR and its importance in achieving business goals. It highlights the interconnectedness between HR and general management functions, emphasizing the need for a strategic approach to HR practices.

Literature Review: Managing a business is a challenge let alone dividing it into sub-divisions and managing them individually as key aspects of the main business. Depending upon nature, every business has multiple functions that make up its whole infrastructure ranging from, customer service to logistics, business analytics to humanresources, etc. Effective management of all these different aspects of a business is key to its success. General Management is a vast discipline that encapsulates major aspects including, accounting, finance, entrepreneurship so on, and so forth. Most of the business management online courses are rooting in the fundamentals of problem-solving, decision making, and leadership. This enables the person to have a better understanding of how the business world operates and equips them to handle adversities with ease. Human Resource Management Human Resource or as commonly known as HR is a function of the business management that manages all the issues related to the people or the employees. Its various functions

Objective:

The objective of this chapter is to explore the integration of HR and general management functions within organizations. It aims to analyze the impact of HR practices on organizational performance, employee engagement, and overall business success. The chapter seeks to provide insights into effective HR strategies and their alignment with general management objectives.

Data Analysis:

Data analysis in this context involves examining relevant HR metrics, organizational performance indicators, and employee feedback. It includes quantitative analysis to measure the impact of HR practices on key performance indicators. Qualitative analysis helps in understanding the underlying factors and mechanisms that contribute to successful HR and general management integration.

Research Methodology:

The research methodology for this chapter involves a combination of primary and secondary research. Primary research methods may include surveys, interviews, and case studies to gather insights from HR professionals, managers, and employees. Secondary research involves reviewing existing literature, industry reports, and best practices in HR and general management integration.

Findings:

The findings of this research highlight the significance of effective HR and general management integration for organizational success. It explores the impact of HR practices on talent acquisition, employee development, performance management, and employee engagement. The chapter presents empirical evidence and case studies that demonstrate the positive influence of strategic HR practices on overall business outcomes.

Limitations:

Limitations of this research may include the context-specific nature of findings, potential biases in data collection, and the complexity of organizational dynamics. The chapter acknowledges these limitations and discusses their potential impact on the generalizability of the findings.

Benefits:

The benefits of integrating HR and general management functions include improved talent acquisition and retention, enhanced employee performance and engagement, streamlined organizational processes, and increased overall productivity. The chapter discusses these benefits and their implications for organizational success.

Suggestions:

To effectively integrate HR and general management functions, organizations should prioritize strategic HR planning, align HR practices with business objectives, foster collaboration between HR and other departments, and invest in employee development and engagement initiatives. The chapter provides suggestions for organizations to optimize HR and general management integration.

Conclusion:

The integration of HR and general management functions is crucial for organizational success. By aligning HR practices with business strategies, organizations can effectively manage human capital, foster a positive work culture, and drive performance and engagement. This chapter concludes by emphasizing the need for continuous improvement, innovation, and collaboration between HR and general management to achieve sustainable organizational s

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Fashion influence of Bollywood on Society- Study

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Abstract

Movies are the most impactful medium among mass media. Its impact can be seen in usage of dialogues in memes, standup comedy. As cinema and society are complementary to each other. Promotion of trends and brands is a common phenomenon. The research was conducted to investigate the fashion influence of bollywood among society. Qualitative analysis was used by the researcher for this study. Particular movies used as the tool of data collection. Movies were thoroughly analyzed in order to find whether bollywood influences the fashion over the period of time or not.

Introduction

The fashion and media are evolving with the passage of time, the fashion game is also changing. The influence of the movie's fashion is quite visible and can be noticed by anyone. The actual history of the Indian film industry goes back to 1913 when Dadasaheb Phalke also known as the Father of Indian cinema released a full length feature titled 'Raja Harishchandra'.

The feature movie created history by being the first Indian film to be screened in London. Over the years a few production companies emerged yet films based on mythology like stories of Mahabharata, Ramayana and folk stories dominated the industry (Paul, 2015).

Till 1931, the Indian film industry had its first talkie named 'Alam Ara' by Ardeshir Irani. The Evolution of the industry was picking up pace until the second world war. Till the year 1947, the paradigm has been shifted from folk stories to contemporary cinema.

Existing struggles of Society, the prevailing hypocrisy, prostitution, dowry, polygamy, etc., became the new trends of film industry where as fashion influence was slowly taking it's place in society. Adoption of the hairstyles of the protagonist(s), bell bottoms, polka dots, etc., were the emergence of film influence over the people.

While the commencing era of Indian film industry displayed characters with fully covered costumes. The evolution lead covered skins turn into more exposed costumes. Tacky and sparkling costumes started coming up especially in item numbers. Hairstyles kept transforming with the evolving film fashion. The heavy head buns and hair-dos were very subtly replaced by wavy hairs, curls and flaunting the open hairs.

In her writings on gender, feminist scholar Judith Butler argues that gender is expressed in “styles of the flesh” (1999 [1990]: 177) and that dress is an important component of these gendered identities (1993: 33). The fashion media have been central in teaching their readers, to paraphrase Simone de Beauvoir, “how one becomes a woman” and, especially recently, “how to become a man.” (Best,2022).

The 1960s and 1970s saw a new fashion trend of anarkali kurtas and drape saree with the release of Mughal-e-azam and Brahmachari. The century witnessed a new fashion statement of draping a sweater over shoulders popularized by well known actor Dev Anand. The winged-eyeliner, fringed hairstyles (Sadhana cut), tighter costumes, bell bottoms, oversized glasses and bold makeup looks were the fashion statements that dominated over the styling sense of people. 1980s and 1990s beholds the dominance of metallic and neon colors, shoulder pads and stout accessories. Showing off the skin was the new fashion. A dharma movie released in 1998 ‘Kuch kuch hota hai’ handed out a new image of college life while setting fashion goals by the cast. With the cast wearing skirts and jeans. The movie popularized the sports wear as well. In the 21st century, well known fashion designers and international brands came up. The Indian film industry becomes more about brands and creating costumes for the characters (Siddiqui, 2016).

The 2004 released ‘Dhoom’ and its sequel ‘Dhoom 2’ set a new fashion trend of shorter and skinnier outfits. The protagonist was seen wearing more sensual costumes especially in the music video of the film (Clip of the song ‘Crazy kiya re’).

The researchers intended to study the influence of film fashion on the public and to analyze the shift in trends of styling due to films. The researchers have chosen 5 movies from 2011-2015 and 5 movies

from 2016-2020. The researchers planned to analyze the movies based on its fashion and the influence on society. The research has observed a decent swift in the fashion sense along with changing trends in the Indian film industry.

Objectives

1. To analyze the shift in fashion sense in Bollywood Cinema.
2. To analyze the amount of proportion the cinema contributes to the changing trends.

Literature Review

'The study of the Indian fashion system with a special emphasis on women's occasion wear' by Vaibbavi Pruthviraj Ranavaade and Anjali Karolia. The article examines the primary contributors to the Indian fashion system. The interaction of fashion systems with everyday wear/casual wear, as well as the concept of workwear and power dressing, is explored in this article.

'Fashion trends and their impact on society: A case study on apparel trends of Indian Society' By Barkha Ravi Shende. This paper investigates India's latest fashion trends. It looks at the latest trends in India's garment industry. This article assisted the researcher in comprehending ancient India's garment patterns, as well as analyzing the issues that society faces as a result of fashion trends and their impact on India. This article provides a framework for considering the extent to which emerging fashion trends in India will have an impact on future generations.

'Hindi movies as communication of fashion components' by Sangeeta Dediya and Garima Upadhyay. This article examines how some films have an almost immediate fashion impact; a few films appear to provide instant inspiration to fashion designers and collections. The article examines the evolution of fashion across multiple centuries, demonstrating that as our attitudes and cultures change, so does fashion. The research focuses on the examination of Bollywood actors' costumes based on fashion component components.

'Impact of Indian Cinema on culture and creation of world view among youth: A sociological analysis of Bollywood movies by Shubhra Rajat Balabantaray'. This article examines the impact of movies/cinema on Indian culture, as well as the cultural revolution that has occurred in India as a result of Indian Cinema's contribution. In addition, this research examines how Indian films have influenced the way people live.

Research Methodology

The sample selected for the research are 10 bollywood movies from the year 2011 to 2020. One blockbuster movie from each year was selected and critically analyzed by the researchers. The reach of blockbusters is wide enough to study the fashion sense and influence of bollywood movies. The researchers analyzed the movies on the basis of the following parameters: hairstyling, footwear, accessories, makeup and the dressing styles of the protagonists. The change in the style of dressing [attire], the amount of accessories [minimized /maximized] along with the hairs, makeup and footwear were reviewed with a critical eye.

The researchers intended to contemplate the shift in Bollywood fashion sense over the years. The research used content analysis research technique which is a qualitative method. This method was more suitable for the research than other methods.

Data Collection and Interpretation

A sample of 10 bollywood blockbuster movies from the year 2011-2020 were taken . These bollywood films were analyzed on the five variables that are hair , makeup, footwear, accessories and attire.

Mere Brother Ki Dulhan [2011]

This feature movie directed by Ali Abbas Zafar of length 145 minutes is a light young romantic film. The story revolves around two brothers and a girl who is chosen by the younger brother as a bride for his elder brother but the story takes a turn when the younger brother and the girl start developing feelings for each other days before the marriage. In the film, both actors wore casual t-shirts, shirts, and

jeans pairing them with sneakers whereas one of the actors who returned from London was seen wearing coats. The lead actress's style transition was a must-watch thing. When the film is in flashback, the actress was seen wearing rockstar-edgy looks as a college student like mini skirts, chunky tops, floral dresses paired with velvet boots with open hair, bold makeup, and lots of accessories whereas in present in the film when she is about to get married she is seen wearing Kurtis with jeans and cargos with minimal boho jewelry. As the actress in the movie is a return from London, her looks were modern with an Indian touch. The feature brought the trend of velvet boots in 2011 and a type of fashion where Indian touch was present with the modern attires.

Student of the year [2012]

This feature movie directed by Karan Johar is 146 minutes long. The movie revolves around seven college students and one student of the year trophy. The attire of the main lead along with the cast is more contemporary . The female cast wore short length dresses with high heels. The attire did not have too much of sparkle and were rather plain or printed. Different bright coloured outfits such as red, green , yellow etc. were seen . Less eye makeup with a bright lipstick which was noticed to be red in most of the shots. Very minimal accessories such as headbands , bracelets and a necklace or earring are observed to be worn by the cast along with which co-ordinated or contrast handbags were also used. The male cast showed a different fashion sense in one of the songs of the film, RADHA TERI CHUNARI. The protagonist was seen wearing a slipper cum sandal with traditional dhoti and Kurta. The fashion in 2011 showed a fondness in minimal accessories and clothing . The film tried to start a new trend of coordinated/contrast handbags and slipper sandals under traditional wear such as Kurta. The movie has shown a type of fashion which requires minimal accessories and makeup . The short dresses encourage and normalize over knee length dresses.

Yeh Jawaani Hai Deewani [2013]

This feature movie directed by Ayan Mukerji is 159 minutes long. The romantic comedy film was released in 2015 and the researcher has observed a strong Indian traditional dressing style . The film has shown multiple types of sarees and lehengas . The female lead was seen wearing a kurta with contrasting colors of dupatta and salwar. The cast had shimmery dark eye makeup with nude lip shades . Loose hairs with light curls [sometimes waves] were perceived. The male lead was presented in effortless yet comfortable outfits such as faded jeans , checked shirts . The actor also appeared in the famous Blue kurta .

Khoobsurat [2014]

This feature movie directed by Shashanka Ghosh is 127 minutes long. Khoobsurat is a feature directed by Shashank Ghosh . The film showed a contrast in the dressing sense of the female lead and supporting actress. The feature film showcased a dressing style with neon and popping colors . meanwhile a contrast of royal look with minimal jewelry consisting of pearls. Clothing such as leggings and multi printed clothing has been observed by the researchers. The clothing also had geometrical designs . The actresses were seen to be having natural makeup looks with some accessories such as head scarf , earrings , hand bands. On the other hand the male protagonist had a formal look throughout the film which included a three piece men's suit with plain color contrasting shirts . The dressing of the main female lead was demonstrated as casual with flat footwear and comforting yet colorful. However there was a difference in the hairstyle as the female cast had either wavy short or straight short hair. Usage of a lot of neon and multicolour scarfs was noticed.

Dil Dhadakne Do [2015]

This feature movie directed by Zoya Akhtar is 173 minutes long. This family drama feature film showcased retro looks and dressing styles . Bell bottom pants along with heels has come into the researcher's attention. The movie had the retro puffed hairstyle with low curls. The movie also had a retro British/american female with red lipstick, curly hair and a mole on the cheek. This feature brought

back a little retro cinema with a little amount of sparkles in terms of attire. A whole black outfit with leather jacket was contemplated. Accessories worn were very less.

Befikre [2016]

This feature movie directed by Aditya Chopra is 130 minutes long. This feature is about two young people living in Paris having a casual relationship filled with lots of emotional ups and downs and intermittent breakups. This romantic comedy-drama film ends with the marriage of these youngsters leading to the happy ending of love. The film has shown the basic and classic Befikre's style. The attires in the movie replicate the essence of energy the characters have. There is a scene where the leading actress wears a cap that says 'who cares' in French, for the initial part of the movie she is wearing T-shirts as crop tops, leather shorts or skirts with tops, floral dresses with oversized denim patchwork jackets and all cute-chic romantic Paris's summer attires. As her character is mature her attire changes to more solid color shift dresses, long coats, and one of the most stunning attire was a midnight blue lace gown. Makeup was minimal yet cute, hairstyles were more of like wavy hairs or half buns with bright red colored hair and basic sneakers gave a perfect urban girl vibe. Whereas male lead pulled off full sleeves shirts open over vests, jeans and basic white sneakers, crew-neck T-shirts, and some cool pastel hue suits and jackets. The feature influenced the trends in both male and female attires. Floral dresses dominated the solid dresses, oversized jackets, pastel colors and sneakers dominated the fashion industry in 2016.

Ok Jaanu [2017]

This feature movie directed by Shaad Ali is 137 minutes long. This feature is a romantic drama film in which two ambitious youngsters fall in love after they met at a wedding and start a no-strings-attached live-in-relationship which later on makes them doubt their decision due to their careers. The attires in this movie look simple, sensible, and modern. Outfits were chic, young, and quirky. The lead actress had contemporary style from casual looks like denim skirts, pleated skirts, graphic tees, Desi prints, and Indian touches like Kurta and Dhoti or a line Kurta were great. Also, her formal looks like bright colored

trousers with a white shirt along with suspenders and a leather bag-pack like attires were pulled off by her well. One attire in which she wore a shoulder red gown was a cherry on top. Chic yet cute earrings, neckpieces, watches, and bangles with cute ponytails and open hair looks gave inspiration to so many young girls out there. The leading actor was seen wearing ripped jeans with Henley, T-shirts, shorts, cap, and more like casual youngsters' attires whereas his transition in adopting a culture of Ahmedabad in a scene wearing bandhani shirt makes a huge difference. Both leads were seen wearing sneakers and pulled off the looks well. In 2017, one of the most popular trends came with this movie was Bandhani shirts. Cute ponytails and leather backpack also dominated.

Veerey Di Wedding [2018]

This feature movie directed by Shashanka Ghosh is 130 minutes long. This feature is a female buddy comedy film. The story of the film revolves around four female friends and one of them is getting married. One of them took her other three friends before their friend's marriage on a trip to Thailand where they rediscovered themselves. The outfits of this film are best for wedding looks, inspiration for brides to be and bridesmaids. In the film, the bride-to-be wore full bohemian looks with boots and casual and relaxed silhouettes. The bride's wedding day dress was an off-shoulder yellow lehenga. Also, the bride-to-be gave major inspiration with her breathtaking cape-style mirror work blouse with lehenga and gown of pastel blue color with star embellishment. Other three actresses wore elegant and glamorous attires like bralette blouse with pink lehenga, for curvy people fit and flare and A-line dresses inspirations are there in the film and for moody people edginess and a lot of glam outfits like mirror work lehenga with a thigh-high slit were seen on an actress in the film. Overall the attires of actresses in this film gave inspiration for all body types. Glam and bold makeup look with hairstyles like braids and sleek buns were perfect inspirations for Indian weddings. Boots, heels, and casual sneakers were worn by the actresses and classy jewelry were also seen in the film. This feature was an inspiration in 2018 for so many brides-to-be and bridesmaids either it was yellow coloured wedding lehenga or minimal makeup look. Cape-style blouses and mirror work also got into fashion.

Good Newwz [2019]

This feature movie directed by Raj Mehta is 132 minutes long. This feature is a comedy-drama film with four lead characters where two couples have issues conceiving a baby. They do in vitro fertilization (IVF), a fertility technique that will enhance their chances but end up in a complicated situation because their doctor makes a real gaffe. In this feature, all four lead actors gave huge fashion goals. One of the lead actors in the only Sikh actor who doesn't compromise his turban for the sake of acting and in the film, he wore a major brand baggy sweatshirt with incredible sneakers and paired up with comfy pants. Another lead actor gave funky looks inspiration with a beautiful ravishing striped blue Kurta. One of the leading actresses wore attire with a white formal shirt matching it with a traditional skirt and pulled off a nude makeup look. She wore an oxidized necklace with open wavy hairs. Another lead actress gave the comfy but hot fashion goals while wearing a typical Punjabi suit with bright colored bangles she pulled off this look with sneakers. All the actors in the movie gave huge fashion inspiration and bright colors were a key to their attires. This feature made baggy clothes, a combination of traditional and modern wear, and bright colors a big trend in 2019.

Street dancer 3D (2020)

This feature is a dance film directed by Remo D'Souza is 146 minutes long. The film is based in London and the story revolves around the two rival dance groups from India and Pakistan who in the end come together as one team to win one of the biggest dance competitions. The attires of this feature look trendy and athleisure. Not only the dance moves but the attire of the main leads were also interesting. Based in London, which has a cool climate, actors were seen wearing chic winter clothing. Female leads pulled off bright and neon color warm clothes like trendy cut-out crop tops or sports bras with comfortable leggings and puffer jackets, coats, and sweaters enough to cover up after showing their abs and toned legs. Bustier crop tops, mini shorts, joggers, and outfits for an hourglass frame were also seen on one of the leading actresses. Threaded braids in the hair and kohl-lined eyes, bold eyeliners and to accessorize,

hoop earrings, chunky necklaces, and bracelets gave a full boho look to the actresses. Moreover from clothing to footwear all the lead roles pulled off the trendy attires yet let them easily flex their dance moves. The leading actor was seen pulling off a studded look in bomber jackets, leather jackets, simple denim shirts, and comfortable pants with featured a mix of patterns and comfy sneakers. The leading actor changed his hair color throughout the movie several times. Kohl-lined eyes and threaded braids were highlights of this feature which became very famous in 2020. Clothes which were covering enough after showing abs and toned legs became a big trend and even still are in trend.

Conclusion

Society is ever changing and with the passage of time Bollywood and fashion has become an integral part of our lives. R.M Maclver (1937) also defined society as “a web of social relations which is always changing” (Mondal, 2022).

Bollywood films not only used as an asset to entertain the audience but now are getting used as a tool to aware, influence and entertain the society but also to advertise products and persuade the society and use the fan following of well established stars to create a market .

The research 'Fashion influence of Bollywood on society' was conducted to analyze the fashion influence of Bollywood among people. The research had two objectives:

1. To analyze the shift in fashion sense in Bollywood cinema

According to the research there has been a significant shift in fashion of Bollywood over the period of time. In a news article of The Hindu by Bandana Tewari, in Qatar India 2019 Year of Culture in Doha, nine contemporary Indian clothing brands were exhibited and can be seen as a paradigm shift in Indian fashion (Paper et al., 2022).

The Bollywood blockbusters from the year 2011 to 2020 were seen to have a very different fashion sense than others. Each movie has a different style of costumes(dresses), hairdos, accessories, footwear and makeup .

The movies in the selected time span shows more of western looks where the main leads (actor/actress) were seen wearing edgy clothes like skirts, casual T-shirts, jeans and short dresses etc. From short floral dresses, skin fit attires to puffed jackets, crop tops, joggers, etc. were observed by the researchers. While films such as *Ye Jawaani Hai Deewani* (2013) and *Veerey Di Wedding* (2018) displayed a special emphasis on Indian traditional attires along with minimal yet elegant accessories to create a flawless millennial traditional look. The film *Dil Dhadakne Do* (2015) portrayed more retro looks from bellbottoms to puffed hairstyles.

As per the findings of the research, one common thing in all the featured films from the chosen decade of 2011 to 2020 was that the attires were created keeping comfort in mind. The costumes were made elegant yet comfortable. The makeup on the other hand went from bright lipstick and winged liner to more nude and natural looks.

2. To analyze the amount of proportion the cinema contributes to the changing trends.

The second objective of the research conducted was to analyze the amount of proportion the cinema contributes to the changing trends. According to an article "Bollywood has for long exerted a deep influence on popular Indian fashion. Any outfit adorned by an actor or actress in a hit movie immediately becomes a prime sartorial trend for tailors to reproduce."

In her writings on gender, feminist scholar Judith Butler argues that gender is expressed in "styles of the flesh" (1999 [1990]: 177) and that dress is an important component of these gendered identities (1993: 33).

The fashion media have been central in teaching their readers, to paraphrase Simone de Beauvoir, "how one becomes a woman" and, especially recently, "how to become a man" ("The History of Fashion Journalism", 2022).

The fashion used or created in Bollywood tells a lot about the character, it's behavior and it's personality. The fashion in today's Bollywood industry has become an overview window to the character in the scene.

In a research titled "A study of brand promotion activity through product placement in bollywood blockbuster films" by Vijay Kumar in the year 2018 found out that 'The statement 'Celebrities' appeal influences you to purchase the product'. vs Occupation 35 percent of the respondents agree that celebrities' appeal influence them to purchase the product. 52.1 percent of them are students, 41.4 percent are working professionals and 6.4 percent are self-employed respondents. On the other hand, 29 percent of the respondents disagree with the statement that celebrities' appeal influences them to purchase the product. Among them 55.2 percent are students, 37.9 percent are working professionals and 6.9 percent are self-employed respondents.'

In a research done by Rishi P Shukla titled 'Critical study of product placement in Indian films with special reference to Hindi films' , it is observed that product placements in Movies might influence viewers to buy the product if it is associated with an actor they like. The said product could be any clothing brand or any product that is promoted through Hindi cinema . The research further concluded ,along with their other conclusions, that the audience will get influenced by the brands, which also includes clothing, accessories, footwear etc. The researcher of the same research stated that ' Respondents also agreed that people would be influenced by the brands they see in movies.'

Walmsley B. explored that movies or theater can impact its audiences immediately or over a span of time. He also found that regular attendees of theaters with high expectations became emotional and cannot imagine a life without theater. They got the highest value from their experience and its impact became a self-fulfilling prophecy (Walmsley, 2022).

A research done by Nirav Mandavia (2020) has revealed different factors that influence the audience to watch Bollywood movies in theaters. These factors are the genre of the film, socializing with friends and family, relaxation time etc. but bollywood fashion has become an indirect influence to its audiences' lives (MANDAVIA & LIMBASIYA, 2022).

The two objectives that were determined In this conducted research were found to be true.

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Social Movements and Inequality in the Indian Economy: An Analysis of Impacts and Dimensions

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Abstract:

This research examines the impact of social movements on the Indian economy and the dimensions of inequality in Indian society. It analyzes the role of various social movements, such as agrarian movements, labor movements, environmental movements, anti-globalization movements, women's movements, and their influence on economic policies and social change. Additionally, it explores the factors contributing to inequality in Indian society, including the caste system, income disparities, gender inequities, unequal access to resources, and the urban-rural divide. The study also investigates the efforts made to address inequality through policy interventions, social initiatives, and inclusive development strategies. By providing an in-depth analysis of social movements and inequality in India, this research contributes to a better understanding of the dynamics between social activism and economic development.

Keywords: Social movements, Indian economy, agrarian movements, labor movements, environmental movements, anti-globalization movements, women's movements, inequality, caste system, income disparities, gender inequities, urban-rural divide, policy interventions, inclusive development, literature review, case study analysis, dimensions of inequality.

Introduction: Social movements in India have played a significant role in shaping and influencing the Indian economy. These movements are often driven by collective action and mobilization of groups or communities to advocate for social, economic, and political change. Here are a few ways social movements have impacted the Indian economy:

Agrarian Movements: India has a long history of agrarian movements that seek to address issues related to land rights, agricultural policies, and farmer welfare. Movements like the Telangana Peasant Armed Struggle, Naxalite movements, and recent farmer protests have highlighted the challenges faced by farmers and pushed for agrarian reforms and fairer economic policies.

Labor Movements: Labor movements in India have fought for workers' rights, better working conditions, fair wages, and social security. These movements have been instrumental in shaping labor laws, influencing industrial policies, and advocating for workers' welfare.

Environmental Movements: India has witnessed various environmental movements, such as the Chipko Movement and the Narmada Bachao Andolan, which have challenged destructive development projects, advocated for sustainable practices, and emphasized the importance of environmental protection in economic development.

Anti-globalization Movements: In recent years, there have been movements against globalization and the adverse impacts of economic liberalization. These movements raise concerns about the concentration of wealth, loss of livelihoods, and the exploitation of natural resources by multinational corporations.

Women's Movements: Women's movements in India have highlighted gender inequalities in the economy and society. They have pushed for gender equality in labor markets, advocated for women's rights, and campaigned against practices such as dowry, domestic violence, and gender-based discrimination in the workplace.

Inequality in Indian Society: Inequality is a persistent challenge in Indian society, manifested in various forms such as income disparity, caste-based discrimination, gender inequities, and uneven access to education, healthcare, and opportunities. Here are some key factors contributing to inequality in Indian society:

Caste System: The caste system, although officially abolished, continues to influence social and economic hierarchies. Discrimination and exclusion based on caste limit opportunities and perpetuate social inequalities.

Income Disparities: India has significant income disparities, with a small fraction of the population possessing a disproportionate share of wealth. Factors such as unequal access to education, employment opportunities, and social networks contribute to income inequality.

Gender Inequities: Gender-based discrimination and inequality persist in many aspects of Indian society. Women face limited access to education, restricted economic opportunities, and societal norms that perpetuate gender roles and stereotypes.

Unequal Access to Resources: Unequal access to resources such as land, credit, healthcare, and education further exacerbates inequality. Marginalized communities and disadvantaged groups often face barriers in accessing these resources.

Urban-Rural Divide: The urban-rural divide in India is characterized by disparities in infrastructure, employment opportunities, and access to basic services. Rural areas often experience a lack of development and limited economic opportunities, contributing to inequalities.

Efforts to address inequality in Indian society involve policy interventions, social initiatives, and inclusive development strategies. Programs such as affirmative action (reservation), poverty alleviation schemes, education reforms, and women empowerment initiatives aim to reduce disparities and create a more equitable society. However, addressing deep-rooted inequalities requires sustained efforts from various stakeholders, including the government, civil society, and communities themselves.

Research Methodology:

This research adopts a qualitative approach, utilizing a literature review and case study analysis. The literature review encompasses academic articles, books, reports, and relevant government publications that examine social movements, their impact on the Indian economy, and the dimensions of inequality in Indian society. The case study analysis focuses on specific social movements in India and their outcomes, drawing on primary and secondary sources. The research also includes a comparative analysis of policies and initiatives aimed at addressing inequality. The findings are presented and analyzed thematically to identify common patterns, trends, and implications.

Analysis: India has a rich history of social movements that have played a crucial role in bringing about social, political, and economic change. Here are some prominent social movements in India:

Indian Independence Movement: The Indian independence movement, led by Mahatma Gandhi and various other freedom fighters, aimed at liberating India from British colonial rule. It involved nonviolent resistance, civil disobedience, and mass mobilization, eventually leading to India's independence in 1947.

Social Reform Movements:

The Brahmo Samaj and Arya Samaj movements in the 19th century advocated for social and religious reforms, including the eradication of caste discrimination, promotion of women's rights, and the spread of education.

The Women's Suffrage Movement fought for women's right to vote and gender equality.

The Dalit Movement, led by figures like Dr. B.R. Ambedkar, focused on the rights and empowerment of Dalits (formerly known as "untouchables") and the eradication of caste-based discrimination.

The Backward Classes Movement aimed at addressing the social and economic marginalization of backward castes and communities.

Environmental Movements:

The Chipko Movement in the 1970s was a grassroots movement that focused on the protection of forests and natural resources. It involved hugging trees to prevent them from being felled, highlighting the need for sustainable development.

The Narmada Bachao Andolan was a movement against the construction of large dams on the Narmada River, advocating for the rights of displaced communities and the preservation of the environment.

Anti-Corruption Movement:

The India Against Corruption movement, led by Anna Hazare, emerged in 2011, demanding the enactment of a strong anti-corruption legislation known as the Lokpal Bill. The movement garnered widespread public support and brought the issue of corruption to the forefront of national discourse.

Farmers' Movements:

The recent farmers' protests in India have seen farmers from different parts of the country rallying against agricultural reforms, demanding fair prices for their produce, and calling for the repeal of contentious farm laws.

Women's Rights Movements:

Various movements have focused on women's rights and empowerment, including campaigns against gender-based violence, child marriage, dowry, and female infanticide. Organizations like the Gulabi Gang and the National Federation of Indian Women have been at the forefront of these movements.

LGBTQ+ Rights Movement:

The LGBTQ+ rights movement in India has been instrumental in advocating for the decriminalization of homosexuality and fighting for equal rights and acceptance for the LGBTQ+ community.

These movements reflect the diverse social, political, and economic challenges faced by different sections of Indian society. They have contributed to progressive changes, policy reforms, and the evolution of a more inclusive and equitable society in India.

Inequality is a significant issue in Indian society, manifested in various forms such as economic disparities, social hierarchies, and unequal access to resources and opportunities. Here are some key dimensions of inequality in Indian society:

Economic Inequality: India has a stark income and wealth disparity, with a small percentage of the population holding a significant portion of the country's wealth, while a large segment struggles with poverty and lack of access to basic necessities. Economic inequality is influenced by factors such as unequal distribution of land, limited job opportunities, and disparities in education and skills.

Caste-based Inequality: The caste system has historically been a prominent source of inequality in India. It categorizes individuals into social groups based on birth, with Dalits (formerly known as "untouchables") and lower castes facing discrimination, exclusion, and limited access to resources and opportunities. Although the caste system is officially abolished, its influence is still deeply entrenched in society.

Gender Inequality: Gender disparities persist in various aspects of Indian society. Women often face discrimination and barriers in education, employment, and decision-making. Issues like female infanticide, child marriage, dowry-related violence, and limited representation in political and leadership positions further exacerbate gender inequality.

Rural-Urban Divide: There is a significant divide between rural and urban areas in terms of access to infrastructure, healthcare, education, and employment opportunities. Rural areas often experience lower development indicators, limited access to resources, and lack of basic amenities, leading to increased inequality.

Regional Disparities: Regional disparities exist within India, with certain states and regions lagging behind others in terms of economic growth, infrastructure development, and social indicators. This disparity contributes to unequal opportunities and outcomes for people residing in different parts of the country.

Educational Inequality: Unequal access to quality education is a major contributor to social and economic inequality in India. Disparities in educational opportunities, particularly for marginalized communities and economically disadvantaged groups, hinder social mobility and perpetuate inequality.

Conclusion: Addressing inequality in Indian society requires comprehensive efforts, including policy interventions, social reforms, and changes in attitudes and mindsets. Initiatives such as affirmative action (reservation) for disadvantaged groups, poverty alleviation programs, women empowerment schemes, and educational reforms aim to reduce inequality and create a more inclusive society. It is crucial to

promote equitable access to resources, eliminate discriminatory practices, and ensure equal opportunities for all individuals, irrespective of their social background or gender.

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The McBride Commission and UNESCO: Addressing Communication Problems, Unequal Development, and Third World Concerns

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Abstract:

This research examines the McBride Commission, established by UNESCO in 1980, and its efforts to study communication problems and propose solutions for improving global media and communication systems. The focus is on the relationship between communication and development, particularly in developing countries, addressing issues of unequal access to information and the influence of media on cultural diversity, national sovereignty, and social progress. The research analyzes the McBride Report's key recommendations and their impact on media pluralism, freedom of expression, and democratizing media structures. It also explores UNESCO's initiatives in addressing unequal development and Third World concerns, including education, science, culture, and communication. Through a comprehensive review of literature, this research provides insights into the importance of inclusive development, cultural diversity, and equal access to education, science, and communication in achieving a more equitable and sustainable world.

Keywords: McBride Commission, UNESCO, communication problems, media pluralism, unequal development, Third World concerns, democratizing media, cultural diversity, freedom of expression, inclusive development, education, science, communication, global media landscape.

Introduction: The McBride Commission, officially known as the International Commission for the Study of Communication Problems, was established in 1980 by the United Nations Educational, Scientific and Cultural Organization (UNESCO). The commission was named after its chairman, Sean McBride, an Irish diplomat and Nobel Peace Prize laureate. The primary objective of the McBride Commission was to study and analyze communication problems in the world and make recommendations for improving media and communication systems on a global scale.

The commission's work focused on the relationship between communication and development, particularly in developing countries. It aimed to address issues such as unequal access to information and the influence of media on cultural diversity, national sovereignty, and social progress. The McBride Commission recognized the role of media in shaping public opinion, disseminating information, and promoting cultural expression.

The McBride Commission's most significant achievement was the publication of the report titled "Many Voices, One World," also known as the McBride Report, in 1980. The report addressed various aspects of global communication, including media concentration, cultural imperialism, censorship, and media ownership. It advocated for democratizing media structures, promoting media pluralism, and ensuring freedom of expression.

Key recommendations of the McBride Report included:

Promoting media diversity and pluralism to ensure a range of perspectives and voices in the media landscape.

Encouraging participatory communication, enabling people to have a say in the media and communication processes that affect their lives.

Strengthening media education and media literacy to enable individuals to critically engage with media content and understand its social, cultural, and political implications.

Reducing media concentration and encouraging media ownership that reflects the diversity of society.

Protecting cultural identities and supporting the development and preservation of local and national media systems.

Promoting international cooperation in the field of media and communication to foster a more equitable global information order.

The McBride Report sparked significant debate and discussions, drawing attention to issues of media ownership, cultural representation, and information flow. It had a lasting impact on international media

policy and contributed to ongoing discussions about media democratization, media freedom, and the role of communication in sustainable development.

While the recommendations of the McBride Commission were not universally accepted or implemented, its work raised awareness about the importance of communication rights, media diversity, and the need for a more equitable global media landscape. The report continues to be referenced and debated by scholars, policymakers, and media activists interested in media and communication issues.

UNESCO, the United Nations Educational, Scientific and Cultural Organization, is a specialized agency of the United Nations. It was established in 1945 with the goal of promoting peace, sustainable development, and intercultural dialogue through education, science, culture, and communication. UNESCO addresses various global challenges, including the issue of unequal development and the concerns of the Third World (developing countries). Here's a closer look at these concepts:

Unequal Development: Unequal development refers to the uneven distribution of economic, social, and technological progress among countries and regions worldwide. It highlights the disparities in income, infrastructure, access to resources, education, healthcare, and other aspects of development. UNESCO recognizes that such inequalities hinder social cohesion, exacerbate poverty, and impede sustainable development. The organization strives to address these disparities and promote more equitable and inclusive development through its programs and initiatives.

Third World Concerns: The term "Third World" originated during the Cold War era to describe countries that were not aligned with either the capitalist bloc (First World) or the communist bloc (Second World). These countries were predominantly located in Asia, Africa, and Latin America and were characterized by their economic challenges, high poverty rates, and struggles for political independence. UNESCO has been particularly attentive to the concerns of these Third World countries and has aimed to address their specific challenges in education, science, culture, and communication.

UNESCO's Efforts: UNESCO has undertaken various initiatives to address the issues of unequal development and Third World concerns. These include:

Education for All: UNESCO has been a leading advocate for providing quality education to all people, regardless of their socioeconomic status or geographic location. The organization promotes inclusive education policies and works to improve access to education, particularly in marginalized and disadvantaged communities.

Science and Technology for Development: UNESCO recognizes the importance of science and technology in driving sustainable development. It supports capacity-building in scientific research and innovation, particularly in developing countries, to address local challenges and contribute to global knowledge.

Cultural Diversity: UNESCO emphasizes the preservation and promotion of cultural diversity as a means of fostering social cohesion and sustainable development. It encourages the protection of cultural heritage, the revitalization of indigenous languages and traditions, and the promotion of cultural industries in developing countries.

Communication and Information: UNESCO advocates for equitable access to information and communication technologies, as well as the promotion of media freedom and pluralism. It supports media development in developing countries, enabling them to participate in the global communication landscape and have their voices heard.

Through these efforts and various programs, UNESCO aims to bridge the gap between developed and developing countries, address the concerns of the Third World, and promote a more equitable and sustainable world. The organization recognizes the importance of inclusive development, cultural diversity, and equal access to education, science, and communication in achieving these goals.

The terms "North-South" and "Rich-Poor" are used to describe global economic and development disparities between different regions and countries. Here's a brief explanation of these concepts:

North-South Divide: The North-South divide refers to the economic and developmental differences between the countries in the northern hemisphere (primarily developed countries) and those in the southern hemisphere (primarily developing countries). The divide is based on factors such as income

levels, technological advancements, infrastructure, education, healthcare, and overall quality of life. Generally, countries in the North are considered more developed, with higher levels of industrialization and greater access to resources, while countries in the South face challenges related to poverty, underdevelopment, and limited access to resources and opportunities.

Rich-Poor Gap: The rich-poor gap refers to the stark disparities in income and wealth distribution within countries or between different segments of the population. It highlights the significant economic inequalities where a small percentage of the population possesses a large share of wealth and resources, while a significant portion of the population struggles with poverty and limited access to basic necessities. The rich-poor gap can have various social, economic, and political consequences, including social unrest, reduced social mobility, and hindered sustainable development.

These concepts are often interconnected, as the North-South divide contributes to global inequalities, and the rich-poor gap exists within both developed and developing countries. Factors such as historical legacies, colonialism, globalization, resource distribution, governance, and international economic systems play a role in perpetuating and widening these disparities.

Addressing these disparities requires concerted efforts at various levels, including international cooperation, policy reforms, sustainable development initiatives, poverty reduction programs, education and skill development, inclusive economic policies, and social safety nets. The goal is to create a more equitable and just world, where resources, opportunities, and benefits of development are shared more equally among nations and individuals.

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Exploring the Different Types of Communication: A Comprehensive Overview

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Abstract

This research provides a comprehensive examination of the various types of communication, including verbal, nonverbal, visual, and written communication. It delves into interpersonal, group, and mass

communication, highlighting their characteristics, significance, and applications. The study emphasizes the importance of effective communication skills in personal, social, and business contexts and explores the distinctions between spoken and written communication, as well as personal, social, and business communication. Additionally, it discusses intra-personal communication, interpersonal communication, and group communication, elucidating their roles in self-reflection, relationship building, and collaborative efforts. The research concludes by emphasizing the need for individuals to understand and adapt to different communication contexts for successful interactions and mutual understanding.

Keywords: communication types, verbal communication, nonverbal communication, visual communication, written communication, interpersonal communication, group communication, mass communication, personal communication, social communication, business communication, intra-personal communication, effective communication skills.

Introduction: Communication is the process of exchanging information, ideas, and emotions between individuals or groups. It is an essential aspect of human interaction and plays a vital role in various personal, professional, and social contexts. There are several types of communication, including:

Verbal Communication: Verbal communication involves the use of spoken or written words to convey messages. It includes face-to-face conversations, phone calls, presentations, speeches, interviews, emails, letters, and other forms of written communication. Verbal communication allows for direct interaction and immediate feedback.

Nonverbal Communication: Nonverbal communication involves the use of gestures, facial expressions, body language, posture, eye contact, and other nonverbal cues to convey meaning. It often complements verbal communication and can convey emotions, attitudes, and intentions. Nonverbal communication is particularly significant in situations where language barriers exist or when people are unable to communicate verbally.

Visual Communication: Visual communication utilizes visual elements such as graphs, charts, diagrams, photographs, videos, and other visual aids to convey information and ideas. It is effective in presenting complex data, illustrating concepts, and enhancing understanding. Visual communication is widely used in presentations, advertisements, educational materials, and multimedia platforms.

Written Communication: Written communication involves the use of written words to convey information and ideas. It includes formal documents, reports, memos, emails, letters, text messages, and other written forms. Written communication allows for precise and permanent records of information, and it is often used for official and professional purposes.

Interpersonal Communication: Interpersonal communication occurs between individuals or small groups in personal or social settings. It involves direct face-to-face interaction, active listening, and mutual exchange of information and ideas. Interpersonal communication plays a crucial role in building relationships, resolving conflicts, and maintaining social connections.

Group Communication: Group communication refers to the exchange of information and ideas within a group or team. It involves multiple individuals interacting and sharing their perspectives, opinions, and

knowledge. Group communication can occur in meetings, brainstorming sessions, collaborative projects, and group discussions.

Mass Communication: Mass communication involves the transmission of messages to a large and diverse audience through mass media channels such as television, radio, newspapers, magazines, websites, and social media platforms. It allows for the dissemination of information to a wide range of people simultaneously and influences public opinion and behavior.

Effective communication skills are vital for successful interactions in various contexts. Understanding the different types of communication and knowing how to adapt to specific situations can help individuals convey their ideas clearly, build relationships, resolve conflicts, and collaborate effectively.

Spoken and written communication, as well as personal, social, and business communication, are different types of communication that serve specific purposes. Here's a breakdown of each:

Spoken Communication:

Spoken communication involves the use of spoken words and vocal cues to convey information and ideas.

It includes face-to-face conversations, phone calls, video conferences, presentations, speeches, and informal discussions.

Spoken communication allows for immediate feedback, tone of voice, facial expressions, and gestures, which help convey emotions and nuances.

It is more interactive and dynamic compared to written communication.

Spoken communication is commonly used in personal, social, and business contexts, facilitating direct and real-time interaction.

Written Communication:

Written communication involves the use of written words and symbols to convey information and ideas.

It includes emails, letters, reports, memos, text messages, articles, and other written forms.

Written communication allows for precise and permanent records of information.

It lacks the immediate feedback and nonverbal cues present in spoken communication but offers the advantage of careful formulation and documentation.

Written communication is widely used in business settings, formal communication, academic contexts, and official documentation.

Personal Communication:

Personal communication refers to interactions between individuals in their personal lives, such as conversations with family, friends, and acquaintances.

It includes informal conversations, sharing personal experiences, emotions, opinions, and maintaining personal relationships.

Personal communication is characterized by a certain level of familiarity, closeness, and informal language.

Social Communication:

Social communication encompasses interactions in social settings, such as casual conversations, group discussions, and interactions at social events.

It involves communicating with a broader network of people, including acquaintances, colleagues, and individuals within a community or society.

Social communication often serves the purpose of building connections, exchanging information, and engaging in social activities.

Business Communication:

Business communication refers to interactions within a professional or business context.

It includes communication between employees, employers, clients, customers, and stakeholders.

Business communication can be both formal (e.g., official emails, reports, presentations) and informal (e.g., team meetings, brainstorming sessions).

It aims to convey information clearly, facilitate decision-making, establish professional relationships, negotiate deals, and achieve business objectives.

Understanding the distinctions between these types of communication is essential for effective communication skills and adapting to different contexts and audiences.

In addition to spoken and written communication, there are other types of communication that involve different levels of interaction and participants. These include intra-personal communication, interpersonal communication, and group communication. Here's an overview of each:

Intra-personal Communication:

Intra-personal communication refers to communication that takes place within an individual's own mind or self.

It involves internal thought processes, self-reflection, and self-talk.

Intra-personal communication helps individuals process information, make decisions, evaluate experiences, and develop self-awareness.

It is crucial for personal growth, self-expression, and understanding one's own thoughts, feelings, and beliefs.

Interpersonal Communication:

Interpersonal communication occurs between two or more individuals in a face-to-face or one-on-one setting.

It involves the exchange of information, ideas, emotions, and opinions between people.

Interpersonal communication focuses on building relationships, sharing experiences, expressing empathy, and engaging in active listening.

It plays a vital role in personal interactions, friendships, family relationships, romantic relationships, and professional collaborations.

Group Communication:

Group communication involves communication among three or more individuals who come together for a common purpose or goal.

It occurs in various settings, such as work teams, committees, social groups, and community organizations.

Group communication emphasizes the exchange of information, coordination of efforts, decision-making, problem-solving, and collective goal achievement.

It requires effective collaboration, active participation, and communication skills like listening, negotiation, and conflict resolution.

Each type of communication has its unique dynamics and objectives. Intra-personal communication focuses on self-reflection and internal dialogue. Interpersonal communication is centered around building relationships and exchanging information with others on a personal level. Group communication, on the other hand, involves communication within a larger collective with shared goals and responsibilities.

Understanding and developing proficiency in intra-personal, interpersonal, and group communication are essential for effective communication in various personal, social, and professional contexts. These skills contribute to self-awareness, relationship building, teamwork, and overall communication competence.

Conclusion: Effective communication is a vital aspect of human interaction, and understanding the various types of communication is crucial for successful interactions in different contexts. Verbal communication, nonverbal communication, visual communication, and written communication each serve specific purposes and possess distinct characteristics. Moreover, personal, social, and business communication require individuals to adapt their communication styles accordingly. Additionally, intra-personal communication, interpersonal communication, and group communication play essential roles in self-reflection, relationship building, and collaborative efforts. Developing proficiency in these communication types enhances communication competence and fosters meaningful connections in personal, social, and professional spheres.

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Review on Chewable Tablets

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Abstract

As a dosage form, chewable tablets have the advantages of conventional tablets in terms of **manufacturability, dosing accuracy, portability, and long-term stability**. Chewable tablets are easily broken and chewed in between the teeth before ingestion. These tablets are given by doctors to the children who have difficulty in swallowing and to the adults who dislike swallowing. These tablets are disintegrate smoothly at a moderate rate in the mouth, characteristically chewable tablets build smooth texture upon disintegration, are pleasant tasting and leave no bitter or unpleasant taste. Pediatric patients and travelling patients who may not able to access water are most need of easy swallowing dosage forms like chewable tablets.

The chewable tablet consists of gum core, which may or may not be coated. The central core is composed of an insoluble gum base like waxes, antioxidants, sweeteners, flavouring agents. The percentage of gum base Components varies from 30-60% depending upon the base used and its properties. A flavouring agent is included to make it more palatable. The major formulation factors are flow, lubrication, disintegration, organoleptic properties, compressibility, compatibility and stability. A developer may use one or more approaches to arrive at a combination of formula and process that result in product with good organoleptic properties. Such a substance must have acceptable flow, compressibility and stability characteristics.

Keywords: chewable tablet, central gum core, Insoluble, antioxidant, stability, compressibility etc.

1. Introduction

Chewable tablets are easily broken and chewed with teeth before ingestion. These tablets are given to the children who have difficulty in swallowing and to the adults who dislike swallowing. [1] These tablets are disintegrate smoothly at a moderate rate in the mouth, characteristically chewable tablets build smooth texture upon disintegration, are pleasant tasting and leave no bitter or unpleasant taste. Good Chewable tablet formulation development involves the careful selection of ingredients in order to manufacture a solid dosage form. Choosing the appropriate excipient to perform a specific function in a tablet formulation such as disintegration or lubrication can be critical to achieving acceptable manufacturing performance. Sweeteners, both naturally occurring and synthetic are one type of functional excipient commonly used in chewable tablet formulations to mask the unpleasant tastes and facilitate pediatric dosing. [2,3] Ideally upon chewing, they are broken down in the mouth and release their ingredients in the process and therefore, do not have much lag time as required for the disintegration of tablets before absorption from stomach. [4] Chewable tablet are often employed when the active ingredient is intended to act in a localized manner rather than systemically. Chewable tablet is one that is palatable and may be chewed and ingested with little or no water. Manufacturing is generally done using either wet granulation process or direct compression. Increasingly, micronized and submicron forms of therapeutically and physiologically active substances are incorporated into tablet formulation to take advantage of the enhanced absorption characteristics of these forms. [5] They are also used in the administration of antacids and carminatives. Mannitol is widely used as an excipient in chewable tablet for its non-hygroscopic nature for moisture sensitive drugs. As we know difficulty in swallowing (Dysphasia) is common among all age groups, especially in elderly and in also seen of swallowing of conventional tablets and capsules. Pediatric patients and travelling patients who may not have ready access to water are most need of easy swallowing dosage forms like chewable tablets. The composition of chewable tablet consists of gum core, which may or may not be coated. The core is

composed of an insoluble gum base like waxes, antioxidants, sweeteners, flavouring agents. The percentage of gum base varies from 40-60% depending upon the base used and its properties. A flavouring agent make it more palatable.

1.1 Advantages of Chewable Tablets

Chewable tablet have some specific advantages:

- Better bioavailability through bypassing disintegration (that increase dissolution)
- Improved patient acceptance (especially pediatric) through pleasant taste
- Patient convenience; need no water for swallowing
- Possible to use as a substitute for liquid dosage forms where rapid onset of action is needed
- The large size of the dosage form is difficult to swallow. In such cases chewable tablet offers advantages over it
- Effectiveness of therapeutic agent is improved by the reduction in size that occurs during mastication of tablet before swallowing

1.2 Disadvantages of Chewable Tablets

There are, of course some limitations to the use of chewable tablets having bad tasting drugs and extremely high dosage level. Some common disadvantages of chewable tablet are:

- It contains sorbitol which causes diarrhoea and flatulence.
- Flavouring agents present in chewable tablet may causes ulcer in oral cavity
- Prolonged chewing of chewable tablet results in pain in facial muscles
- They are hygroscopic in nature, so must kept in dry place
- They show the fragile, effervescence granules property Since these tablets have insufficient mechanical strength, so careful handling is required
- They require packaging for safety and stabilization of stable drugs

2. General Formulation Factors

Various factors involved in the formulation of chewable tablets. The major formulation factors are flow, lubrication, disintegration, organoleptic properties, compressibility, compatibility and stability, which are common to regular (swallowed) and chewable tablets. A formulator may use one or more approaches to arrive at a combination of formula and process that result in product with good organoleptic properties. Such a substance must have acceptable flow, compressibility and stability characteristics.

2.1 Taste and Flavours

There are four basic type of taste; salty, sour, sweet and bitter. Salty or sour tastes cause ionizing the solution. Many organic medicinal compounds stimulate a bitter response even though they may not be capable of ionizing in an aqueous medium. Most disaccharides and some aldehydes and few alcohols give a sweet taste. The term flavour generally refers to a specific combined sensation of taste and smell. For example, sugar has a sweet taste, but no flavour, whereas honey has a sweet taste and a characteristics smell.

2.2 Aroma

Pleasant smells are generally referred to as aromas. For example, a well formulated, orange-flavoured chewable tablet should have a characteristic sweet and sour taste and aroma of fresh orange.

2.3 Mouth-feel

This term is related to the type of sensation or touch that a tablet produce in the mouth upon chewing. As such, it has nothing to do with chemical stimulation of olfactory nerves or taste buds. However, for a formulation to be successful, the overall effect in the mouth is important. In general, gritty (e.g., calcium carbonates) or gummy texture is undesirable, whereas soothing and cooling sensation (e.g., mannitol) with smooth texture is preferred.

3. Assessment of the Problems Regarding Formulation

Wherever feasible and practical, the first step in the formulation of chewable tablet is to obtain a complete profile of the active drug. This usually leads to the most efficient formulation of a stable and quality product as the drug usually dictates the choice of fillers, carriers, sweeteners, flavour compounds and other product modifiers. The drug profile ideally should contain information on the following:

3.1 Physical Properties

- Colour
- Odour
- Taste
- Mouth-feel
- Physical form: crystal powder, amorphous solid, oily liquid, etc.
- Melting temperature
- Polymorphism
- Moisture content
- Aqueous solubility
- Active drug stability
- Compressibility

3.2 Chemical Properties

- Chemical structure and chemical class
- Major reactions
- Major incompatible compounds
- Drug dose

This active drug profile would eliminate potentially incompatible excipients, flavours and leading the use of excipients that would best compliment the drug physically, chemically and organoleptically. The choice of excipients and other product modifiers would involve balancing their cost with their functionality. The use of low-caloric and non sugar based excipients may represent a marketing advantage, especially with consumers concerned about caloric intake and dental caries.

4. Need for the Development of Chewable Tablet

The need for non-invasive delivery systems persists due to patients' poor acceptance of, and compliance with, existing delivery regimes, limited market size for drug companies and drug uses, coupled with high cost of disease management.

4.1 Patient Related Factors

Approximately one-third of the patients need quick therapeutic action of drug, resulting in poor compliance with conventional the drug therapy which leads to reduced overall therapy effectiveness. A new dosage form, the immediate release tablets has been developed which offers the combined advantages of ease of dosing and convenience of dosing. Chewable dosage forms are particularly suitable for patients, who for one reason or the other; find it inconvenient to swallow traditional tablets and capsules with an 8-oz glass of water.

- Very elderly patients who may not be able to swallow a daily dose of antidepressant

4.2 Effectiveness Factors

Increased bioavailability and faster onset of action are a major claim of these formulations. Any pre-gastric absorption avoids first pass metabolism and can be a great advantage in drugs that undergo a great deal of hepatic metabolism. Furthermore, safety profiles may be improved for drugs that produce significant amounts of toxic metabolites mediated by first-pass liver metabolism and gastric metabolism.

5. Taste [6, 7, 8, 9]

There are generally four fundamental of taste:

- Sweet and salty, mainly at the tip of tongue
- Sour, at the side of tongue
- Bitter, at the back of the tongue

Generally Human tongue contains 60-100 taste buds. Chemical from foods or orally ingested medicaments are dissolved by saliva via taste pores. They either interact with surface proteins known as taste receptors or ion-channels. These interactions cause electrical changes within the taste cells that trigger them to send chemical signal translate into neurotransmitters to the brain. Salt and sour responses are of channel type responses, while sweet and bitter are surface protein responses. Electrical responses, that send the signal to the brain, are result of varying concentration of changed atoms or ions within the taste cell. These cells normally possess negative charge. Tastants alter this taste by using varying means to increase the concentration of positive ions within taste cell. This depolarization cause taste cells to release neurotransmitters, promoting neurons connected to the taste buds to send electrical messages to the brain. In the case of bitter taste drug by binding to GPCR on the surface of the taste cell, prompts the trimeric protein subunit of alpha, beta and the gamma to split and activate enzyme. This enzyme then converts precursor within the cell into "second messenger". The second messenger causes the release of calcium ions from endoplasmic reticulum of the taste cell. The resulting build-up of calcium ion cells lead to depolarization and neurotransmitter release. The signals give a sense which is interpreted as bitter taste. Effective blocking of taste receptors can be accomplished by either

coating the surface pore or competing with the channel themselves to reduce the effect of bitter stimuli.

5.1 Taste Masking

Taste masking is defined as a reduction of undesirable taste that would otherwise exist. Taste masking can be achieved using taste masking agents, specific flavours and sweeteners. Sweeteners are essential to complete the experience and produce a pleasant taste of the product. This is one of the major limiting factors in the formulation of oral dosage forms having unpleasant taste. Flavour masking and processing approaches are two primary methods to overcome this problem. Flavour masking generally include addition of flavour, sweetener, lipid and acids.

5.2 Techniques for Taste Masking

Before formulation some common problems encountered: undesirable taste, bad mouth-feel. The desired product should prevent or minimize stimulation of the taste buds, contain a suitable flavour and sweetener and achieve good mouth feel and compressibility. The following techniques are used to solve these problems;

- Coating by Wet granulation
- Microencapsulation
- Solid dispersions
- Adsorbate Formulation techniques (Solvent method)
- Ion Exchange
- Spray congealing and spray coating
- Formation of different salts or derivatives
- Use of amino acids and protein hydrolysates
- Inclusion complexes
- Molecular complexes

6. General Excipients Used In the Formulation of Chewable Tablets

Special consideration, however, needs to be given to those materials that form the basis for chewable tablet formulation. The acceptability in the formulation of chewable tablets will be primarily determined by taste and to a lesser degree, appearance. Therefore, appropriate selection and use of components that impact on these properties are of extreme importance. Of course, the formulator must not become as concerned with these properties as to lose sight of other pharmaceutical and biomedical considerations; the resultant product must be as pure, safe, efficacious, and stable as any other. The wet granulation, dry granulation, direct compression and direct compaction processes are as applicable to chewable tablets as to any other type of tablet. The concern such as moisture content and uptake, particle size distribution, blending and loading potentials, flow and compressibility is no less important, and must be addressed by the formulation/process development pharmacist as for any product. However, in the case of chewable, the new concerns of sweetness, chew-ability, mouth-feel and taste must also be considered. Major excipients, such as fillers or direct compaction vehicle have the major role in the outcome of these concerns; process, a lesser (but certainly not minor) role. Many of the sweeteners are commonly used in the tablet formulation are especially applicable for use in chewable tablets due to their ability to provide the necessary properties of sweetness and chew-ability. In general

these all excipients fall under the sugar category, although a combination of bland excipients with artificial sweeteners may provide a satisfactory alternative. Some common chewable tablet sweeteners are Brown sugar, Compressible sugar, Honey, Dextrose/fructose, Lactose, Mannitol, Sorbitol. Few of them need further explanation as follows:

6.1 Sweeteners

Dextrose

Dextrose is the sugar obtained through the complete hydrolysis of starch. Its sweetness level is approximately 73% that of sucrose, and is available in both anhydrous (but hygroscopic in nature) and monohydrated form.

Lactose

Lactose is the monosaccharide that produced from whey, a byproduct of the processing of cheese. Although generally acknowledged as the most widely used pharmaceutical excipient in the world. Its applicability to chewable tablets is minor at best, due to its extremely low sweetness level (13% sucrose). This deficiency requires the addition of an artificial sweetener of sufficient potency to overcome lactose's blandness. For wet granulation applications, regular pharmaceutical grades (hydrous fine powders) are available. For direct compression, an anhydrous powder having good flow and compressible characteristics is available as lactose.

Mannitol

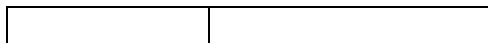
Mannitol is a white, crystalline polyol approximately 55% as sweet as sucrose. It is freely soluble in water and, when chewed or dissolved in the mouth, imparts a mild cooling sensation due to its negative heat of solution. This combined with an exceptionally smooth consistency has made mannitol the excipient of choice for chewable tablet formulations.

Sorbitol

Sorbitol is slightly sweeter and considerably more hygroscopic isomer of mannitol. For direct compression, it is available commercially as Sorb-Tab and crystalline Tablet Type.

Table 1.1: Relative Sweetness of different Sweeteners

Materials	Relative sweetness
Aspartame	206
Saccharins	445
Glycyrrhizin	45
Sucrose	0.9
Sorbitol	0.4-0.6
Mannitol	0.6-0.7
Dextrose	0.6
Maltose	0.4
Fructose	1.5
Lactose	0.2



6.2 Flavouring Agents

From the perspective of consumer acceptance, taste is almost certainly the most important parameter of the evaluation of chewable tablets. Taste is a combination of the perceptions of mouth-feel, sweetness and flavour. Mouth-feel is affected by heat of solution of the soluble components, smoothness of the combination during chewing and hardness of the tablet. These factors are directly and almost entirely related to the active ingredient and major excipients. Sweetness, at an appropriate level, is a necessary background to any flavour. The primary contributors to sweetness in a chewable tablet are the drug, natural sweeteners and artificial sweetness enhance that may be incorporated in the formulation. Flavouring agents are available in a variety of physical forms from a large number of suppliers specializing in these materials. Virtually all offer technical support services, which will be addressed in the section on flavour formulation. Various forms available include water-miscible solutions, oil bases, emulsions, dry powders, spray-dried beadlets, and dry adsorbates. A typical flavour having the capability of producing several hundred combinations for a given application.

Flavour Selection and Formulation

Initially, the inherent taste of the active drug must be evaluated to determine its probable contribution to the formulation and a final decision must be made relative to formulation components that would impact on both the pharmaceutical properties and organoleptic characteristics of the tablet. Throughout in formulation development, these considerations must be maintained and eventually optimized. The goal must be a baseline formulation having acceptable properties such as hardness, friability, and dissolution, while providing a suitable mouth-feel and sweetness background for flavouring. Having succeeded in the preparation of one or more unflavoured bases, the development pharmacist should next prepare several basic flavoured preferences samples. These should be designed to narrow the flavour focus to one or more groups of flavour preferred by decision makers within the company. Various group of flavours for general baseline taste types are tabulated below in table 1.2:

Table 1.2: Flavour groups for general Baseline taste types

Sweet	Grape, berries, vanilla, honey
Sour (acidic)	Citrus, strawberry, cherry
Salty	Buttery, spice, mixed citrus, mixed fruit
Bitter	Liquorice, wine, mint, nut, grapefruit

6.3 Colour Integration

The final aspect of taste psychology requires that the flavour and colour match. A mismatch may detract from consumer acceptance

Colourants

Colourants are used in the manufacture of chewable tablets for the following reasons:

- To increase aesthetic appeal to the consumer
- To mask non uniform colour of raw materials
- To complement and match the flavour used in the formulation

- To aid in product identification and differentiation

The Food drug and cosmetic Act of 1938 created three categories of the colourants of which only first two are applicable to the manufacture of chewable tablets. These are discussed as follows:

- FD & C colours: These are colourants that are certifiable for use in foods, drugs and cosmetics.
- D & C colours: These are dyes and pigments considered safe for use in drugs and cosmetics when in contact with mucous membranes or when ingested.
- External D & C: These colourants, due to their oral toxicity, are not certifiable for use in products intended for ingestion but are considered safe for use in products applied externally.

Dyes are main colourants used in the manufacture of chewable tablets depending on whether the process of manufacture is by wet granulation or direct compression.

Dyes

These are chemical compound that exhibits their colouring power or tinctorial strength when dissolved in a solvent. They are usually 78 to 87% (rarely 94 to 99%) pure colourant material. Dyes are soluble in propylene glycol and glycerine.

7. Manufacturing

For chewable tablets, manufacturing means proper incorporation of the colouring agent, maintenance of correct moisture content, and achievement of proper tablet hardness. All of these are the routine responsibility of the manufacturer in the department once the parameters have been established during development. The process development and scale up considerations be thoroughly studied in order to ensure the establishment of proper specifications. If colour is added as a lake for direct compression blend, then the blending operation consists of the addition of coloured powder to white granules. So, coloured powder will uniformly coat the white granules. However, during compression, the granules release fresh white material to the surface, resulting in white spots on a coloured background or "speckling".

7.1 Methods of Manufacturing

The Chewable tablets were prepared by using the following methods:

1. Non aqueous Granulation/Dry granulation
2. Aqueous Granulation/Wet granulation
3. Direct compression

Granulation

The process in which primary powder particles are made to adhere to form larger, multi-particles entities called granules. Pharmaceutically granules have size range between 0.3 to 4.0 mm. Granulation is used to improve flow and compressibility of powders and to prevent segregation of the blend components. Granulation is mainly done by using two techniques.

Dry granulation

It is the novel method for semi-automatic production of granules. The method is applicable to any solid dosage pharmaceutical products. Dry granulation method replaces existing solid dosage form

development and manufacturing technologies offering more rapid development and better quality. In this process, the powder mixture is compressed without the use of heat and solvent. Two methods are used for dry granulation. The more widely used is slugging where the powder is recompressed and the resulting tablet are milled to yield the granules.

Wet granulation

Wet granulation is the most commonly used granulation method. This process involves wet massing of powder blend with a granulating liquid, wet sizing and drying. The granulating liquid contains a solvent which must be volatile so that it can be removed by drying and must be non-toxic in nature. Liquid include water, ethanol and Isopropyl alcohol. In the traditional wet granulation method the wet mass is forced through a sieve to produce wet granules which are subsequently dried.

Compression

Compression is the most popular choice because it provides the shortest, most effective and least complex way to produce tablets. This is more suitable for moisture and heat sensitive API's since it eliminates wetting and drying steps and increase the stability of active ingredient by reducing detrimental (harmful) effects. In this process, API mixed with the excipients and lubricant, followed by compression which makes the product easy to process.

8. Application of Chewable Tablets

1. Therapy: Chewable tablet can release substances at a controlled rate over an extended period of time providing a prolonged local effect.

2. Pain: Successful treatment of minor pains, headaches, muscular aches, etc. requires rapid absorption of therapeutic doses of the active substance. Chewable tablet as a drug delivery system could be beneficial in minor pain treatment, when buccal absorption results in fast onset of action and reduces the risk of gastro-intestinal side effects.

3. Systemic Therapy: Chewable tablet provides benefits to systemic drug delivery, especially if the active substance is absorbed through the buccal mucosa.

4. Smoking Cessation: Chewing gum formulations containing nicotine, silver acetate have been clinically tested as aids to smoking cessation.

5. Obesity: Several chewing gum formulations containing caffeine, chromium. Caffeine are central stimulating agents that have proved to increase the metabolic rate.

9. Some Marketed Formulations of Chewable Tablet

Today Chewable Tablet is one of the most popular dosage form, used for delivering the many active components. Some marketed products of chewable tablet are given below in table 1.3:

Table 1.3: Marketed Formulations of Chewable Tablets

S. No.	Brand Name	Active Ingredient	Application
1.	Alzol	Albendazole	Anthelmintic
2.	Montair	Montelukast	Asthma

3.	Lamictal	Lamotrigine	Seizures
4.	Mylanta	Gas Simethicone	Gastric relief
5.	Natecal	D3 Natecal	D3 Osteoporosis
6.	Imodium Advanced	Loperamide Hydrochloride	Anti-diarrhoeal
7.	Claritin	Loratadine	Antihistamine
8.	Tylenol	Acetaminophen	Analgesic

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India's Agro - based Entrepreneurship : Scope and Limitations

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Abstract: Agriculture and entrepreneurship are strongly intertwined. The global population is impacted by the agriculture sector. Agricultural business owners will always be in demand. Agriculture education, research, and dissemination should be based on the principles of innovation, inspiration, and illumination in India, the youngest nation in the world, where more than 65 percent of the population is under 35 and more than 50 percent is under 25. This will help us to guide the entire society. Even if they have the resources required to break into the commoditized part of the industry, those looking to make a living through agriculture can take advantage of the growing trend for locally produced goods, which offers appealing start-up chances. Although land prices can be difficult, the low requirement for high-tech equipment in this type of operation frequently makes it possible for qualified and experienced people to enter this industry, run their own businesses, and create their own marketing strategies. The kids in our country should be given current skills training in order to prevent them from vying for jobs and disqualifying others, which is another significant difficulty. In order to offer solutions, this study focuses on agricultural development techniques and challenges that must be solved. The commercial environment is constantly evolving in the twenty-first century. Many smart young people with original ideas and a desire to work have been drawn to agriculture entrepreneurship as a result of the growth of high-tech business models and the introduction of new technology. These business owners and start-ups can create beneficial connections throughout the agricultural value chain, accelerating and streamlining the delivery of goods, services, and technologies to both farmers and consumers. Plans like Skill Development, Start-up India, Mudra Yojana, and Raftaar are prioritized in order to support this new endeavor.

Keywords: Agriculture, entrepreneurship, skills, innovation.

Introduction:

An entrepreneur is crucial to a nation's economic development. Through innovation, he gathers and utilizes natural and human resources, creating a lot of jobs for the populace or stabilizing the economy. Many educated adolescents with fresh ideas and a desire to work have been drawn to high-tech business models in recent years, which have elevated agriculture from its traditional state and introduced new forms of technologies. These business owners and start-ups can help protect vulnerable connections in the agricultural value chain and speed up the effective delivery of goods, services, and technologies to farmers and consumers. Entrepreneurial decisions and initiatives have a broad impact on society and the economy of a country. They have an impact on the industrial, agricultural, and technological sectors as well as on trade both domestically and internationally. In an economy, there are many different types of development, including economic development, social development, infrastructure development, and

human development. In the process of economic development, an entrepreneur performs his or her function as a catalytic agent. The importance of being an entrepreneur has increased recently every day. In order to encourage more individuals to become entrepreneurs, the Government of India and its partner organizations have developed a number of promotional and development programs for entrepreneurship, marketing, and export growth. Thus, an entrepreneur makes every effort to promote economic growth, the creation of jobs, social stability, the earning of foreign exchange, the promotion of exports and the replacement of imports, the development of special economic zones, the earning of foreign exchange, and regional development, all of which can quicken the process of balancing and maintaining economic stability. According to Joseph A. Schumpeter. "A nation's rate of innovation, which in turn depends on the distribution of entrepreneurial talent in the population, determines its rate of economic advancement."

The businessperson is always prepared to seize any beneficial possibilities. He or she spots chances, seizes them, and launches new services in the international market. Because creativity is a precondition for innovation and may be cultivated in anyone where there is a concern for perfection, we can say that an innovator is a creative person. The entrepreneur's resource mobilization efforts enable the nation's resources to be used more effectively, which accelerates economic growth.

Agriculture workers are gradually coming to the realization that they cannot completely rely on the government. The need for self-determination exists. Furthermore, conventional farming practices and an excessive reliance on traditional crops won't be sufficient in light of the evolving global agricultural environment brought on by the WTO round of discussions. There are many chances to promote entrepreneurship in agriculture and associated businesses. There is a lot of potential for agricultural output in agriculture, dairy farming, beekeeping, mushroom farming, fisheries, and other related areas. Additionally, Farmers should search for associated cottage industries like those producing tomato sauce, squash, jam, and jaggery. The whole human population of the planet is impacted by the global industry of agriculture. Agricultural businesses will undoubtedly always be needed.

India is the youngest nation in the world, with more than 65 percent of the population under 35 and more than 50 percent of the population under 25. This presents a significant challenge for the youth, who must be trained in modern skills so that they do not simply seek out jobs but rather create new ones. Today, there is a lot of talk about entrepreneurship and skill development, and youths are encouraged to start their own businesses through programs like Skill Development, Start-up India, Mudra Yojana, and Raftaar. Since we live in the twenty-first century, changes in the market's appearance occur daily. Here are a few prospective fields for agriculture entrepreneurship:

Business with honey:

A box costs roughly 4,000 rupees, so if you take five of them, the initial phase will cost you 20,000 rupees. You can begin with five colonies (five boxes). They can occasionally be separated to grow their population. A year can be used to prepare 20,000 thousand boxes if partitioning is done correctly. The Department of Horticulture provides 40 to 50 percent of the money under the National Agricultural Development Scheme. Farmers receive instruction in this area as well. Additionally, the farmers are not required to increase their economic outlay.

Cultivating mushrooms:

There are several opportunities for selling and producing mushrooms. Due to its great nutritional content, which includes protein, carbs, mineral salts, and vitamins, mushrooms are utilized in our country as both food and medicine. To encourage the growing of mushrooms, agricultural universities and other educational institutions hold training sessions for farmers throughout the year.

Food Processing:

The term "food processing industry" describes processes and additions to main agricultural goods. For instance, the industry of food processing includes the processing of dairy goods, milk, fruits, vegetables, packaged foods, and beverages. The food processing business in India plays a significant role in western nations in terms of creating jobs, raising farmer incomes, satisfying consumer demand quickly, and supplying the nation's food needs. This area is being considered as a prospective industry because it would not only assist the agricultural sector flourish but will also be good for nutrition.

Micro Irrigation System

There are enormous prospects because micro-irrigation system manufacturing and trading are also feasible on a small scale.

Agro-Eco Excursion

Agro-eco tourism can be boosted by the creation of aesthetic gardens, woodland areas, and agri-expos.

Marketing and Production of Organic Fertilizer

Production and commercialization of biofertilizers can be done relatively simply and for little money.

Plant Production for Medicine

People have a great entrepreneurial opportunity with the growing of therapeutic plants.

The growing popularity of natural treatments and their development by pharmaceutical firms are the causes of this. They will require raw resources in the form of pharmaceutical plant products for this.

These producers are able to fill this need.

Spices and Herbs

Herbs and plant components can be used to enhance food flavor or for medical purposes. Your potential consumers can employ the fragrant qualities of herbs in perfumes, food, and medicine. Being a herb farmer enables you to provide doctors from other fields, including those who practice pharmaceutical, cosmetic, and even herbal medicine, with raw materials (your herbs).

Internet Extension

The use of ICTs for agricultural and rural extension is known as "cyber extension." The use of the internet is seldom noticeable in rural areas. A breakthrough in the agriculture sector's development may result from workers, institutions, and farmers working together at the fastest possible rate. Agriculture To enable farmers to use the information for a better economy, cyber extensions can be created to transfer the science of scientific agriculture to them.

Dairy Goods

India is now the world's greatest milk producer thanks to the Amul model's effective implementation, which comprises activities for milk production and its processing for retail sale. Both the public and private sectors of this industry offer employment opportunities. Through Anand Milk Union Ltd., Dr. Kurien demonstrated how millions of unorganized milk woman associations may become prosperous businesses. Dairy may generate a lot of cash if it is handled more professionally, with excellent local branding and true quality assurance.

Unit of Farm Equipment

Customized farm machinery equipment is desperately needed. Traditional farming tools, for instance, cannot be used on the hills due to the topography. Here, we require compact, lightweight, and reliable farm machinery and equipment. New graduates in agricultural engineering may develop such units.

the development of fishing

Both the domestic and export markets benefit greatly from the fishing industry. Entrepreneurial initiatives can be quite beneficial in this direction.

Floristry marketing

The future of India's economy is in floriculture. If efforts continue, the level of development in the area will be unprecedented. Marketing for floriculture presents a plethora of chances for business development. The choices are endless; they include flower stores, wholesale trading, electronic retailing, and so forth.

Entrepreneurial endeavors in floriculture have frequently produced astounding outcomes. The Ferns N' Petals are one illustration of this. Ferns N' Petals began as a little flower shop in New Delhi's Greater Kailash neighborhood. It developed into the first branded internet chain of corporate and wedding flower decorators because of its entrepreneurial efforts and successful branding strategy.

Organic Food Chain Production

In India, the food processing sector is already generating significant revenue. The market is ready for organic food. The biggest winners will be the pioneers. To put it simply, organic

Production of Essential Food

The production of staple foods is one of the most lucrative forms of agriculture. Because they are frequently consumed, crops including rice, potatoes, wheat, and corn are considered staple foods. in agriculture. You can meet the demands of your community by producing big or moderate amounts of staple foods area. The truth is that many people enjoy these meals around the world, and you can additionally export to other nations.

Farming of greens

We consume a lot of vegetables in our regular diet. Due to their high nutritional value and the significance of making healthy meals, vegetables are used in soups, salads, sauces, and sandwiches. Vegetable farming doesn't need a lot of money because you may start a plantation in your backyard and sell your produce to neighbors.

Numerous curriculum programs at the university and college level now include entrepreneurship as a subject to help students develop their entrepreneurial abilities because they recognize the importance of entrepreneurs for economic growth and development.

Issues Entrepreneurs Face

Entrepreneurs envision an innovative idea and develop it into a business strategy. They then acquire resources like land, labor, and capital and produce goods and services with the assistance and support of outside sources, which can have an impact on the success of innovation. The economic environment is uncertain, according to Schumpeter, and entrepreneurship is essential in this sense because growth is an unsatisfying process that results in self-determination. The entrepreneur frequently mobilizes capital sources to preserve control over the factors of production. Schumpeter was right when he said that entrepreneurs require credit because it promotes economic expansion, which leads to the production of new goods.

Business Selection: To choose a business, a marketer must first determine whether the customer will enjoy his product or service, how much demand there will be, what the cost will be, and whether it will be profitable or not. It is given as a probability report or project report and is known as a probability study. On the basis of this, the most lucrative company is chosen.

Choosing the type of business to launch: The entrepreneur has the option of a sole proprietorship, partnership, joint capital company, etc. for this, from which it might be challenging to select the best

business structure. If a company structure is best for large enterprises, a sole proprietorship or partnership will be more appropriate for small businesses.

The entrepreneur has always had trouble arranging financing. Without money, no firm can get off the ground. The business owner requires money to purchase land, buildings, machinery, equipment, and other long-term assets. Money is also necessary for a business's ongoing costs.

The entrepreneur must secure financing from sources after assessing the amount of capital needed different sources. Many financial institutions, including IFCI and others, are supplying the first capital or money from venture capital for successful entrepreneurship.

Choosing a Site: The entrepreneur faces a challenge while choosing a location for the company unit. It is dependent on a variety of fundamentals, including the availability of raw materials, transportation options, access to electricity and water, and proximity to the market.

Unit Size: A number of factors, including technical, financial, and marketing issues, have an impact on the size of the company. Entrepreneurs can begin their operations on a wide scale whenever they believe they can successfully sell the goods and services they are offering in the market and raise enough money. Entrepreneurs typically have the option of beginning their activity on a modest scale and progressively expanding it.

Tools for Agriculture and Machines: Prior to beginning any new project, choosing the right tools, equipment, and techniques can be a tricky task. This is impacted by a variety of variables, such as product choice, resource availability, and manufacturing process design. However, production ought to come first. It's critical to take into account the accessibility of repair and maintenance services, additional funding, and post-sale support.

Appropriate Manpower: If a company is huge, it must locate qualified individuals who are suited for a variety of jobs. He needs to find the best person for each job and inspire them to work for the company. It is not simple. It takes a lot of endurance and inspiration. In this approach, the business owner must come up with numerous options before starting a new venture. By making the right choices and arrangements, success is assured.

In an economy, there are many different types of development, including economic development, social development, infrastructure development, and human development. We can state that an entrepreneur plays his or her part as a catalyst in the process of economic development given that, in the modern era, the entrepreneur's role has grown steadily through time.

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Customer satisfaction towards the service of IndusInd bank

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Abstract:

This study examines customer satisfaction towards the service provided by IndusInd Bank, one of the leading banking institutions in India. The objective is to understand the factors influencing customer satisfaction and the overall perception of the bank's services. A mixed-methods approach was employed, combining quantitative data from a survey with qualitative insights gathered through interviews. The survey collected responses from a sample of IndusInd Bank customers, assessing their satisfaction levels across various service dimensions such as responsiveness, reliability, convenience, and personalization. The findings reveal the key determinants of customer satisfaction and highlight areas where the bank can improve its service offerings. The study contributes to the existing literature on customer satisfaction in the banking sector and provides valuable insights for IndusInd Bank and other financial institutions aiming to enhance customer satisfaction.

Keywords: Customer satisfaction, service quality, IndusInd Bank, banking sector, responsiveness, reliability, convenience, personalization, survey, interviews, service dimensions, India, financial institutions.

Introduction:

Customer satisfaction is a critical factor in the success and sustainability of any business, especially in the highly competitive banking sector. IndusInd Bank, a prominent financial institution in India, recognizes the significance of customer satisfaction and strives to provide exceptional service to its customers. Understanding the factors that contribute to customer satisfaction is essential for the bank to meet customer expectations and retain their loyalty.

This introduction aims to explore the topic of customer satisfaction towards the service of IndusInd Bank. It will provide an overview of the importance of customer satisfaction in the banking industry and the specific context of IndusInd Bank's service offerings. Additionally, it will highlight the relevance of studying customer satisfaction in order to identify areas of improvement and maintain a competitive edge in the market.

In recent years, the banking sector has witnessed significant changes and fierce competition. With the advent of technology and the rise of fintech startups, traditional banks like IndusInd Bank have been compelled to adapt their strategies and enhance their service quality to stay relevant. Customer satisfaction has emerged as a crucial performance indicator for banks, as it directly influences customer loyalty, word-of-mouth referrals, and overall business growth.

IndusInd Bank has established itself as a key player in the Indian banking industry, offering a wide range of services and products to its customers. These services include savings and current accounts, loans, investment opportunities, credit cards, and personalized banking solutions. To ensure a high level of customer satisfaction, IndusInd Bank has implemented various initiatives, such as dedicated customer service channels, digital banking platforms, and innovative service delivery methods.

Studying customer satisfaction towards the service of IndusInd Bank can provide valuable insights into the effectiveness of these initiatives and help identify areas where improvements can be made. By understanding customer perceptions, preferences, and expectations, the bank can align its strategies and allocate resources more efficiently to enhance customer experiences.

PRISM Analysis :

P - Political Factors:

Government Regulations: The banking sector in India is subject to various regulations and policies set by the government. IndusInd Bank needs to ensure compliance with these regulations, which can impact its service offerings and customer satisfaction.

R - Regulatory Factors:

Reserve Bank of India (RBI) Guidelines: The RBI sets guidelines and standards for banks to maintain transparency, security, and fair practices. Adhering to these guidelines is crucial for IndusInd Bank to gain customer trust and ensure satisfaction.

I - Industry Factors:

Competitive Landscape: The banking industry in India is highly competitive, with numerous players vying for market share. IndusInd Bank needs to differentiate itself through superior service quality to attract and retain customers.

Technological Advancements: Rapid technological advancements have transformed the banking sector, offering customers convenient services such as mobile banking, online transactions, and digital wallets. IndusInd Bank must stay abreast of technological trends to meet customer expectations and provide seamless services.

S - Social Factors:

Customer Demographics: Understanding the demographics of IndusInd Bank's customer base is crucial for tailoring services to meet their specific needs. Factors such as age, income level, and lifestyle can influence customer preferences and satisfaction.

Changing Customer Expectations: Customer expectations are constantly evolving, driven by factors such as experiences with other service industries and the emergence of new service delivery models. IndusInd Bank needs to stay attuned to these changing expectations and adapt its services accordingly.

M - Market Factors:

Reputation and Brand Image: IndusInd Bank's reputation and brand image play a significant role in shaping customer perceptions and satisfaction. Positive word-of-mouth, media coverage, and public perception can influence customer trust and loyalty.

Economic Conditions: Economic factors, such as inflation, interest rates, and market stability, can impact customer satisfaction. IndusInd Bank needs to navigate these conditions effectively to provide competitive rates, attractive offers, and financial stability to customers.

Conducting a PRISM analysis helps identify the various factors that influence customer satisfaction towards the service of IndusInd Bank. Political, regulatory, industry, social, and market factors all contribute to shaping customer perceptions and experiences. By considering these factors, IndusInd Bank can develop strategies to enhance its service offerings, align with customer expectations, and maintain a competitive edge in the banking sector.

Conclusion:

In conclusion, customer satisfaction is a crucial aspect of IndusInd Bank's operations and success. Understanding customer perceptions and expectations is essential for the bank to provide superior service and maintain a loyal customer base. By conducting a comprehensive study on customer satisfaction towards the service of IndusInd Bank, this research aims to contribute to the understanding

of customer satisfaction in the banking industry and provide actionable insights for the bank's continuous improvement efforts.

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An assessment of Job satisfaction

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Abstract:

This study aims to assess job satisfaction among employees in various industries. Job satisfaction plays a crucial role in determining the overall well-being, productivity, and retention of employees within organizations. By examining factors such as work-life balance, compensation, job security, growth opportunities, and interpersonal relationships, this research provides insights into the determinants of job satisfaction and their implications for individual and organizational success. The study adopts a quantitative research approach, utilizing survey questionnaires to collect data from a diverse sample of employees across different job roles and organizational levels. The findings of this research will contribute to the existing literature on job satisfaction and provide valuable recommendations for organizations to enhance employee satisfaction, engagement, and performance.

Keywords: job satisfaction, employee satisfaction, work-life balance, compensation, job security, growth opportunities, interpersonal relationships, organizational success, employee engagement, employee performance.

Introduction:

Job satisfaction is a critical aspect of employee well-being and organizational success. It refers to the extent to which individuals experience positive emotions and fulfillment from their work. A high level of job satisfaction has been linked to increased productivity, employee engagement, and retention, while low job satisfaction can lead to dissatisfaction, absenteeism, and turnover.

Understanding and assessing job satisfaction is crucial for both employees and organizations. For employees, job satisfaction directly impacts their overall quality of life, motivation, and commitment to their work. It influences their job-related attitudes, such as job involvement, organizational commitment, and job performance. On the other hand, for organizations, satisfied employees are more likely to contribute positively to the achievement of organizational goals, provide quality services, and create a positive work environment.

Assessing job satisfaction involves examining various factors that contribute to an individual's overall satisfaction with their job. These factors can include the nature of the work itself, the work environment, compensation and benefits, growth opportunities, work-life balance, job security, and interpersonal relationships with colleagues and supervisors. By understanding these factors and their impact on job satisfaction, organizations can identify areas for improvement and implement strategies to enhance employee satisfaction and engagement.

PRISM Analysis:

P - People:

The assessment of job satisfaction focuses on employees within various industries. It considers their experiences, perceptions, and emotions related to their work. The study recognizes the importance of understanding the needs and preferences of individuals to create a positive and fulfilling work environment.

R - Relationships:

The research examines the interpersonal relationships between employees, colleagues, and supervisors as a key determinant of job satisfaction. It acknowledges that positive relationships and effective

communication within the workplace can significantly influence employee satisfaction, engagement, and overall well-being.

I - Interests:

The assessment recognizes that employees have different interests, aspirations, and motivations. It acknowledges the significance of aligning individual interests with job roles and providing growth opportunities that cater to employees' professional and personal development. By considering employees' interests, the study aims to identify factors that contribute to higher job satisfaction.

S - Society:

The research acknowledges that job satisfaction extends beyond the individual level and has broader implications for society. Satisfied employees are more likely to contribute positively to their organizations, provide quality services, and contribute to the overall well-being of their communities. By assessing job satisfaction, the study indirectly addresses the societal impact of a satisfied and engaged workforce.

M - Mindset:

The assessment of job satisfaction explores the mindset and attitudes of employees toward their work. It recognizes that employee satisfaction is influenced by factors such as work-life balance, compensation, job security, and growth opportunities. By understanding the mindset of employees, the study aims to identify areas where organizations can make improvements to enhance job satisfaction.

Overall, the assessment of job satisfaction through PRISM analysis takes into account the diverse needs, relationships, interests, societal implications, and mindset of employees. By considering these aspects, the study aims to provide valuable insights into creating a positive work environment, improving employee satisfaction, and fostering organizational success.

Conclusion:

However, the assessment of job satisfaction is crucial for understanding the factors that contribute to employee well-being, engagement, and organizational success. This research has explored the concept of job satisfaction and its determinants across various industries. By examining factors such as work-life balance, compensation, job security, growth opportunities, and interpersonal relationships, the study has provided insights into the key elements that influence job satisfaction.

In conclusion, a thorough assessment of job satisfaction serves as a foundation for organizations to create a work environment that fosters employee well-being, motivation, and commitment. It ultimately leads to a more satisfied and engaged workforce, benefiting both employees and organizations in the long run.

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Competitive and Demand analysis of the Branded Snacks

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Abstract:

The snack industry has witnessed tremendous growth in recent years, with numerous brands vying for consumer attention. This study aims to conduct a comprehensive competitive and demand analysis of snack brands to understand their market position and consumer preferences. The competitive analysis will focus on identifying key players in the snack market, evaluating their product offerings, pricing strategies, distribution channels, and promotional activities. The demand analysis will delve into consumer preferences, understanding their snack consumption habits, preferences for healthy alternatives, and willingness to try new flavors or brands. The study will also explore factors influencing purchase decisions, such as price sensitivity, convenience, nutritional value, and brand recognition. By analyzing data collected from surveys and interviews, the research aims to provide valuable insights into consumer behavior and preferences, enabling snack brands to tailor their offerings accordingly.

Keywords: competitive analysis, demand analysis, snack brands, market research, consumer preferences, industry competition, market share.

PRISM Analysis:

P - Political Factors:

Government regulations and policies impacting the snack industry such as health and labeling regulations.

Trade policies and agreements affecting the import and export of snack products.

Political stability and economic conditions influencing consumer purchasing power and demand for snack brands.

R - Regulatory Factors:

Food safety and quality regulations governing the manufacturing, packaging and distribution of snack products.

Labeling requirements for nutritional information, allergens and ingredient transparency.

Advertising and marketing regulations for promoting snack brands to ensure fairness and accuracy.

I - Industry Factors:

Market competition and rivalry among snack brands, including both established players and emerging startups.

Technological advancements influencing product innovation, production processes and distribution channels.

Supply chain dynamics and relationships with suppliers, distributors, and retailers in the snack industry.

S - Socio-Cultural Factors:

Changing consumer lifestyles and preferences such as increasing demand for healthier snack options or ethnic and exotic flavors

Cultural factors influencing snack consumption habits, taste preferences, and snacking occasions.

Social media trends and influencer marketing impacting brand perception and consumer engagement with snack brands.

M - Market Factors:

Market size, growth rate and potential for the snack industry in various regions.

Consumer demographics such as age, income, and ethnicity, affecting snack brand preferences and demand.

Market segmentation and target audience analysis to identify niche markets and potential growth opportunities.

The PRISM analysis for competitive and demand analysis of snack brands provides a comprehensive framework for assessing the various factors influencing the snack industry. By considering political, regulatory, industry, socio-cultural, and market factors, snack brands can gain insights into the competitive landscape, consumer preferences, and market dynamics. This analysis enables brands to make informed decisions, develop effective strategies, and position themselves for success in the highly competitive snack market.

Conclusion:

Conducting a competitive and demand analysis of snack brands is essential for understanding market dynamics, consumer preferences, and gaining a competitive edge in the snack industry. By employing methodologies such as market research surveys, data analysis, and interviews, valuable insights can be obtained regarding consumer behavior, brand positioning, and market share.

Through competitive analysis, snack brands can identify key players in the market, evaluate their strategies, and assess their strengths and weaknesses. This analysis helps brands understand consumer preferences, taste trends, packaging preferences, and factors influencing purchase decisions. Additionally, the demand analysis provides insights into consumer habits, willingness to try new flavors or brands, and preferences for healthier alternatives.

By considering political, regulatory, industry, socio-cultural, and market factors, snack brands can develop effective marketing strategies, optimize their product portfolios, and cater to the evolving demands of consumers. Understanding the competitive landscape and consumer preferences enables brands to differentiate themselves, enhance brand loyalty, and capitalize on growth opportunities in the snack market.

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Recruitment and selection in Talent serve

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Abstract:

The success of an organization heavily relies on its ability to attract, recruit, and select top talent. This study focuses on the recruitment and selection process within Talent Serve, a talent acquisition agency. Additionally, the study will examine the criteria and techniques used to assess candidate qualifications, skills, and cultural fit. It will explore the role of technology in streamlining the recruitment process and enhancing candidate evaluation. Overall, this research on recruitment and selection in Talent Serve will shed light on the intricacies of talent acquisition and provide valuable insights for organizations seeking to optimize their recruitment practices. By identifying and implementing effective strategies, organizations can successfully attract and retain top talent, thereby gaining a competitive advantage in today's dynamic job market.

Keywords: recruitment, selection, talent acquisition, talent management, hiring process, candidate evaluation, talent serve.

Introduction:

Recruitment and selection are critical processes within any organization, as they directly impact the quality and composition of the workforce. Effective talent acquisition strategies can contribute to the success and competitiveness of an organization, while poor recruitment and selection practices can result in costly hiring mistakes and hinder organizational growth. Talent Serve, a talent acquisition agency, specializes in assisting organizations in finding and hiring top talent. This study focuses on understanding the recruitment and selection process within Talent Serve, examining the strategies, practices, and challenges involved in effectively identifying and hiring the most suitable candidates for clients.

In today's highly competitive job market, organizations face numerous challenges when it comes to recruiting and selecting the right candidates. Talent scarcity, increasing competition among employers, and evolving candidate expectations necessitate a thorough understanding of effective recruitment and selection techniques. Furthermore, organizations must adapt to the changing landscape of talent acquisition, including the use of technology, evolving candidate preferences, and the need for diverse and inclusive hiring practices.

Talent Serve operates in this dynamic environment, utilizing its expertise and resources to support clients in securing the best talent for their organizations. By investigating the recruitment and selection process within Talent Serve, this study aims to provide insights into the strategies and practices employed by the agency. It seeks to examine the various stages of the recruitment and selection process, from candidate sourcing to final selection, and uncover the factors that contribute to successful talent acquisition.

Understanding the recruitment strategies utilized by Talent Serve is crucial to uncovering the approaches they employ to attract a diverse pool of candidates. Leveraging social media platforms, job boards, and professional networks has become integral to modern recruitment practices. Examining the criteria and techniques used to assess candidate qualifications, skills, and cultural fit will shed light on how Talent Serve identifies the most suitable candidates for clients.

PRISM Analysis:

P - Political Factors:

Government regulations and labor laws impacting recruitment and selection processes, such as equal employment opportunity laws and immigration policies.

Political stability and government initiatives that may influence the availability of talent and workforce demographics.

R - Regulatory Factors:

Compliance with recruitment and selection regulations, including anti-discrimination laws, background checks, and data privacy regulations.

Adherence to industry-specific regulations or certifications that may impact the hiring process, such as healthcare or financial industry requirements.

I - Industry Factors:

Competitive landscape in the talent acquisition industry, including the presence of other recruitment agencies and their respective strategies.

Technological advancements and the impact of artificial intelligence (AI), automation, and applicant tracking systems (ATS) on the recruitment and selection process.

Talent scarcity and the availability of qualified candidates in specific industries or job roles.

S - Socio-Cultural Factors:

Socio-cultural trends influencing candidate preferences and expectations during the recruitment process, such as work-life balance, flexible schedules, and remote work options.

Diversity and inclusion considerations in the hiring process to ensure fair and equitable representation of candidates from different backgrounds.

Socio-cultural factors that may affect candidate sourcing and engagement, such as generational differences and cultural norms.

M - Market Factors:

Economic conditions and their impact on the job market, including unemployment rates, salary expectations, and candidate bargaining power.

Market demand for specific skills or expertise, which may influence the recruitment and selection strategies employed by Talent Serve.

Market trends and changes in candidate behavior, such as the use of social media and professional networks for job searching and networking.

The PRISM analysis highlights the various factors that influence the recruitment and selection processes within Talent Serve. By considering the political, regulatory, industry, socio-cultural, and market factors, Talent Serve can develop effective strategies to attract, assess, and select top talent for their clients. Understanding the impact of these factors enables Talent Serve to navigate legal and regulatory requirements, adapt to industry trends, meet changing candidate expectations, and stay competitive in the talent acquisition market.

Conclusion:

In conclusion, the recruitment and selection process plays a pivotal role in the success of Talent Serve as a talent acquisition agency. By effectively identifying and hiring the most suitable candidates for their clients, Talent Serve enhances organizational competitiveness and contributes to client satisfaction. This study has explored the strategies, practices, and challenges involved in the recruitment and selection process within Talent Serve, shedding light on the factors that contribute to successful talent acquisition.

Through a comprehensive analysis of the recruitment and selection process, including candidate sourcing, assessment, and final selection, insights have been gained into the strategies employed by Talent Serve. Leveraging social media, job boards, and professional networks has proven to be instrumental in attracting a diverse pool of candidates. Moreover, the use of technology, such as applicant tracking systems and automation tools, has streamlined the recruitment process and improved candidate evaluation.

Challenges in talent acquisition, such as talent scarcity, intensifying competition, and the importance of diversity and inclusion, have also been identified. Talent Serve must navigate these challenges to effectively source and select top talent for their clients. Adherence to regulatory requirements, including equal employment opportunity laws and data privacy regulations, is crucial in ensuring fair and compliant recruitment and selection practices.

By considering the political, regulatory, industry, socio-cultural, and market factors, Talent Serve can continually refine their recruitment and selection strategies. This enables them to adapt to changing candidate preferences, industry trends, and market demands. By staying abreast of technological advancements and embracing best practices, Talent Serve can enhance their effectiveness in identifying and hiring the most qualified candidates for their clients.

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Student satisfaction on Talent Serve

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Abstract:

Student satisfaction is a crucial factor in evaluating the effectiveness and quality of educational services. In recent years, online platforms such as Talent Serve have gained popularity as a means of connecting students with tutors and mentors to enhance their skills and talents. This study aims to investigate student satisfaction with Talent Serve and identify the key factors that contribute to their overall satisfaction. A mixed-methods approach, including surveys and interviews, will be employed to collect data from a sample of students who have used Talent Serve. The collected data will be analyzed using statistical techniques and thematic analysis to uncover patterns and themes related to student satisfaction. The findings of this study will provide valuable insights into the aspects of Talent Serve that contribute to student satisfaction and guide the platform's future development to better meet student needs.

Keywords: student satisfaction, Talent Serve, online platforms, educational services, skills enhancement, tutors, mentors, mixed-methods approach, surveys, interviews, statistical analysis, thematic analysis, student needs

Introduction:

In the digital age, online platforms have revolutionized various aspects of our lives, including education. One such platform gaining considerable attention is Talent Serve, a platform that connects students with tutors and mentors to enhance their skills and talents. As education undergoes a significant transformation, it becomes essential to assess student satisfaction with these platforms to ensure their effectiveness and quality.

Student satisfaction is a crucial measure of the success of educational services. Satisfied students are more likely to engage actively in the learning process, achieve better academic outcomes, and develop a positive attitude towards education. Therefore, understanding the factors that contribute to student satisfaction on platforms like Talent Serve is of paramount importance.

The concept of student satisfaction encompasses various dimensions, including the quality of instruction, accessibility of resources, responsiveness of the platform, and overall user experience. By assessing these factors, educators and platform developers can gain insights into how to improve the learning experience and tailor their services to better meet student needs.

PRISM Analysis:

P - Politics:

The political landscape plays a crucial role in shaping the context in which Talent Serve operates. Government policies and regulations regarding online education and platforms can influence the accessibility, affordability, and quality of services provided by Talent Serve. Additionally, political factors such as funding initiatives or educational reforms may impact the resources available to enhance student satisfaction on the platform.

R - Regulations:

Regulatory frameworks related to online platforms, data protection, and student privacy are significant considerations for Talent Serve. Compliance with regulations such as the General Data Protection Regulation (GDPR) and ensuring a safe online environment for students are important aspects that

contribute to student satisfaction. Adhering to regulations and implementing robust security measures will build trust and enhance the overall experience for students.

I - Industry:

The educational technology industry, including online learning platforms, is a dynamic and competitive market. Talent Serve operates within this industry and faces competition from similar platforms. Monitoring industry trends, benchmarking against competitors, and staying abreast of technological advancements are essential for Talent Serve to provide a superior user experience and maintain student satisfaction.

S - Social:

Social factors have a significant influence on student satisfaction on Talent Serve. The platform's ability to foster a sense of community and facilitate interaction among students and mentors contributes to a positive social experience. Features such as discussion forums, virtual classrooms, and networking opportunities can enhance social engagement and promote student satisfaction. Additionally, addressing social equity and inclusivity by ensuring access for students from diverse backgrounds is crucial for a satisfactory user experience.

M - Media:

Media plays a crucial role in shaping public perception and awareness of educational platforms like Talent Serve. Positive media coverage highlighting successful student experiences, innovative features, and the platform's impact on skill development can boost student satisfaction and attract a wider user base. However, negative publicity or issues related to data breaches, inadequate support, or platform limitations can have adverse effects on student satisfaction and reputation.

The PRISM factors (Politics, Regulations, Industry, Social, and Media) is essential for understanding the dynamics and challenges surrounding student satisfaction on Talent Serve. By addressing these factors effectively, Talent Serve can enhance the platform's functionality, promote a positive learning environment, and ultimately improve student satisfaction.

Conclusion:

In conclusion, student satisfaction on platforms like Talent Serve is a critical aspect of evaluating the effectiveness and quality of online educational services. By understanding the factors that contribute to student satisfaction, educators and platform developers can enhance the learning experience, tailor services to meet student needs, and promote positive outcomes.

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Digital marketing: Boom or Ban

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Abstract:

Digital marketing has witnessed a rapid growth in recent years, revolutionizing the way businesses reach their target audience. This paper explores the phenomenon of digital marketing and its impact on the business landscape, aiming to answer the question of whether it is a boom or a ban. By examining the advantages and disadvantages of digital marketing strategies, this study offers insights into the effectiveness, challenges, and ethical considerations associated with this form of marketing. The analysis encompasses key areas such as social media marketing, search engine optimization, content marketing, and influencer marketing. The findings reveal that while digital marketing provides unprecedented opportunities for businesses to expand their reach, engage with customers, and achieve measurable results, it also raises concerns regarding privacy, data security, and consumer trust. The study concludes with recommendations for businesses to navigate the digital marketing landscape and maximize its potential while addressing its associated risks.

Keywords: digital marketing, boom, ban, advantages, disadvantages, social media marketing, search engine optimization, content marketing, influencer marketing, effectiveness, challenges, ethical considerations, privacy, data security, consumer trust

Introduction:

In today's digital age, the business landscape has undergone a dramatic transformation, with traditional marketing methods giving way to the era of digital marketing. As technology continues to advance and consumers increasingly spend their time online, businesses are compelled to adapt their strategies to remain relevant and competitive. However, the rise of digital marketing has sparked a debate about its true impact and whether it represents a boom or a ban for businesses. This introduction aims to explore this topic by examining the advantages and disadvantages of digital marketing, shedding light on its effectiveness, challenges, and ethical considerations.

Digital marketing encompasses a wide range of strategies and tactics aimed at promoting products, services, and brands through various online channels. It includes techniques such as social media marketing, search engine optimization (SEO), content marketing, email marketing, influencer marketing, and more. These avenues provide businesses with unprecedented opportunities to connect with their target audience, engage in real-time interactions, and measure the impact of their marketing efforts like never before.

One of the primary advantages of digital marketing is its potential for reaching a vast and diverse audience. Unlike traditional marketing methods that often have limited geographic reach, digital marketing enables businesses to extend their reach globally, transcending boundaries and time zones. With billions of people active on social media platforms and search engines, businesses can strategically target specific demographics, personalize messages, and deliver tailored content to resonate with their audience.

PRISM Analysis:

P - Political Factors:

Digital marketing operates within a political landscape that influences its growth and regulation. Governments may enforce data protection laws, privacy regulations, and restrictions on advertising practices. Policies related to net neutrality and antitrust laws can also impact the digital marketing industry. Political decisions regarding online censorship and content moderation can shape the effectiveness and reach of digital marketing strategies.

R - Regulatory Factors:

Digital marketing is subject to various regulations and compliance requirements. Laws such as the General Data Protection Regulation (GDPR) in the European Union or the California Consumer Privacy Act (CCPA) in the United States impose strict guidelines on data collection, processing, and consent. Compliance with these regulations is essential for businesses engaged in digital marketing to avoid penalties and maintain consumer trust.

I - Industry Factors:

The digital marketing industry is highly dynamic and competitive. Technological advancements, such as artificial intelligence and machine learning, continuously reshape digital marketing strategies and techniques. The industry also faces challenges related to ad fraud, ad-blocking software, and algorithm changes by search engines and social media platforms. The growth of influencer marketing and the emergence of new platforms and channels further influence the industry's landscape.

S - Sociocultural Factors:

Sociocultural factors impact how digital marketing is received by consumers. Changing consumer behavior, preferences, and attitudes towards online advertising play a significant role. Factors such as the rise of ad-avoidance, increasing demand for personalized experiences, and concerns over privacy and data security influence the effectiveness and acceptance of digital marketing strategies. Sociocultural trends also shape the adoption of specific platforms or channels for marketing purposes.

M - Market Factors:

Digital marketing operates within a broader market environment. Factors such as economic conditions, market saturation, and consumer purchasing power impact businesses' marketing budgets and their ability to invest in digital marketing strategies. Market trends, industry competition, and shifts in consumer demand for online products and services also influence the success and viability of digital marketing campaigns.

Analyzing these PRISM factors helps in understanding the broader context in which digital marketing operates. By considering the political, regulatory, industry, sociocultural, and market factors, businesses can better assess the opportunities, challenges, and potential risks associated with digital marketing. This analysis enables organizations to make informed decisions, adapt their strategies, and navigate the dynamic landscape of digital marketing, ultimately determining whether it represents a boom or a ban for their specific objectives and target audience.

Conclusion:

Digital marketing has undoubtedly experienced a significant boom in recent years, transforming the way businesses connect with their target audience. However, it is crucial for businesses to approach digital marketing strategically, considering both its advantages and challenges, to harness its full potential while addressing ethical concerns.

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Ratio analysis as fundamental analysis

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Abstract:

Ratio analysis is a crucial component of fundamental analysis, a method used by investors and financial analysts to evaluate the intrinsic value of a company's stock. Fundamental analysis involves examining a company's financial statements, including balance sheets, income statements, and cash flow statements, to gain insights into its financial health and future prospects. Ratio analysis plays a central role in this process by providing quantitative measures that help assess various aspects of a company's performance, such as profitability, liquidity, efficiency, and solvency. This abstract explores the importance of ratio analysis as a fundamental analysis tool and its role in guiding investment decisions.

Keywords: Ratio analysis, fundamental analysis, financial statements, intrinsic value, stock evaluation, profitability, liquidity, efficiency, solvency, investment decisions.

Introduction:

Ratio analysis is a vital component of fundamental analysis, a comprehensive approach used by investors and financial analysts to evaluate the intrinsic value of a company's stock. As investors seek to make informed decisions and identify potentially lucrative investment opportunities, fundamental analysis provides a framework for assessing the financial health and performance of a company. Within this framework, ratio analysis plays a pivotal role by providing valuable insights into various aspects of a company's operations and financial position.

Fundamental analysis involves a thorough examination of a company's financial statements, including balance sheets, income statements, and cash flow statements. These financial statements offer a snapshot of the company's financial performance, highlighting key metrics such as revenues, expenses, assets, liabilities, and equity. However, raw financial data alone may not provide a complete understanding of a company's true value and prospects. This is where ratio analysis comes into play.

Ratio analysis involves calculating and interpreting financial ratios derived from the company's financial statements. These ratios serve as quantitative indicators that offer meaningful insights into different facets of a company's operations, such as profitability, liquidity, efficiency, and solvency. By comparing these ratios to industry benchmarks, historical performance, or competitor analysis, investors can gain a deeper understanding of a company's relative strengths and weaknesses.

One of the primary objectives of ratio analysis in fundamental analysis is to evaluate a company's profitability. Profitability ratios, such as gross profit margin, net profit margin, and return on equity, provide an indication of how efficiently a company generates profits from its operations. These ratios enable investors to assess the company's ability to generate sustainable earnings and potential for long-term growth.

Liquidity ratios, on the other hand, shed light on a company's short-term financial health and ability to meet its immediate obligations. Ratios like current ratio and quick ratio assess the company's liquidity position by comparing its current assets to current liabilities. These ratios are crucial in determining whether a company has sufficient resources to cover its short-term liabilities and continue its operations smoothly.

Efficiency ratios focus on how effectively a company utilizes its assets and resources to generate sales and revenue. Ratios such as inventory turnover, accounts receivable turnover, and asset turnover provide insights into the company's operational efficiency and its ability to generate sales from its invested capital.

Additionally, solvency ratios evaluate a company's long-term financial stability and its capacity to meet its long-term debt obligations. These ratios, including debt-to-equity ratio and interest coverage ratio, assess the company's reliance on debt financing and its ability to manage its debt burdens effectively.

PRISM Analysis:

P - Purpose:

The purpose of employing ratio analysis as a fundamental analysis tool is to evaluate and assess the financial health, performance, and intrinsic value of a company. By analyzing various financial ratios derived from the company's financial statements, investors and financial analysts aim to gain insights into different aspects such as profitability, liquidity, efficiency, and solvency. The ultimate goal is to make informed investment decisions based on a thorough understanding of a company's strengths, weaknesses, and growth potential.

R - Relevance:

Ratio analysis holds great relevance in fundamental analysis as it provides quantitative measures that enable investors to assess a company's financial performance in relation to its competitors, industry benchmarks, and historical data. By comparing ratios over time and against industry standards, investors can identify trends, pinpoint areas of improvement or concern, and make informed investment choices. Ratio analysis helps investors determine the intrinsic value of a company's stock by evaluating its financial metrics and assessing its growth prospects.

I - Impact:

The impact of ratio analysis in fundamental analysis is significant. It allows investors to gain a comprehensive understanding of a company's financial position, profitability, liquidity, efficiency, and solvency. Through ratio analysis, investors can identify whether a company is generating sustainable profits, effectively managing its resources, meeting its short-term and long-term obligations, and maintaining a stable financial outlook. The insights gained from ratio analysis directly influence investment decisions and can lead to improved returns and reduced investment risks.

S - Strengths:

Ratio analysis offers several strengths as a fundamental analysis tool. It provides a standardized and systematic approach to evaluating a company's financial performance, making comparisons between companies, and tracking performance over time. Ratio analysis is versatile and applicable to companies of all sizes and across various industries. It helps identify both positive and negative trends, enabling investors to capitalize on growth opportunities or take precautionary measures. Additionally, ratio analysis allows for benchmarking against industry peers, facilitating a better understanding of a company's competitive position.

M - Limitations:

While ratio analysis is a valuable tool, it also has limitations that should be considered. Ratios are based on historical data and may not always reflect future performance accurately. External factors such as economic conditions, market trends, and industry dynamics can influence a company's financials and impact the validity of ratio analysis. Furthermore, ratios alone may not provide a comprehensive view of a company's overall health and should be used in conjunction with other qualitative and quantitative

factors. Interpretation of ratios requires caution, as different industries and business models may have unique characteristics that affect ratio benchmarks.

Ratio analysis serves as a powerful and indispensable tool within the realm of fundamental analysis. By evaluating financial ratios, investors and financial analysts can gain valuable insights into a company's financial performance, make informed investment decisions, and assess its intrinsic value. While ratio analysis has strengths and limitations, its relevance and impact on investment decisions cannot be undermined, making it an integral part of fundamental analysis practices

Conclusion:

In conclusion, ratio analysis plays a vital role as a fundamental analysis tool in evaluating the financial health and intrinsic value of a company. By analyzing various financial ratios derived from the company's financial statements, investors and financial analysts can gain insights into profitability, liquidity, efficiency, and solvency. Ratio analysis provides a quantitative foundation for making informed investment decisions, identifying areas of improvement, and comparing performance against industry benchmarks. However, it is important to recognize the limitations of ratio analysis and consider other qualitative and quantitative factors to obtain a comprehensive understanding of a company's overall financial position. Nonetheless, ratio analysis remains a powerful and indispensable tool for assessing the performance and potential of a company.

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Recruitment and selection Process in Infosys

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Abstract:

Recruitment and selection are vital processes for organizations to attract and identify the right talent. This abstract focuses on the recruitment and selection process at Infosys, a leading global technology services and consulting company. The study provides an overview of the strategies, methods, and tools employed by Infosys to recruit and select candidates. It explores the key stages of the process, including job analysis, sourcing, screening, interviewing, and final selection. The abstract also discusses the importance of diversity and inclusion in Infosys' recruitment and selection practices. Additionally, it highlights the use of technology, such as applicant tracking systems and data analytics, to streamline and enhance the efficiency of the process. The findings shed light on the best practices employed by Infosys in recruiting and selecting top talent, contributing to a deeper understanding of effective recruitment and selection strategies in the technology industry.

Keywords: recruitment, selection, process, Infosys, talent acquisition, job analysis, sourcing, screening, interviewing, diversity and inclusion, applicant tracking system, data analytics, technology industry

Introduction:

In today's highly competitive business landscape, attracting and retaining top talent has become crucial for organizations to achieve sustainable growth and success. The recruitment and selection process plays a vital role in ensuring that companies identify and hire the right candidates who possess the skills, qualifications, and cultural fit necessary to thrive within the organization. This introduction provides an overview of the recruitment and selection process in Infosys, one of the world's leading global technology services and consulting companies.

Infosys, headquartered in Bengaluru, India, has established itself as a pioneer in the technology industry with a strong global presence. With a workforce that spans across multiple countries, the company places immense importance on its recruitment and selection practices to maintain a competitive edge in the market. By adopting effective strategies, leveraging technology, and promoting diversity and inclusion, Infosys aims to attract and retain the brightest minds in the industry.

The recruitment and selection process in Infosys begins with a comprehensive job analysis, which involves defining the roles and responsibilities, identifying the required skills and qualifications, and determining the desired cultural fit. This step ensures that the organization has a clear understanding of the talent it seeks to attract.

Sourcing candidates is the next crucial stage in the process. Infosys employs a variety of channels to reach potential candidates, including online job portals, social media platforms, career fairs, and campus recruitment drives. These channels help the company cast a wide net and tap into diverse talent pools, both locally and globally.

PRISM Analysis:

P - Political Factors:

Government regulations and policies regarding recruitment and selection practices: Infosys operates in various countries, and its recruitment and selection process must comply with local labor laws, regulations, and government policies.

Political stability and changes in government: Political instability or changes in government can impact recruitment practices, including visa regulations for international candidates.

R - Regulatory Factors:

Labor laws and employment regulations: Infosys must adhere to employment laws and regulations related to fair employment practices, equal opportunity, non-discrimination, and data privacy during the recruitment and selection process.

Data protection and privacy laws: Infosys needs to ensure compliance with data protection and privacy regulations when collecting, storing, and processing candidate information.

I - Industry Factors:

Competition for top talent: The technology industry is highly competitive, and Infosys faces stiff competition from other global companies in attracting and hiring skilled professionals.

Technological advancements: Infosys needs to stay abreast of emerging technologies and adapt its recruitment and selection process to leverage tools and platforms that enhance efficiency and attract tech-savvy candidates.

S - Socio-Cultural Factors:

Diversity and inclusion: Infosys recognizes the importance of diversity and inclusion in its workforce and aims to create an inclusive environment by promoting equal opportunities for candidates from different backgrounds, genders, and cultures.

Cultural fit: Infosys places importance on assessing candidates' cultural fit within the organization to ensure alignment with its values, work ethic, and collaborative culture.

M - Market Factors:

Talent market dynamics: Infosys operates in a global talent market, and market conditions such as talent shortages, demographic shifts, and changes in skill requirements can impact the availability and quality of candidates.

Employer branding and reputation: Infosys' reputation as an employer affects its ability to attract top talent. Positive employer branding, testimonials from current employees, and industry recognition can enhance its recruitment and selection efforts.

The PRISM analysis highlights the political, regulatory, industry, socio-cultural, and market factors that influence the recruitment and selection process in Infosys. By considering these factors, Infosys can tailor its strategies and practices to effectively attract, select, and hire the best candidates while complying with relevant laws and regulations, promoting diversity and inclusion, leveraging technology, and staying competitive in the global talent market.

Conclusion:

The recruitment and selection process in Infosys demonstrates the organization's commitment to identifying and attracting top talent in the technology industry. Through a well-defined process encompassing job analysis, sourcing, screening, interviewing, and prioritizing diversity and inclusion, Infosys aims to hire candidates who align with its values and possess the necessary skills for driving innovation and success.

So, Infosys demonstrates a comprehensive and strategic approach to its recruitment and selection process. By considering political, regulatory, industry, socio-cultural, and market factors, Infosys ensures that it attracts and selects the right candidates who can contribute to its growth and success in the technology industry.

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Integrated Farming System: An Introduction

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Abstract

The Integrated Farming System (IFS) is an environmentally friendly method where the loss of one enterprise becomes integral, thereby making efficient use of agricultural resources. IFS is a mixed farming system consisting of at least two separate but equally dependent parts of plant and animal business. IFS helps improve soil health, kill weeds and pests, increase water efficiency and maintain water quality. In an integrated agriculture program, the use of hazardous chemical fertilizers, herbicides and pesticides should be minimized and should ensure the protection of the environment from adverse effects. The integrated agriculture program improves the economic situation of small farmers, improves education, health and social obligations and improves livelihood security. IFS approaches the use of chemicals (fertilizers and pesticides), it can be limited to providing healthy non-chemical foods in the community.

Keywords: Integrated farming system, fertilizers, pesticides, arable land, pollen

Introduction

According to the 2008 Economic Survey of India, the growth rate of grain production fell to 1.2% between 1990-2007, which is 1.9% less than the population growth rate. It is estimated that the population in our country will reach 1370 million by 2030 and will reach 1600 million by 2050. To meet future demand, we need to produce 289 grains and 349 mt at the right times. The current situation in the country suggests that arable land may be decreasing and more than 20% of the current planting area will be converted to non-agricultural purposes by 2030 (Gill et.al. 2005).

In India, declining farm size rates and financial challenges with high investment in agriculture due to 80% of farming families belonging to the small and medium farmer categories add to this challenge. In order to achieve nutritious food and food security for more people, improving production can be an important solution. This includes the adoption of agricultural scientific practices and technologies that form an agreement to increase the productivity of traditional farming systems. Agricultural practices such as the approval of fertilizers and pesticides during the 20th century greatly improved productivity, but adverse environmental degradation coupled with rising operational costs in agriculture raised concerns about economic viability and sustainability (IAASTD, 2009 and FAO, 2010).

In the past, animals were used for direct feeding or to provide other services such as energy (aquatic animals) or transport (horses) in integrated farming systems. In addition, animals were hired indirectly to provide services such as weed and pest control, fertilization or pollination; or foods such as milk, eggs or honey. Animals have also been a source of products such as compost or hides that can be directly sold or converted into value-added products and return money to the business (Devendra and Thomas, 2002). million families of small farm owners. Scaling up agricultural production systems for sustainable and high economic recovery is a critical process for increasing incomes, food security and nutrition in developing countries (Ravallion, 2007). IFS is an integrated and efficient farm solution to the problems of small and medium farmers. The objective of IFS is to increase the employment and income of smallholder farmers by consolidating various agricultural enterprises and revitalizing crop residues and

farm products. Farmers have to settle on a standard income to live at least below the poverty line. To meet the challenges posed by the current economic, political and technological situation, progress in production or continuous growth of products is necessary. In this case, agriculture is one of the most important solutions to deal with this unusual situation, because in this way, various enterprises can be carefully created and, based on available resources, spatial plans are drawn up that will lead to further development (Dashora and Hari., 2014)

Therefore IFS is a multidisciplinary whole farm approach and very effective in solving the problems of small and marginal farmers. The approach aims at increasing income and employment from small-holding by integrating various farm enterprises and recycling crop residues and by products within the farm itself. The farmers need to be assured of regular income for living at least above poverty line. The progress in production or steady growth in output is necessary to face the challenges posed by present economic, political and technological environment. In this context, farming system approach is one of the important solutions to face this peculiar situation as in this approach the different enterprises can be carefully undertaken and the location specific systems are developed based on available resources which will result into sustainable development.

Objectives of the integrated agricultural plan

The four main objectives of the IFS are:

1. Increasing the revenues of all participating businesses in order to ensure a stable and sustainable income.
2. Revitalization / improvement of the production system and the achievement of agricultural and environmental justice.
3. Avoid pests, diseases and weeds by controlling the natural planting system and keeping them low.
4. Reduce the use of chemicals (fertilizers and pesticides) to ensure a healthy chemical and environmental product (Manjunatha, 2014)

IFS components

IFS components include -

- A. Agriculture - agriculture, forestry, dairying, fish breeding, duck breeding.
- B. Mushroom farming - Sericulture, Azolla farming, Kitchen gardening, Fodder production, Child care center.
- C. Seeds - Production - Vermiculture, Pigeon breeding, Poultry house, Goat breeding, Poultry.
- D. Sheep-pig farming, rabbit farming, value addition (Lal et al., 2018).

A unique integrated approach to small farms is a growing trend in aquaponics. Often associated with greenhouse or other controlled ecosystems, aquaponics is a combination of aquaculture and hydroponic production. In this type of production system, nutrients found in fish waste, tilapia, the most abundant fish species, are also systematically distributed and used by plants to meet their nutritional needs. Typically, large numbers of fish are reared in small volumes of water to allow concentration of non-toxic nutrients (Rakocy et al., 2006).

Advantages of IFS

IFS is more profitable than what farmers can produce more through resource efficiency and waste recycling and family work. It is useful in any investigation as it not only provides an overview of work done in the past but also provides a basis for interpreting and discussing the findings of future research (Sasikala et al., 2015). (Let me tell you about it. (Singh et al., 1993 and Singh et al., 1997) noted that the consolidation of multinational corporations tends to be more profitable than conventional agriculture alone and creates more employment opportunities. (Rangasamy et al. , 1996) describes the combination of poultry, mushrooms and fish with rice cultivation over five years, which increases the income of farms and farm workers compared to a general rice cultivation system, and a comparative analysis suggests that the diversity and growth of rice. to be productive, profitable and manageable.

Conclusion:

Although the Green Revolution transformed India from a food retailer to a food exporting country, independent agriculture became a major concern in this transition. This, among other things, led to a lack of soil nutrients and increased use of chemical fertilizers needed to boost agriculture. IFS mimic the natural environment at least to some extent. The diversity and interdependence between different and integrated agricultural practices leads to the problem of internet catering. In addition to the ecological balance, IFS has a significant impact on society in terms of food and nutrition and job creation. Above all, it increases the profitability and productivity of small farmers. Therefore, integrated farming systems will contribute significantly integrated farming systems offer unique opportunities for maintaining and extending biodiversity. The emphasis in such systems is on optimizing resource utilization rather than maximization of individual elements in the system. The wellbeing of poor farmers can be improved by bringing together the experiences and efforts of farmers, scientists, researchers, and students in different countries with similar eco-sociological circumstances i.e. through Integrated Farming System to the sustainability of agriculture and the vision of doubling farmers' profits.

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Overview of life cycle, losses and integrated management strategy of melon fruit fly on bitter gourd - A review

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Abstract- Bitter gourd (*Momordica charantia*) is the emerging commercial vegetable crop and is very well known for its medicinal properties. The melon fruit fly, *Bactrocera cucurbitae* Coquillett (Diptera: Tephritidae) is prominent insect pest in bitter gourd. The fly females oviposit their egg inside the fruit, after emerging of maggots instantly begins to excavate and feed the fruit. Due to the voracious feeding of maggots, fruit starts to decay and emits bad odour. Oviposition puncture of female flies also damage the fruit quality in market. The yield losses tend to vary between 30 to 100%, depending on the cucurbit species and the season (Rabindranath and Pillai 1986). Melon fruit fly can be managed or suppressed in the farmer fields, by local area and wide area management programmes (Dhillon et al., 2005). Local area management programme, which aims at suppressing, rather than eradicating the melon fruit flies, involves the integration of various management tactics, including, bagging fruits, application of field sanitation measures, installation of protein baits and cue lure traps, growing fruit fly resistant genotypes, augmentation of bio-control agents and cover spray of soft insecticides (Chinajariyawong et al., 2003; 2004; Dhillon et al., 2005).

Introduction:

Cucurbits, belongs to family Cucurbitaceae, which mostly possess trailing habit, are the vegetable crops which are primarily consumed as food worldwide. They constitute the largest group of the summer vegetables. Cucurbits are rich in iron, vitamins, proteins and minerals. They are known for numerous medicinal properties as bitter gourd juice being used to cure diabetes; bottle gourd fruit juice has high blood pressure and heart valve blockage ameliorating properties. Cucurbit seeds are valued for their high oil and protein contents comparable to that of legumes and are richer in methionine, a crystalline amino acid containing sulphur and essential for nutrition. Fruit fly (*Bactrocera cucurbitae*) is the most destructive pests of cucurbits causing direct yield loss. In India, because of the polyphagous nature of their larvae, fruit flies are considered as one of the ten most serious insect pests of the entire

agriculture. Out Of 207 species of fruit flies found in India, nine are identified to be the major and economically important. The melon fruit fly has more than 80 hosts plants and their economic importance cannot be evaluated entirely from standpoint of the direct damage to the various crops attached. Its abundance increases when the temperature falls below 32 °C and the relative humidity ranges from 60% to 70% (Dhillon *et al.*, 2005 and Sapkota *et al.*, 2010).

Life cycle of fruit fly:

The melon fruit fly remains active throughout the year on one or the other host. During the severe winter months, they hide and huddle together under dried leaves of bushes and trees. During harsh winters, they hide and huddle under the dry leaves of bushes and trees. During the hot and dry seasons, the flies take refuge in moist, shady places and feed on the honeydew of aphids that live on fruit trees. The lower and upper developmental thresholds for eggs were 11.4 and 36.4° C (Messenger and Flitters, 1958). This species actively breeds when the temperature falls below 32.2° C and the relative humidity ranges between 60 to 70%. Fukai (1938) reported that adults survived for one year at room temperature when fed fruit juice. In general, its life cycle lasts from 21 to 179 days (Fukai, 1938; Narayanan and Batra, 1960). Development from egg to adult stage takes 13 days at 29° C in Solomon Islands (Hollingsworth *et al.*, 1997).

High temperatures, long hours of sunshine, and plantation activity affect the abundance of *B. cucurbitae* in northeastern Taiwan (Lee *et al.*, 1992). Bhatia and Mahto (1969) reported that the life cycle is completed in 36.3, 23.6, 11.2 and 12.5 days at 15, 20, 27.5 and 30 °C, respectively. Eight to ten generations occur per year (White and Elson-Harris, 1994; Weems and Heppner, 2001). Egg incubation time for Pumpkin, bitter gourd, and squash gourd has recorded 4.0–4.2 days at 27 ± 1 °C (Doharey, 1983);, 1.1 to 1.8 days on bitter gourd, cucumber and sponge gourd (Gupta and Verma, 1995), and 1.0 to 5.1 days on bitter gourd (Koul and Bhagat, 1994; Hollingsworth *et al.*, 1997). The larval period lasts for 3 to 21 days (Renjhan, 1949; Narayanan and Batra, 1960; Hollingsworth *et al.*, 1997), depending on temperature and the host Larval duration varies from 3 to 6 days in different cucurbit species (Chawla, 1966; Chelliah, 1970; Doharey, 1983; Koul and Bhagat, 1994; Gupta and Verma, 1995). Egg viability and larval and pupal viability in cucumber were reported to be 91.7, 86.3 and 81.4%, respectively. In pumpkin, these were 85.4, 80.9, and 73.0%, respectively, at 27 ± 1°C (Samalo *et al.*, 1991). Adult larvae emerge from the fruit by burrowing one or two exit holes in the ground for pupation. The larvae pupate in the soil at a depth of 0.5-15 cm. The depth to which larvae migrate to pupate and survive in the soil depends on soil conditions and moisture (Jackson *et al.*, 1998; Pandey and Misra, 1999). Doharey (1983) observed a pupal period of 7 days in bitter gourd and 7.2 days in pumpkin and squash gourd at 27 ± 1 °C. The pupation period generally lasts 6 to 9 days in the rainy season and 15 days during winter (Narayanan and Batra, 1960). Depending on the temperature and the host, pupation time can vary from 7 to 13 days (Hollingsworth *et al.*, 1997). On different hosts, the pupation period ranges from 7.7 to 9.4 days for bitter gourd, cucumber and sponge gourd (Gupta and Verma, 1995) and 6.5 to 21.8 days for bottle gourd (Koul and Bhagat, 1994; Khan *et al.*, 1993).

Loss caused by fruit flies in different cucurbit crops :

Global and India yield loss typically ranges between 30 to 100% depending on cucurbit species and season. Fruit attack by melon fruit fly in bitter gourd ranges from 41 to 89% (Lall; Kushwaha *et al.*, 1973; Gupta and Verma 1978;). Dhillion *et al.*, (2005) reported 33% damage on bitter gourd and 29% on watermelon in India. Hollingsworth *et al.*, (1997) reported that the melon fruit fly attacked 95 percent of bitter gourd fruits in Papua New Guinea.

Strategies for integrated management of melon fruit fly:

The fruits of cucurbits, of which the melon fly is a serious pest, are collected at short intervals for marketing and self-consumption. Therefore, it is difficult to rely on insecticides as a means of controlling this pest. In situations where chemical control of melon fruit fly is necessary, soft insecticides with low residual toxicity and short withdrawal periods must be relied upon. Thus, considering the importance of the pest and the crop, management of melon fruit fly could be done using local management or large area management.

Local area management

Local area management means the minimum extent of pest control in a limited area such as field level/crop level/village level which has no natural protection against reinvasion. The goal of local management is to suppress the pest rather than eradicate it. Under this management option, a number of methods such as fruit bagging, field sanitation, protein baits and baited traps, host plant resistance, biological control and soft insecticides can be used to maintain pest populations below economic thresholds in a particular crop for a period of time to it prevented crop losses without endangering health and the environment, which is the immediate concern of farmers.

Bagging of fruit

Bagging fruit on the tree (3 to 4 cm long) with 2 layers of paper bags at 2 to 3 day intervals minimizes fruit fly infestation and increases net yields by 40 to 58% (Fang, 1989a, b; Jaiswal et al. , 1997). Akhtaruzzaman et al. (2000) suggested that cucumber fruits should be bagged 3 days after anthesis and the bags should be kept for 5 days for effective control. This is an environmentally safe way of controlling this pest.

Field sanitation

The most effective method in melon fruit fly management is the primary component - field sanitation. To break the reproductive cycle and increase the population, growers must remove any unharvested fruit or vegetable from the field by completely burying it deep into the soil. Burying damaged fruit 0.46 m deep into the soil prevents adult fly eclosion and reduces population growth (Klungness et al., 2005).

Monitoring and control with parapheromone lures/cue-lure traps

The principle of this particular technique is to deny the resources needed for laying female flies, such as protein food (protein bait control) or parapheromone baits, which eliminate males. There is a positive correlation between baited trap catches and weather conditions such as minimum temperature, precipitation and minimum humidity. The sex attractant cue-lure traps are more effective than the food attractant tephritlure traps for monitoring the *B. cucurbitae* in bitter melon. Methyleugenol and baited traps have been reported to attract male *B. cucurbitae* from mid-July to mid-November (Ramsamy et al., 1987; Zaman, 1995; Liu and Lin, 1993). *Ocimum sanctum* leaf extract containing eugenol (53.4%), beta-caryophyllene (31.7%) and beta-elemene (6.2%) as major volatiles when placed on cotton pads (0.3 mg) attract flies from a distance of 0.8 km (Roomi et al., 1993). So, melon whitefly can also be controlled by using *O. sanctum* as a border crop sprayed with a protein bait (protein obtained from corn, wheat or other sources) containing spinosad as a toxicant. A range of commercially produced attractants (Flycide® with 85% cue-lure content; Eugelure® 20%; Eugelure® 8%; Cue-lure® 85% + naled; Cue-lure® 85% + diazinon; Cue-lure® 95% + naled) are commercially available and have been found to be effective in controlling this pest (Iwaizumi et al., 1991). Chowdhury et al. (1993) caught 2.36 to 4.57 flies/trap/day in

poison baits containing trichlorfon in bitter gourd. The use of male bait cearylure B1® (Ethylcis-5-Iodo-trans-2-methylcyclohexane-1carboxylate) was found to be 4-9 times more effective than trimedlure® for attracting male medfly, *Ceratitis capitata* (Mau et al., 2003b), and thus could be tried for male annihilation strategies of area-wide melon fruit fly control programs. A new protein bait, GF-120 Fruit Fly Bait® containing spinosad as a toxicant, has been found to be effective in area management of the melon fruit fly in Hawaii (Prokopy et al., 2003, 2004). GF-120 Fruit Fly Bait® would be highly effective when applied to sorghum plants surrounding cucumbers against protein-hungry melon flies, but would be less effective in preventing protein-fed females from landing on cucumbers. Corn can also be used as a marginal crop to attract melon fruit flies by applying protein bait. Although protein baits, parapheromone baits, lures, and baited traps have been successful in monitoring and controlling the melon fruit fly, immigration of protein-satiated females is a risk. In principle, the risk of immigration of already satiated female could be managed by increasing the distance these satiated immigrants have to travel (Stonehouse et al., 2004).

Chemical Control

Chemical control of the melon fruit fly is relatively ineffective. However, insecticides such as malathion, dichlorvos, phosphamidon and endosulfan are moderately effective against melon fly (Agarwal et al., 1987). Bhatnagar and Yadava (1992) reported malathion (0.5%) to be more effective than carbaryl (0.2%) and quinalphos (0.2%) on bottle gourd, sponge gourd and ridge gourd. Application of molasses + malathion (Limthion 50 EC) and water at a ratio of 1:0.1:100 provides good control of melon fly (Akhtaruzzaman et al., 2000). Application of either 0.05% fenthion or 0.1% carbaryl at 50% male flower emergence and again 3 days after fertilization helps reduce damage to melons (Srinivasan, 1991). Gupta and Verma (1982) reported that fenitrothion (0.025%) combined with protein hydrolyzate (0.25%) reduced fruit fly damage to 8.7% compared to 43.3% damage in the untreated control. Application of carbofuran granules at 1.5 kg a.i./ha at seeding, vine and flowering time provided 83.35% protection of bitter gourd against *B. cucurbitae* (Thomas and Jacob, 1990). Formathion is more effective than trichlorfon (Talpur et al., 1994). Diflubenzuron has also been reported to be effective in controlling melon fly (Mishra and Singh, 1999). The highest yield and lowest damage were observed in pumpkin when treated with carbofuran at 1.5 kg a.i./ha 15 days after germination (Borah, 1998). *Acorus calamus* extract (0.15%) reduced the lifespan of adults from 119.2 days to 26.6 days when fed continuously with sugar mixed with the extract (at a concentration of 1 ml/g sugar) (Nair and Thomas, 1999). Neem oil (1.2%) and neem cake (4.0%) were also reported to be as effective as dichlorvos (0.2%) (Ranganath et al., 1997).

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Marker Aided Selection (MAS): A Mini Review

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ABSTRACT

DNA markers have great potential to improve the efficiency and accuracy of conventional plant breeding through marker-assisted selection (MAS). Numerous quantitative trait locus (QTL) mapping studies in various crop species have provided a wealth of DNA marker-trait associations. This review article provides an overview of the benefits of MAS and its broadest application in plant breeding using the example of cereals. We also discuss why MAS has so far had little impact on plant breeding and suggest ways to exploit its potential. Finally, we discuss why expanded adoption of MAS is inevitable in the future, but the extent of its use, especially for orphan plants, depends on available resources and may lag in developing countries. Having a significant impact on crop improvement through MAS will be a major challenge for agronomists in the coming decades

Keywords: Marker, Plants, RAPD, QTL, Microsatellites, *Fusarium*

Introduction

Polymorphism involves the presence of different forms (alleles) of the same gene in plants or plant populations. These differences are tracked as molecular markers to identify genes of interest and resulting traits. Most organisms are diploid. That is, there are two copies of each gene. That is, one from each parent. Molecular markers, sometimes called DNA markers, should be viewed as signatures along DNA trails that locate desirable genetic traits or indicate specific genetic differences. In the same way that plumes of smoke make it easier to spot wildfires, it's easier for researchers to find genes of interest when they start with nearby markers. The order of each nucleotide identifies the dominant gene and the difference between the genes. Nucleotides also provide the code for protein production, allowing plants to express specific traits. It is these nucleotide strand differences that modify or alter plant trait expression. "A molecular or genetic marker is a piece of DNA associated with a specific location in the genome" or "A gene or DNA sequence with a known location on a chromosome that can be used to identify an individual or species" Used in molecular biology and biotechnology to identify specific DNA sequences within a pool of unknown DNA. A marker can be a short DNA sequence. Sequences surrounding single base pair changes or long changes.

Marker Aided Selection

Marker-assisted selection, or marker-assisted selection (MAS), uses markers to indirectly determine genetic determinants or determinants of traits of interest (i.e., productivity, disease resistance, abiotic stress tolerance, and quality) process of selective selection. This Method is used for breeding animals and plants. Many agronomically important traits, such as yield, quality, and resistance to certain diseases, are controlled by many genes and are quantitatively quantified, also known as 'polygenic', 'multifactorial' or 'complex' traits.

Types of Markers

Following are the different types of markers used:

A) Morphological Markers- Available marker loci with obvious effects on plant morphology. Examples: Markers of this type can include the presence or absence of an awn, pod color, height, grain color, etc. These markers serve to directly measure phenotypes and are affected by environmental changes.

B) Biochemical Markers- These markers are based on the migration properties of proteins. A. gene that encodes a protein that can be extracted and observed. B. Isozymes and storage proteins

C) DNA-based or Molecular Markers- Related to variation in DNA fragments generated by Restriction Endonuclease enzyme .A unique (DNA sequence), occurring in proximity to the gene or locus of interest, can be identified by a range of molecular techniques , it is again divided in to following groups

1. Hybridization based markers : - Restriction Fragment Length Polymorphisms (RFLPs) – by using these marker differences in the number and size of fragments is analyzed

2. Polymerase Chain Reaction (PCR) based - It include Randomly Amplified Polymorphic DNAs (RAPDs), Single Sequence Repeats (SSRs). Amplified Fragment Length Polymorphic DNA (AFLPs) markers.

Properties Desirable for Ideal DNA Markers

1. Should be Highly polymorphic nature
2. Frequent occurrence in genome
3. Easy access (availability)
4. Easy and fast assay
5. High reproducibility
6. Easy exchange of data between laboratories.

Most commonly used markers-

1. Restriction Fragment Length Polymorphisms (RFLPs)

The first type of DNA markers that were used for genetic mapping . It refers to variations found within a species in the length of DNA fragments generated by specific endonuclease. For instance a given restriction site may be present in one line and not in the other.

Procedure:-

2. RFLP detection involves fragmentation of genomic DNA with restriction enzymes that can recognize and cut DNA wherever a particular short sequence is present. The resulting DNA fragments are then longitudinally separated by agarose gel electrophoresis and transferred to membranes by Southern blotting. Hybridization of the membrane to a labeled DNA probe then determines the size of the probe-complementary fragment. RFLP occurs when the perceived fragment size varies between individuals. Each fragment size is considered an allele and can be used for genetic analysis.

3. Random Amplified Polymorphic DNA (RAPD):

The RAPD marker is a type of PCR-based marker used for genetic mapping. This approach is based on the amplification of random segments of DNA with a single primer of random nucleotide sequence. Oligonucleotides (approximately 10 bp in length) are used for PCR at low annealing temperatures. When an oligonucleotide hybridizes to both DNA strands at appropriately spaced sites, the region of DNA bound by those two sites is amplified. A small nucleotide change (polymorphism) at one of the two sites can interfere with oligonucleotide hybridization and thus DNA amplification.

4. Simple Sequence Repeats (SSR): Microsatellites :

SSR markers are stretches of DNA in which the same short nucleotide sequence is repeated over and over again. These microsatellite repeats are usually polymorphic in different lineages due to different numbers of repeat units. These polymorphisms are called SSRs and can be conveniently used as codominant genetic markers. A common example of a microsatellite is the (CA) repeat. CA nucleotide repeats are very common in human and other genomes, occurring every few thousand base pairs. Microsatellites designed for a specific species are often applicable to closely related species, although the proportion of loci that are successfully amplified may decrease with increasing genetic distance.

Advantages of Molecular Markers

1. Molecular markers can be used for several applications including: genetic diagnostics, characterization of germplasm & transformants and for study of genome organization and phylogenetic analysis.
2. They are relatively simple to detect.

3. They are present in abundance throughout the genome even in highly bred cultivars.
4. These are highly accurate and completely independent of environmental conditions.
5. They can be detected at virtually any stage of plant development.

Table 1: Molecular Markers Used In Some Crop Plants

Crop	Pathogen	Gene	Marker	Reference
Pepper	Tomato spotted wilt virus	Tsw	RAPD	Jahn <i>et al.</i> , 2000
Carrot	<i>Meloidogyne javanica</i>	Mj-1	STS	Boiteux <i>et al.</i> 2004
potato	<i>Verticillium dahliae</i>	CMV-B2	RAPD	Simko <i>et al.</i> , 2004
Melon	<i>Fusarium oxysporum f. sp. melonis</i>	Fom2	SSP	Wechter <i>et al.</i> , 2005
pepper	<i>Pyramiding Potyvirus</i>	Pvr4	CAPS	Carole <i>et al.</i> 2005
Bean	<i>Common bean mosaic virus</i>	1	RAPD	Melotto <i>et al.</i> , 2007
Cucumber	<i>Fusarium oxysporum f. sp. melonis</i>	Fom2	SSP	Wechter <i>et al.</i> , 2008
pepper	<i>Nematode</i>	N	SCAR	Carole <i>et al.</i> , 2009

Advantages of Marker Assisted Selection in Crop Plants

1. Tracks traits of interest over generations using markers.
2. Recessive alleles can also be identified by linked markers.
3. Multiple resistance genes can be combined together in the same breeding line.
4. Eliminates environmental effects.
5. Allows selection of traits that are difficult to evaluate phenotypically.
6. Selection can be carried out at the seedling stage and can assay for traits before they are expressed.
7. Shortens the selection period in breeding programmes.

Conclusion:

Plant breeding has made tremendous progress in improving crops and it is imperative that this continues. It is clear that current breeding programs continue to advance through commonly used

breeding approaches. Although the impact on cultivar development has so far been minimal, MAS can greatly help plant breeders achieve this goal. Facilitating integration into breeding programs, fully understanding current obstacles, and developing appropriate solutions are essential to realizing the potential of MAS. Harnessing the advantages of MAS over conventional breeding can have a significant impact on yield improvements. The high cost of MAS will continue to be a major obstacle to the introduction and plant breeding of several crop species in developing countries in the near future. Certain MAS strategies may need to be tailored to specific crops, traits and available budgets. New marker technology could potentially significantly reduce the cost of MAS. Once the new methods are validated and the instruments are readily available, MAS should become more widely applicable in plant breeding programs.

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RECOGNITION OF PATHOGEN BY PLANTS: A REVIEW

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ABSTRACT

Plants have an innate immune system to defend themselves against pathogens. The primary immune system enables plants to recognize potential pathogenic microbe-associated molecular patterns (MAMPs) through pattern recognition receptors (PRRs), which mediate basal defense responses. Plant pathogens suppress this basic defense response through effectors that enable disease induction. The secondary immune system has given plants the ability to recognize effector-induced perturbations of host targets via resistance proteins (RPs) that mediate potent local defense responses that halt pathogen growth. Both primary and secondary immune responses in plants rely on the germline-encoded PRR and RP. During the induction of local immune responses, systemic immune responses are also activated, making plants more resistant to subsequent pathogen attack. This review provides an overview of recent discoveries and different models in recognition of pathogens by plants that have improved our understanding of plant innate immunity and the arms race between plants and their pathogens.

Keywords: Recognition, Plant, Defense, Elicitors, Receptors, Resistance

Introduction

Recognition is "the first event of intercellular communication that elicits defined biochemical, physiological and morphological responses. It is an early specific event that induces rapid response by host, either facilitating or impeding further growth of pathogen. Recognition of pathogen triggers a large range of inducible defense mechanisms leads to resistance in plants. Various mechanisms induced at site of infection like synthesis of antimicrobial compounds called phytoalexins, alteration in synthesis of cell wall structural proteins and response is generated which is involved in defense signal transduction.

Two types of plant resistance responses to potential pathogens:

The non-host resistance response (frequent):

Non-host resistance (basic incompatibility) is exhibited by all plant species that respond to potential pathogen without apparent R\avr gene combinations.

The race\cultivar- specific host resistance response (comparatively rare).

It is genetically defined by the direct or the indirect interaction between the product of a dominant or Semi dominant major plant resistance gene (h) the Complementary product of the Corresponding dominant pathogen avirulence (avr) gene.

Host components acting as signals for recognition

1. Fatty acids of the plant cuticle
2. Galacturonan molecules of host pectin,
3. Phenolic compounds, such as strigol, which stimulate activation and germination of propagules of some pathogens; and isoflavones and
4. Other phenolics such as amino acids, and sugars released from plant wounds that activate a series of genes in certain pathogens leading to infection.
5. Surface characteristics such as ridges or furrows, hardness, or release of certain ions such as calcium.

Elicitors: Elicitors are the substances produced by the pathogen which stimulate the host defence response

General elicitors:

1. **Glucans**, produced by *Phytophthora* and *Pythium*, derived from oomycete cell wall, induce phytoalexins
2. **Chitin oligomers**, by higher fungi, from chitin of fungal cell wall, induce phytoalexins and lignification
3. **Pectin oligomers**, by fungi and bacteria, from degraded cell wall, inhibit proteins and defense genes
4. **Harpins**, by several gram-negative bacteria, part of type III secretion, cause HR and defense gene response
5. **Flagellin**, by gram-negative bacteria, part of flagellum, cause callose formation and defense gene response
6. **Glycoproteins**, by *Phytophthora*, induce phytoalexin production and defense gene response
7. **Glycopeptide fragments**, by yeast, activate defense genes and ethylene production
8. **Ergosterol**, by various fungi, the main sterol of higher fungi, causes alkalization in cell cultures
9. **Bacterial toxins**, such as coronatine of *P. syringae*, toxin, disturbs salicylic acid, mimics jasmonic acid, and induces defense genes and defense compounds
10. **Sphinganine**, the fumonisin analog, by *F. moniliforme*, a necrotic toxin, interferes with sphingolipid utilization and induces defense genes and programmed cell death (PCD)

Race-specific elicitors:

1. **avr gene products, Avr proteins**, by fungi and bacteria, in some cases promoting virulence, HR, and PCD
2. **Elicitins**, by *Phytophthora* and *Pythium*, scavengers of sterol, induce HR in tobacco
3. **Enzymes**, e.g., endoxylanase, by *Trichoderma viride*, fungal enzymes, induce defense genes and HR.
4. **Viral proteins**, e.g., viral coat proteins, by TMV, structural component, HR in tobacco, tomato
5. **Protein or peptide toxins**, e.g., victorin, by *Cochliobolus victoriae*, toxin for host, induces PCD in oat
6. **Syringolids (acyl glycosides)**, by *P. syringae* *pv.* *syringae*, signal compound for bacterium, HR in soybean, carrying the *Rpg4* resistance gene

PERCEPTION

Perception is how pathogens and hosts perceive each other. This is surface phenomenon in which triggers are receptors. Direct or indirect. After evaluating a large number of physiological,

biochemical and genetic experiments, various models have been proposed because the basis of all models is the intergenic relationship between host and pathogen, which induces breed-specific resistance. has become important. Recognition of plant surface signals by pathogenic fungi is a signaling pathway mediated by cyclic adenosine monophosphate (cAMP) and mitogen-activated protein kinase (MAPK) involved in the development of infection-related phenomena and regulation of appressorium formation.

Cyclic adenosine monophosphate (cAMP)

Transmission of the cAMP signal proceeds via the cAMP-dependent activity of protein kinase A (= PKA) and subsequent phosphorylation of target proteins. The major activity of PKA in developing germ tubes is the mobilization of carbohydrates and lipids to the appressorium site and is, therefore, pivotal to the production of functional appressoria. In some fungi, cAMP signaling is required for the Initiation of appressorium development, at which time intracellular cAMP concentrations rise during differentiation of conidia and emergence of the appressorium germtube. Subsequently, cAMP levels fall as the germ tube extends and, if more cAMP is added at this point, further development of the germ tube is inhibited.

Mitogen-activated protein kinases (MAPKs)

Infection-related developmental signaling pathways are also accomplished by mitogen-activated protein kinases (MAPKs) and their upstream regulatory kinases. Together they form a functional unit that transmits input signals from the cell periphery to the cell nucleus to trigger the expression of the corresponding genes. A MAP kinase, K1 or P1, regulates appressorium formation in response to a signal from the plant surface but it is also required for invasive growth or viability in its host plant.

Mechanisms of Recognition

The recognition process during the interaction between host and the pathogen represents a Signal-Sensor reaction i.e. a signal or elicitor is released from the pathogen and is received by the sensor or receptor located, most probably on the surface of the host cell. the elicitor is the avirulence product (A) where as receptor (sensor) is the resistance factor. The ensuing recognition event between them generate a signal transduction pathway that ultimately affect the sites (s) of the plant cells that are responsible for activating defence reaction. After no. of physiological, biochemical and genetic experiments, four models have been proposed to demonstrate the nature of recognition reaction and the expression of the defense reaction:

- ❖ **The Elicitor- Receptor model**
- ❖ **The Dimer Model**
- ❖ **The Ion Channel defense model**
- ❖ **The Suppressor- receptor model.**

The basis for all the four model is gene-for- gene relationship between host and the pathogen for triggering race specific resistance. The elicitor receptor model is based on physiological and biochemical experiments. The Dimer model applies to the expts of elicitor- receptor model a stringent and formal genetic interpretation that refer to genetic regulation in bacteria, The Ion Channel defense model departs from electro and membrane physiological experiments by introducing into the discussion membrane bound ion channels combined with receptor for elicitors, enzyme complexes and second messengers which together form signal transduction chain that can alter the metabolic activities of the plant cell. The suppressor- receptor model refers to the same experimental results of elector- receptor model but interpret them using different assumptions.

Elicitor-Receptor Model (Albersheim *et al.*, 1981)

This hypothesis involve the two gene group system of plant genes,

1. Where one gene act as a sensor within the signal-sensor reaction that help in pathogen recognition

Dimer Model Given by Ellingboe 1982.

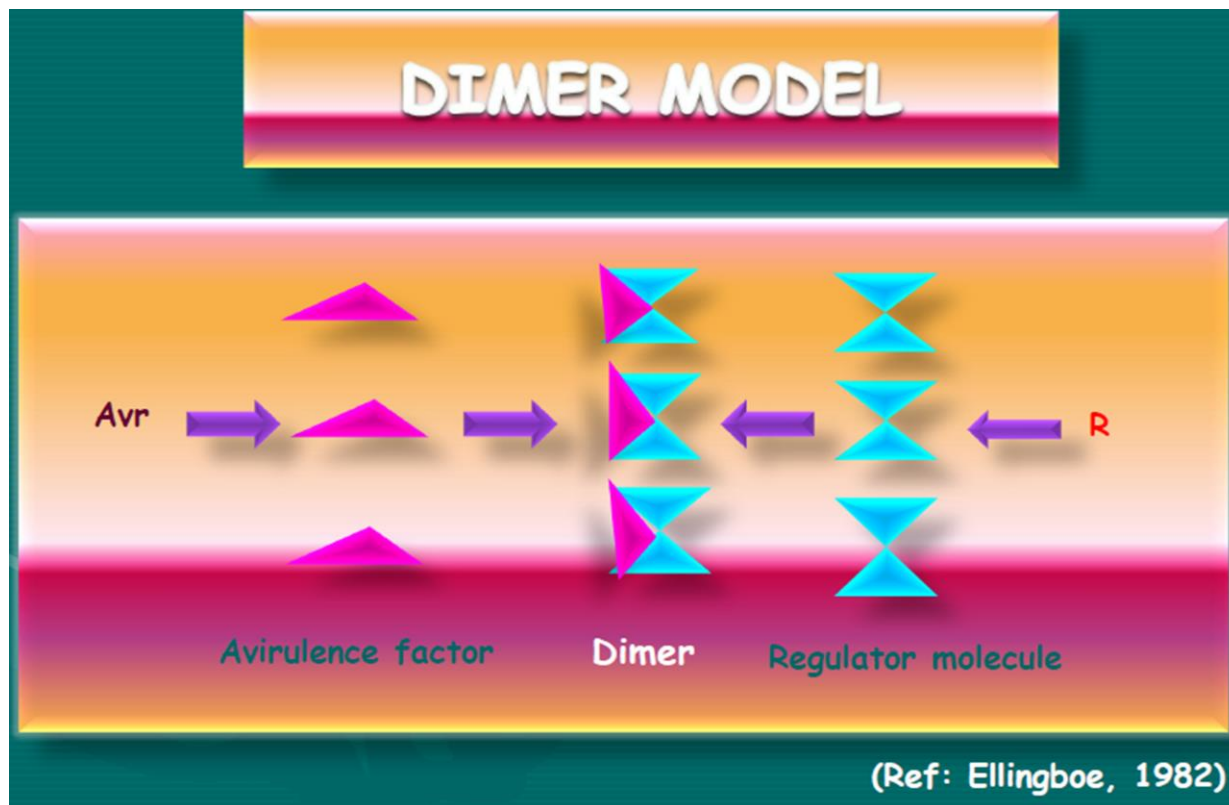
It is based on the hypothesis that Avr product and R-gene product form a dimer ie, single gene in the host and single gene in pathogen form a product made up of two gene products. Dimers act as negative regulators, directly blocking gene expression, establishing basal compatibility, and causing parasitism. Dimers act as genetic regulators at the transcriptional level. The products of the avirulence and resistance genes that form dimer were proposed to consist:

- Either of the corresponding mRNAs,
- The translated proteins of both genes or one mRNA and one translated protein of each one of the portion.

There was also the possibility that the dimer consisted of 2 primary gene products bound to particular site on the DNA, or that from the dimer some regulatory active molecule is cleaved of it. Once the basic compatibility is blocked by the dimer basic resistance is restored. Dimer model is in contrast to E-R model which assumes that new defense mechanism are established by the host plant in the presence of basic compatibility. The dimer was also proposed to release Hypersensitive cell death, but no mechanism for this function was proposed. The restoration of defense mechanism belonging to basic resistance by the action of dimer may be called as reactivated defense.

There are two main differences between the dimer and E-R model

- The dimer model is based on the idea that the defense mechanisms of basic resistance are re activated by the regulatory action of the dimer where as in E-R model, new defense mechanism are established in the presence of basic compatibility.
- Specific recognition between non-virulence and resistance factors results in dimers that act directly at the DNA level as genetic regulators, whereas in the E-R model specific recognition at the plasma membrane is followed by additional responses. Causing the linkage and expression of defense genes within the cell nucleus. In other words the pathogen defense or incompatibility according to the dimer model is believed to result from a block of reaction chains involved in basic compatibility or pathogenicity, whereas the E-R model regards incompatibility as the establishment of new defense mechanism in the presence of already existing basic compatibility.

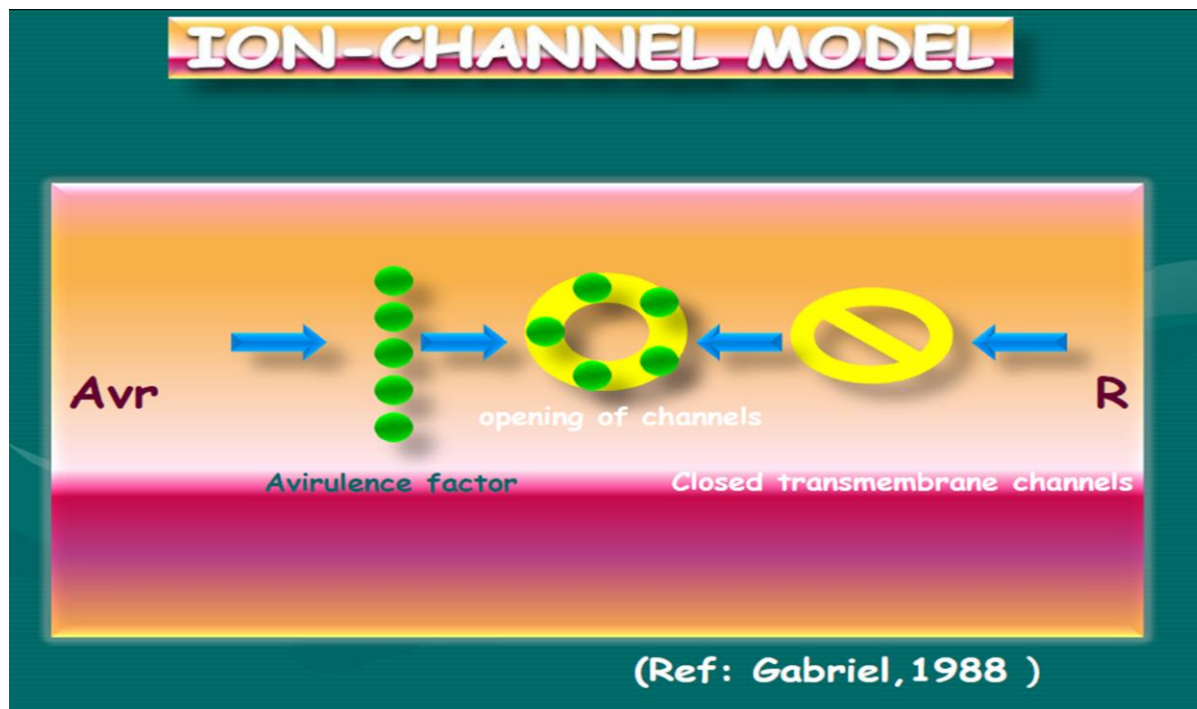


ION CHANNEL MODEL- Gabriel,1988

It gives emphasis on the interaction between elicitor and resistance gene product from more or less immediate effect on gene expression to the epigenetic level. This level represents network of signal transduction process that regulate metabolic activities by either activating or blocking gene expression, permanently or transiently. It assumes that trans-proteins located at the cell surface, some of which function as ion channels, provide all the steps necessary for triggering race specific resistance. Thus, the same system provides not purely pathogen recognition but also for the transduction of signals involved in pathogen defence.

These experiments showed that

- Electrical membrane potential ion concentration in cytoplasm are key elements in the signal transduction.
- In plants membrane bound ion pumps plants crucial role in maintaining concentration gradients between the all interior and exterior Ca^{2+} ions play important role in controlling transcription activation.
- A small increase in Ca^{2+} concentration in cytoplasm activate transcription and other metabolic processes. Hence, integrity of plasmalemma and tonoplast are of vital importance for all its metabolic activities.
- Another reason for proposing this model was plants subjected to stress such as chemical wounding or infection or due to pathogen toxin or effectors, loss of electrolytes from the affected cell or tissue.
- First response is efflux of or leakage of K^{+} Ions. The loss of electrolytes and membrane depolarization results from recognition event associated with the pathogen attack that ends in hypersensitive response.



- Recognition between specific elicitor, the Avr product of pathogen and its corresponding trans-membrane protein result in plant to trigger the opening of trans-membrane protein linked to ion channels thereby opening of channel leads to
 - -efflux of K^+ to Cl^- .
 - -Influx of H^+ to Ca^{2+}
 - -the so called K^+/H^+ response depolarization.
 - Complete membrane disintegration leads to instant cell death but local impairment could liberate signals which would diffuse into neighboring cells inducing stress reaction in them.

Intensity of the signals triggered by recognition between elicitor to trans-membrane protein depends upon

- (i) Size and number of ion channel,
 - (ii) Binding intensity to membrane proteins
 - (iii) Magnitude and speed of substance exchange through the cell membrane
- Basic ion channel defense model was further modified by speculation about the nature of function of transmembrane proteins.

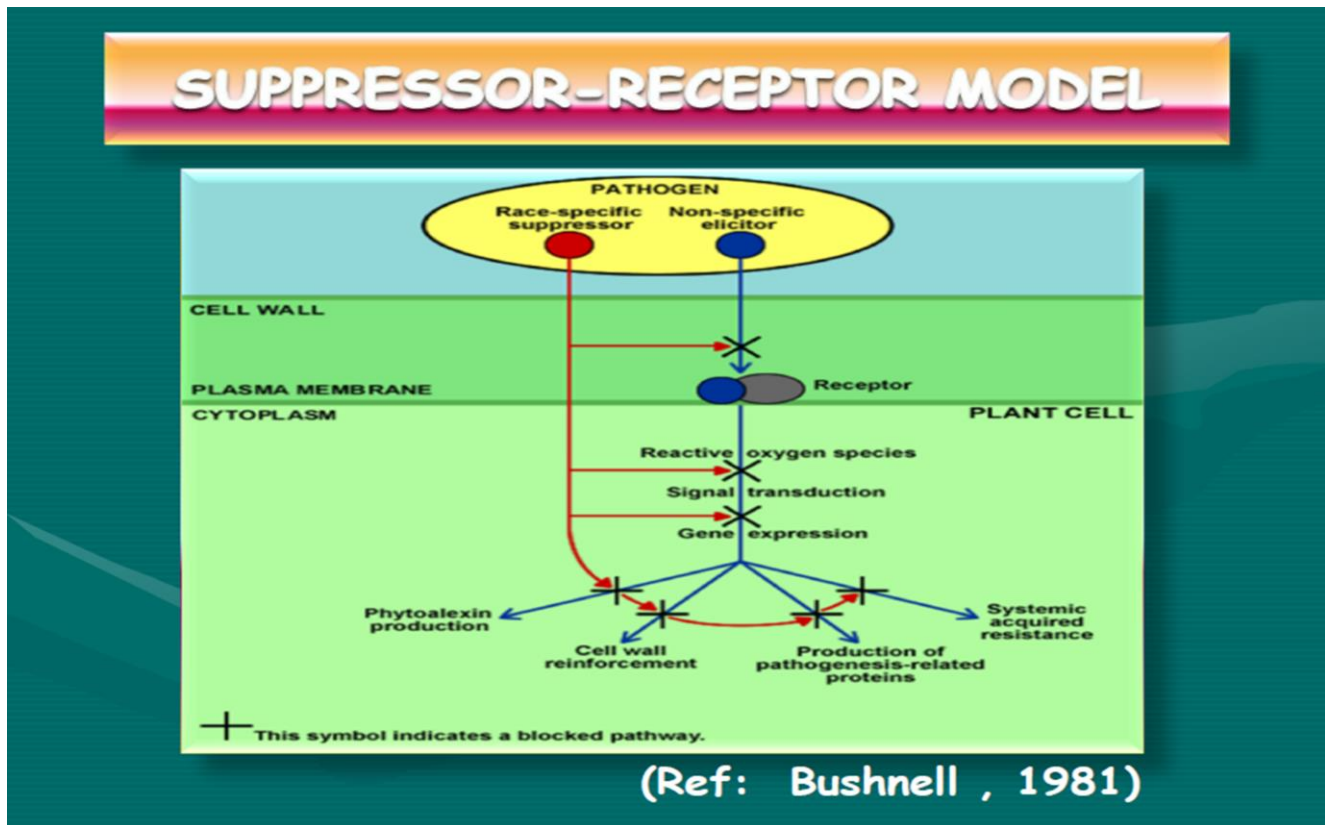
Three kinds of membrane proteins:

- I. **Highly conserved:** Recognize endogenous receptors e.g. Cellular
- II. **Less well conserved:** Recognize exogenous receptors originating from pathogen e.g. chitin, glucose.
- III. **Non-conserved:** Recent in evolutionary origin. Recognize environmental avirulence factor, host selective toxin.

SUPRESSOR RECEPTOR MODEL

Model was extended by Bushnell and Rowell (1981) and Heath (1982). It is based on the fact that all plants are susceptible to attack of any pathogen and hence plant exhibit basic compatibility. However, basic compatibility is counteracted by a general elicitor produced by all pathogen which releases unspecific basic resistance. In order to colonize a particular plant the homologous pathogen has to produce specific suppressor to block the action of general elicitor i.e. pathogen blocks secondarily its own elicitor of basic resistance. It assumes that active basic resistance is triggered unspecifically by general acting elicitors produced by all pathogens is likewise recognized by receptors present in all plants. However, part pathogen become compatible with certain plant species because of mutation, the pathogen produces a species specific suppressor that prevents its general elicitor from acting on plant receptor or block elicitor receptor interaction in other way, disturbing subsequent signal transduction, or hindering formation or action of effector. In short, basic resistance would be prevented by specific suppressor produced by pathogens thus allowing basic compatibility

- ❖ Thus Bailey described this as elicitor/specific suppression, to counteract to the release of active basic resistance by a specifically acting elicitor.



GENE FOR GENE CONCEPT

It is defined as, for each gene that confers the virulence in pathogen there is corresponding genes in host that confer the resistance in host and *vice versa*. Flor reported that the outcome of the interaction between flax and the flax rust fungus was determined by "corresponding" genes in the two partners, which led to the elaboration of the "gene-for-gene" hypothesis. In this scheme, a dominant resistance (*R*) gene confers resistance only to those races or strains of the pathogen expressing the corresponding dominant avirulence (*avr*) gene. This simple genetic relation, which gives a good account of many plant pathogen interactions, suggests a physical interaction between the products of paired *R* and *avr* genes. Two reports in this issue finally provide direct evidence for such a ligand-receptor mechanism underlying plant pathogen recognition *avr* genes encode a diverse group of proteins with few common features. In contrast, *R* genes, which mediate resistance to diverse pathogens, share common structural elements suggestive of a signal transduction function. Indeed, activation of *R* gene products induce the

hypersensitive resistance response, a battery of protective mechanisms, and rapid death of challenged host cells.

Conclusion: In recent years, great progress has been made in understanding the molecular basis of plant primary and secondary defense responses to pathogens. Plant pathogens must overcome both the plant's primary and secondary lines of defense to successfully infect and maintain nutrition. Effectors capable of suppressing or manipulating both layers of defense have been reported for bacteria, fungi, and oomycetes. Plants have co-evolved with facultative and obligate biotrophic pathogens for millions of years. This suggests that plants and their leading to an ongoing arms race among pathogens. These RPs can be quickly overcome by pathogens through adaptive evolution. Sequenced genomes of pathogens and plants have shown that pathogens can secrete up to several hundred effectors that are utilized to manipulate host plants, and that host plants contain many RPs that monitor effector activity. increase. Some effectors can target and modify different domains of important host proteins. His RIN4 of *B. A. thaliana*. Other effectors interact directly with RP. All of these different types of interactions are under strong selective pressure, leading to an arms race between host plants and pathogens, indicating different modes of pathogen adaptation to the plant's own immune system. . The lack of a combinatorial adaptive immune system in plants is apparently compensated for by the presence of remotely acting SARs, which facilitate plants to more efficient defense against repeated pathogen attacks. As with other organisms, most plants in nature are healthy and not attacked by pathogens.

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