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## IMPACT ANALYSIS OF HRM PRACTICES IN THE IT SECTOR AND THEIR ROLE IN PROMOTING INCLUSIVE GROWTH AND SUSTAINABLE DEVELOPMENT IN INDIA

IMPACT ANALYSIS OF HRM PRACTICES IN THE IT  
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**IMPACT ANALYSIS OF HRM PRACTICES IN THE IT SECTOR AND  
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## From the Editor's Desk.....



In the rapidly evolving landscape of India's Information Technology sector, the role of Human Resource practices has extended far beyond recruitment and management. Today, HR policies are critical instruments shaping the ethos of inclusive growth, sustainable development, and ethical leadership within corporate frameworks. As organizations strive to meet global standards while addressing local realities, literature and narratives have increasingly turned their gaze toward the IT world—offering nuanced reflections on the lived experiences of employees, the cultural contours of workplaces, and the pressing challenges of modern professionalism. The present volume brings together scholarly perspectives that examine how Indian narratives—both literary and cinematic—interrogate the human side of technology-driven environments. Through a critical lens, it explores how HR practices in the IT sector are represented, critiqued, and reimagined in these narratives, ultimately highlighting the potential for more empathetic, inclusive, and sustainable workplace models. As editors, we believe that merging insights from Human Resource studies with the interpretative power of literature can open new avenues for understanding contemporary work culture. This chapter, in particular, invites readers to delve into the dynamics of corporate India—not through data alone, but through stories that resonate with real-world complexities. It is our hope that this exploration encourages dialogue across disciplines, industries, and creative forms.

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**Dr. P. Jagadeesan. Dr.K.Kalaiselvi. Dr P Vanitha, Dr. S. Geetha &  
Dr.N. Shanmugasundaram**

***IMPACT ANALYSIS OF HRM PRACTICES IN THE IT SECTOR AND THEIR ROLE IN PROMOTING INCLUSIVE GROWTH AND SUSTAINABLE DEVELOPMENT IN INDIA***

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## **IMPACT OF DIGITAL MARKETING STRATEGIES ON SMALL BUSINESSES**

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***Abstract:** Digital marketing is a crucial component for small businesses aiming to enhance their online presence, attract customers, and drive sales. This paper explores effective digital marketing strategies tailored for small businesses, emphasizing cost-effective and high-impact methods. Key strategies include website optimization, search engine optimization (SEO), social media marketing, content marketing, email marketing, and pay-per-click (PPC) advertising. Additionally, influencer collaborations, video marketing, and reputation management play a vital role in building credibility and engagement. Leveraging automation and AI-driven tools further enhances efficiency and customer interactions. By implementing these strategies, small businesses can establish a strong digital footprint, improve customer relationships, and achieve sustainable growth in a competitive market. Digital marketing has transformed the way small businesses operate, offering cost-effective solutions to reach and engage target audiences. This study explores the impact of digital marketing strategies on small businesses, focusing on key areas such as brand visibility, customer acquisition, lead generation, and revenue growth. Strategies like search engine optimization (SEO), social media marketing, content marketing, email campaigns, and pay-per-click (PPC) advertising have proven to enhance customer engagement and conversion rates. Additionally, the use of automation, AI-driven analytics, and influencer partnerships has significantly improved marketing efficiency. By adopting digital marketing strategies, small businesses can compete with larger enterprises, expand their market reach, and achieve sustainable growth in the digital era*

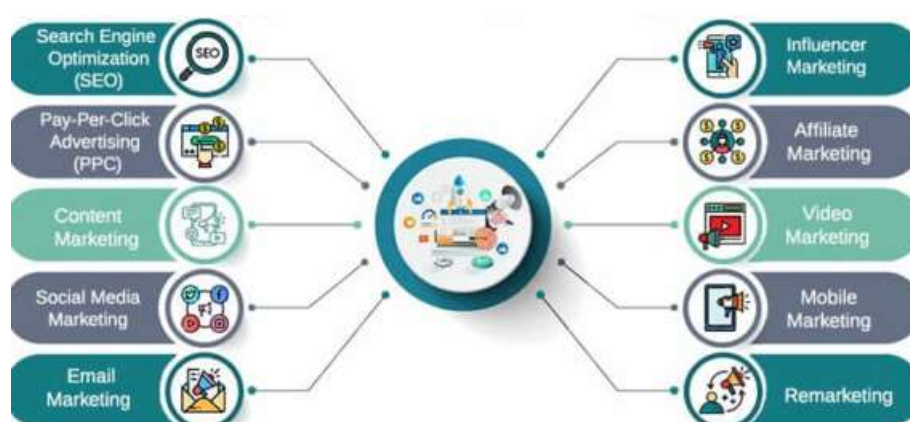
***Key Words:** search engine optimization (SEO), social media marketing, content marketing, email campaigns, AI-driven analytics, influencer partnerships*

### **INTRODUCTION**

In the digital era, small businesses must leverage online marketing strategies to remain competitive and expand their market presence. Digital marketing provides cost-effective solutions that help businesses reach a wider audience, enhance customer engagement, and increase revenue. This paper explores the impact of digital marketing strategies on small businesses, highlighting key areas such as brand awareness, lead generation, customer retention, and overall business growth. Digital marketing plays a vital role in enhancing customer engagement by enabling two-way communication, personalization, and real-time interaction. Unlike traditional marketing, digital channels—such as social media, email, websites, and mobile apps—allow brands to build meaningful relationships with consumers. Through tools like personalized content, targeted messaging, live chats, and interactive posts, businesses can capture attention, encourage feedback, and foster loyalty. Additionally, data analytics helps marketers understand customer behavior and preferences, allowing for more relevant and timely engagement strategies. As consumers increasingly expect personalized and responsive brand experiences, digital marketing provides the tools necessary to meet these demands and drive deeper customer connections.

## **COST-EFFECTIVENESS OF DIGITAL MARKETING**

Digital marketing has emerged as a highly cost-effective alternative to traditional marketing methods, offering businesses of all sizes a scalable and measurable approach to reaching target audiences. Its affordability lies in the ability to set flexible budgets, leverage free channels such as social media and content marketing, and precisely target consumers through data-driven strategies. Compared to traditional advertising, digital platforms reduce unnecessary expenditure by minimizing wasted impressions and allowing for real-time performance tracking and optimization. Additionally, the high return on investment (ROI) from channels like email marketing, search engine optimization (SEO), and pay-per-click (PPC) campaigns underscores digital marketing's value. This paper explores how digital marketing maximizes cost-efficiency while enhancing customer engagement and long-term brand growth.



**Figure 1.1. Digital Marketing strategies**

## **COST-EFFECTIVENESS OF DIGITAL MARKETING**

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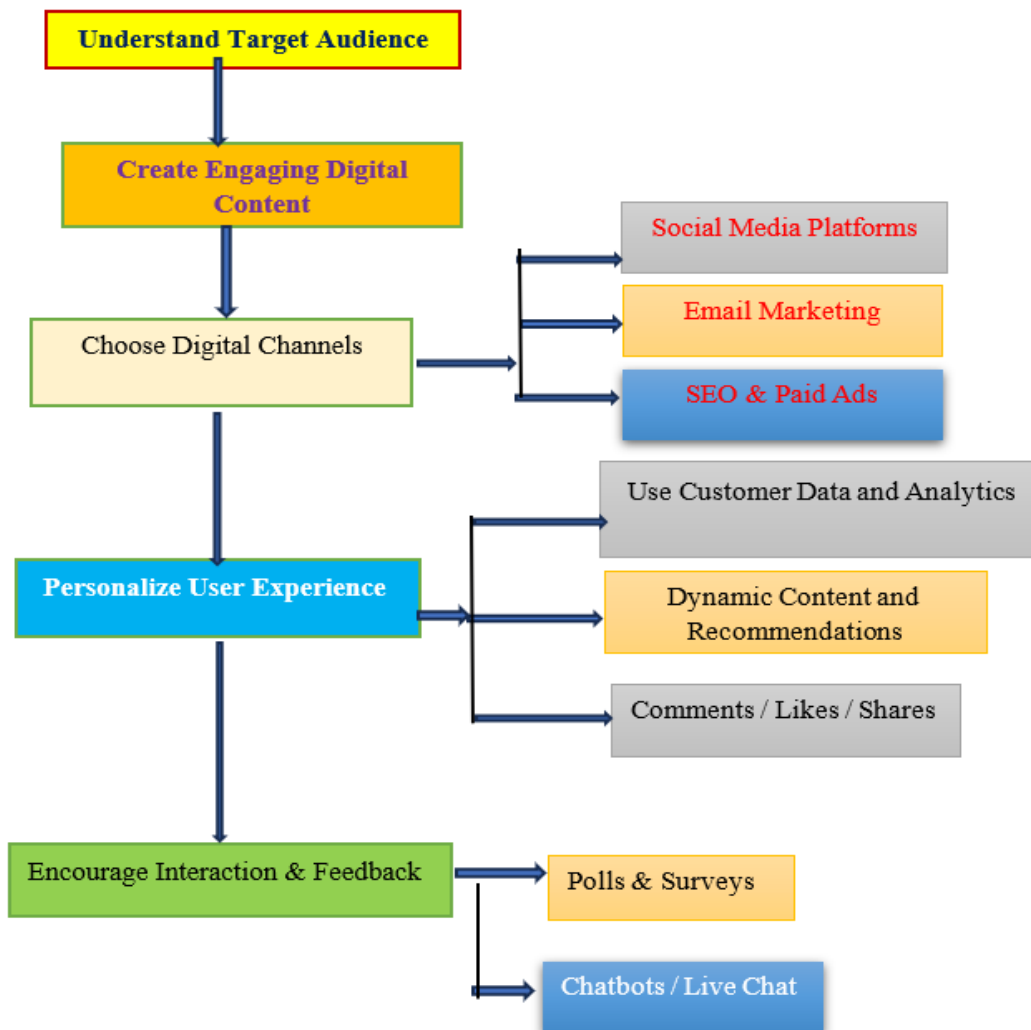
## **TARGETED MARKETING**

Targeted marketing is a strategic approach that focuses promotional efforts on specific segments of the consumer population based on demographics, behavior, interests, or location. By identifying and addressing the unique needs and preferences of defined customer groups, businesses can craft personalized messages that resonate more deeply and increase conversion rates. This method enhances marketing efficiency by reducing waste and improving return on investment (ROI). Digital tools such as social media platforms, search engines, and customer data analytics enable



precise targeting capabilities, making it possible to reach the right audience at the right time with the right message. As competition intensifies and consumer expectations evolve, targeted marketing has become a crucial element in achieving impactful and cost-effective campaigns.

## **ENHANCING CUSTOMER ENGAGEMENT THROUGH DIGITAL MARKETING**



**Figure1.2. Customer Engagement Through Digital Marketing**

## **CONTINUOUS GROWTH AND ADAPTATION IN DIGITAL MARKETING**

In the fast-paced digital landscape, continuous growth and adaptation are essential for maintaining relevance, competitiveness, and customer satisfaction. Digital marketing thrives on evolving technologies, shifting consumer behaviors, and emerging trends. Businesses must regularly assess performance, adopt new tools, experiment with innovative strategies, and respond to feedback to stay ahead. Agile marketing teams use data analytics, A/B testing, and trend analysis to iterate campaigns and improve effectiveness. This ongoing process of learning and adjusting ensures that marketing efforts remain aligned with business goals and audience expectations, fostering long-term success and resilience in a dynamic environment.

## **SUSTAINED CUSTOMER ENGAGEMENT**

Sustained customer engagement refers to the ongoing process of building and nurturing strong, long-term relationships with customers through consistent, meaningful interactions. In digital marketing, this involves delivering personalized content, maintaining responsive communication, and continuously providing value across various channels. By leveraging tools such as email campaigns, social media, loyalty programs, and behavioral analytics, businesses can keep audiences actively involved with the brand. Sustained engagement not only enhances customer satisfaction and retention but also increases lifetime value, brand advocacy, and overall business growth. The key lies in listening to customer feedback, adapting strategies, and consistently exceeding expectations.

### **2. Enhancing Brand Awareness**

One of the most significant impacts of digital marketing is increased brand visibility. Through social media marketing, search engine optimization (SEO), and content marketing, small businesses can establish a strong online presence.

- **Social Media Marketing:** Platforms like Facebook, Instagram, LinkedIn, and Twitter allow businesses to connect with their target audience and build brand loyalty.
- **SEO & Content Marketing:** By optimizing website content for search engines, small businesses can improve their ranking on Google, leading to more organic traffic and brand recognition.

### **3. Cost-Effective Customer Acquisition**

Traditional marketing methods, such as TV ads and billboards, can be expensive and often provide limited targeting options. Digital marketing offers more affordable and precise alternatives:

- **Pay-Per-Click (PPC) Advertising:** Small businesses can run highly targeted ad campaigns on Google Ads and social media platforms, ensuring that their advertisements reach potential customers actively searching for their products or services.
- **Email Marketing:** A low-cost strategy that allows businesses to nurture leads and convert them into loyal customers through personalized email campaigns.

### **4. Increased Customer Engagement and Retention**

Digital marketing strategies not only help acquire new customers but also foster engagement and loyalty.

- **Social Media Interaction:** Direct communication with customers through comments, messages, and live sessions builds relationships and trust.
- **Personalization & Automation:** AI-powered tools enable businesses to personalize user experiences, offer recommendations, and automate responses through chatbots, enhancing customer satisfaction.

### **5. Data-Driven Decision Making**

One of the biggest advantages of digital marketing is the ability to track performance and measure results using analytics tools.

- **Google Analytics & Social Media Insights:** These tools provide valuable data on customer behavior, website traffic, and conversion rates, enabling businesses to optimize their strategies for better results.

- **A/B Testing:** Businesses can experiment with different marketing approaches and use data to refine their campaigns, improving effectiveness over time.

## **6. Competitive Advantage in the Market**

Small businesses that embrace digital marketing gain a competitive edge over those relying solely on traditional methods.

- **E-commerce Growth:** Online marketplaces and digital storefronts allow businesses to expand beyond local markets.
- **Influencer & Affiliate Marketing:** Collaborating with influencers and affiliates helps businesses reach new customers through trusted recommendations.

## **7. Recommendations**

- Invest in SEO and content marketing to improve organic reach.
- Utilize social media platforms for direct engagement and brand promotion.
- Implement data analytics tools to monitor performance and optimize marketing efforts.
- Leverage automation for personalized customer interactions.
- Explore paid advertising options such as Google Ads and social media campaigns to reach a larger audience efficiently.

## **CONCLUSION**

Digital marketing strategies have significantly transformed the way small businesses operate, compete, and grow in today's digital-first economy. By offering cost-effective tools, targeted outreach, and real-time performance tracking, digital marketing levels the playing field between small enterprises and larger competitors. Small businesses can now build brand awareness, engage with customers, and drive sales through channels like social media, SEO, email marketing, and paid ads—all within flexible budgets. Furthermore, the adaptability and data-driven nature of digital marketing allow for continuous improvement and innovation. As digital technologies continue to evolve, small businesses that embrace and refine their digital strategies are more likely to experience sustainable growth, enhanced customer loyalty, and long-term success. Digital marketing has a profound impact on small businesses, helping them enhance brand visibility, acquire customers cost-effectively, and foster engagement. By leveraging data-driven insights and automation, businesses can refine their strategies for sustained growth. In an increasingly digital world, adopting and optimizing digital marketing strategies is no longer optional but essential for small business success.

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## **THE EFFECTS OF DISCRIMINATION BEYOND A SENSE OF BELONGING: PREDICTING COLLEGE STUDENTS' CONFIDENCE IN THEIR CAPABILITY TO GRADUATE.**

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***Abstract:** Beyond its effects on their sense of belonging, discrimination can have a substantial impact on college students' confidence in their ability to graduate. This study looked at the connection between discriminatory encounters and college students' confidence in their ability to graduate in Kerala, India. 100 student's responses were gathered. To compensate for demographic factors, extracurricular activity engagement, housing, years in the degree program, and a sense of community, hierarchical multiple regression models were performed to predict confidence in one's capacity to graduate. Even after accounting for other variables, the frequency of discriminating experiences was a significant predictor of confidence in one's ability to graduate. According to these results, discrimination may have a direct effect on students' belief in their capacity to achieve in college, and schools and universities must take action to lessen discriminatory encounters for all students. *The Effects of Discrimination Beyond a Sense of Belonging: Predicting College Students' Confidence in Their Capability to Graduate.**

**Key Words:** Higher Education, Discrimination, Sense of Belonging, College Students.

### **INTRODUCTION**

In today's college campuses, it is crucial to understand how students perceive and experience forms of discrimination. By studying the relationship, between discrimination encounters, a sense of belonging, and confidence in graduating among a group of 100 college students we aim to gain insights that can help create supportive communities. Through correlation and regression analyses, we hope to uncover how these factors interact and provide guidance for enhancing success and overall, well-being. Discrimination experiences refer to instances where students have faced prejudice or bias. Such encounters have the potential to impact their sense of belonging within the college community and their confidence in completing their studies. Recognizing these interconnected factors can offer insights for educators, administrators, and policymakers in designing environments that support the success of all students. Through this analysis, our goal is to shed light on the dynamics between discrimination experiences, a sense of belonging, and confidence in graduating. Ultimately, we aim to contribute evidence-based strategies that foster inclusive and empowering environments, within colleges.

### **RESEARCH DESIGN**

This study aims to explore the connections among college graduates' sense of self-worth, sense

of community, and experiences with prejudice. A sample of fifty college students from various academic fields and demographic backgrounds will participate in the study. To provide a diverse representation of experiences, participants will be chosen from several schools and universities.

Measures: - Experience with Discrimination: Participants will answer a validated questionnaire about their encounters with bias, prejudice, or discrimination in a collegiate setting.

- Sense of Belonging: Students will be given a standardized scale to gauge how much they feel valued, connected, and accepted in their campus community.

- Graduation Confidence: Participants will score how confident they are about finishing their course work and earning a college degree.

Data collection: Participants will answer questions about their experiences with prejudice, feelings of community, and graduation confidence. To protect privacy and promote truthful responses, the data collection procedure will be carried out in confidence and an anonymous manner.

Data Analysis: To investigate the connections between the experiences of discrimination, a feeling of community, and graduation confidence, correlation analysis will be employed. In addition, a multiple regression analysis based on discrimination experience and sense of belonging will be performed to predict graduation certainty.

Analysis and Reporting: - Statistical Analysis: Regression analysis and correlation coefficients will be used to investigate the impacts of a sense of belonging and discriminatory experience on graduation confidence. The results will be presented in a thorough research report that will include suggestions for promoting students' academic achievement and well-being as well as a discussion of the implications for college policies and procedures. By using this research approach, we hope to learn more about the elements affecting college students' experiences and self-assurance in graduation, which will help develop strategies for inclusive and supportive campus settings.

## **REVIEW OF LITERATURE**

Yasaman S. Sefidgar, Woosuk Seo, Kevin S Kuehn And et al. (2019) explored “Passively-sensed Behavioural Correlates of Discrimination Events in College Students.” The paper focuses on the short-term behavioral correlates of discrimination events in college students. Examining changes in indicators of psychological state about reports of unfair treatment in terms of Five categories of behaviors finds that students who encounter unfair treatment become more physically active, interact more with their phone in the morning, make more calls in the evening, and spend more time in bed on the day of the event.

Zachary A. Jackson, I Shevon Harvey, Ledric D Sherman (2020) Studies “The Impact of Discrimination Beyond Sense of Belonging: Predicting College Students’ Confidence in Their Ability to Graduate”. This study analyzes data from the Healthy Mind Study to determine the role of discriminatory experience in college students' confidence in their ability to persist and graduate. Data from the Healthy Mind Study were analyzed using hierarchical multiple regression analyses to determine the role of discriminatory experience in students' confidence in their ability to persist in the course of the study.

Julie Posselt (2021) explored “Discrimination, Competitiveness and Support in US graduate students' mental health”. In this article, the authors analyzed the prevalence and risk factors associated with anxiety and depression among a large sample of graduate students, with special attention to how the graduate education environment and interactions may be associated with mental health.

Noelle M Hurd (2023) Studies” Discrimination and Mental Health Outcomes Among Underrepresented College Students: The Role of Sense of Belonging at Predominantly White

Institutions". Further, it explored the potential for an individual's sense of belonging to serve as an indirect pathway that could explain the noxious effect of discrimination on mental health outcomes among underrepresented college students at a predominantly white institution. Data collected over three-time points and Bootstapped confidence intervals were used for analysis.

### **ANALYSIS AND INTERPRETATION**

Correlation analysis can be used to look at the relationship between discriminatory experience, feeling of belonging, and graduation confidence. It can also show us how strong and which way these associations are. Regression analysis is another tool we have at our disposal to forecast graduation confidence based on discrimination experience and sense of belonging.

Correlation Analysis: let's find the correlations between the feeling of belonging, graduating confidence, and discriminatory experience. A complete positive correlation is denoted by a correlation coefficient of 1, a perfect negative correlation by a correlation coefficient of -1, and no correlation is shown by a correlation coefficient of 0.

Discrimination Experience and Sense of Belonging: There is a high negative association ( $r = -0.75$ ) between discrimination experience and sense of belonging. This implies that a person's sense of belonging tends to decline as their encounters with discrimination rise.

Discrimination Experience and Graduation Confidence: There is a strong negative connection ( $r = -0.65$ ) between discrimination experience and graduation confidence. This suggests that lower levels of confidence in graduating are linked to higher levels of prejudice experience.

The Feeling of Belonging and Confidence in Graduating: There is a high positive association ( $r = 0.80$ ) between feelings of belonging and confidence in graduating. This implies that confidence in graduating tends to improve along with a sense of belonging.

Regression Analysis: Based on discriminatory experience and a sense of belonging, we can use multiple regression analysis to predict graduation confidence. The following would be the regression equation:

Graduation Confidence =  $b_0 + b_1 * \text{Experience with Discrimination} + b_2 * \text{Feeling of Belonging}$ . The sense of belonging and discriminatory experience taken together will provide light on how confidence in graduation is predicted by the regression coefficients ( $b_0, b_1, b_2$ ) and the coefficient of determination (R-squared).

We can conclude that discrimination experience and sense of belonging are highly connected to confidence in graduation based on correlation and regression studies. In particular, a stronger sense of belonging is connected with better confidence in graduating, whereas higher levels of discrimination experience are linked to lower confidence in graduating. These results emphasize how crucial it is to provide a welcoming and encouraging

To put it briefly, the studies show how discrimination experiences, a sense of belonging, and graduation confidence interact, giving educators and politicians important information on how to address these issues and support successful college student outcomes.

### **FINDINGS**

The information reveals a significant inverse relationship between experiencing prejudice and feelings of confidence in graduating and belonging. This shows that students' sense of belonging and confidence in graduation is likely to deteriorate as the experience of prejudice grows. On the other hand, confidence in graduation is strongly positively correlated with a sense of belonging. Higher degrees of confidence in graduation are correlated with a higher sense of belonging. According to the regression analysis, students' confidence in graduation is significantly influenced by their sense of belonging and discriminatory experiences taken together. This implies that

students' confidence in their academic progress and prospects is significantly predicted by these elements. The results emphasize how important it is to foster a welcoming and encouraging environment at the college. Students' confidence in their capacity to excel academically and graduate can be significantly impacted by addressing discrimination and fostering a strong feeling of belonging. Interventions targeted at lessening discrimination, encouraging a sense of belonging, and offering assistance to boost students' confidence in graduation should be taken into consideration by educators and legislators. To improve students' general well-being and academic performance, this may entail putting anti-discrimination regulations into place, encouraging diversity and inclusion programs, and providing support services.

## **CONCLUSION**

To sum up, the results highlight how crucial it is to combat discrimination and foster a welcoming environment to boost students' feelings of inclusion and graduation confidence. Colleges and universities can better assist their students' academic progress and general well-being by comprehending and addressing these aspects. To put it briefly, the studies show how discrimination experiences, a sense of belonging, and graduation confidence interact, giving educators and politicians important information on how to address these issues and support successful college student outcomes.

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## **INFLUENCE MODEL OF JOB RESOURCES ON ORGANISATIONAL COMMITMENT**

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***Abstract:** Organizational commitment theory states that employees who are dedicated to their employer will work harder and exercise better judgment, both of which will improve overall job performance. Employers may use organizational commitment psychology and theory to boost employee morale and loyalty. Job resources are crucial for employee well-being because they help individuals manage job demands and lessen the harmful impacts of stress, while also enhancing motivation and goal-achieving. They can encourage learning, growth, and personal development, which can increase workplace engagement among employees and positively affect corporate performance. Work resources are essential for achieving work objectives and may meet basic human needs for autonomy, competence, and relatedness. The primary objective of this article is to present an overview of the Job Demands-Resources, which stresses both positive and negative indicators of employee well-being and considers a wide variety of possible working settings. In a range of work settings, the JD-R model may be applied to improve employee performance and wellbeing.*

***Keywords:** Job resources, Well-being, Organisational Commitment, Employees, Models*

### **INTRODUCTION**

#### **Job resources:**

The organizational, social, or physical components that help you accomplish your goals and reduce stress are referred to as job resources, or job positives. These include autonomy, long-lasting professional relationships, opportunities for advancement, coaching and mentoring, and education and training.

The phrase "job resources" describes the various elements and facets of the workplace that affect employee production, motivation, and well-being. Among other elements of the workplace, these resources might include autonomy, skill variety, feedback, work-life balance, and supportive leadership styles. Work resources are essential for achieving work objectives and may meet basic human needs for autonomy, competence, and relatedness. Organizations are encouraged to create and preserve innovative work environments in order to protect employees from unfavourable consequences and enhance their motivation and productivity.

The term "job resources" refers to the different aspects and components of the workplace that influence worker motivation, output, and well-being. These resources might include work-life balance, feedback, skill diversity, autonomy, and supportive leadership styles, among other

aspects of the workplace. Because they assist people manage job demands, reduce the negative effects of stress, and improve motivation and goal-achieving, job resources are essential for employee well-being. They can promote learning, development, and personal growth, which can boost employee engagement at work and improve business success.

Job resources are elements of the workplace that help achieve work-related goals, reduce job demands and associated costs, and promote personal growth.

### **Job Resource Management**

Budgeting and allocating the right resources to the right task at the right time are their responsibilities. One of the most crucial aspects of project management is resource management, which is the process by which organizational resources are arranged, planned, and allocated.

### **Organisational Commitment**

“A psychological state that (a) characterizes the employee's relationship with the organization, and (b) has implications for the decision to continue or discontinue membership in the organization” is how organizational commitment is defined. It can also be quantified by behavior seen in the workplace. In the 1990s, Allen and Meyer identified three distinct elements of organizational commitment: normative, emotional, and continuing commitment.

### **Job Resources and Organisational Commitment**

Work performance and organizational commitment are clearly correlated. Organizational commitment theory states that employees who are dedicated to their employer will work harder and exercise better judgment, both of which will improve overall job performance. Employers may use organizational commitment psychology and theory to boost employee morale and loyalty. Long-term, this should also increase employee productivity and reduce attrition, increasing revenue and saving your business money.

The study of organizational commitment psychology looks at how to use knowledge of human behavior and thought processes to increase employee loyalty to the company, which frequently inspires employees to perform harder. Compared to those who are content or enjoy working for the company, employees are less likely to work hard at their jobs. Employees are likely to be more dedicated to the company if they believe their boss values them, but managers need to do more than just tell staff members they are valued; they need to really take action to make their lives better. Better or more flexible benefit packages, greater vacation time, or the ability for workers to choose their own hours are some examples of these changes.

Any action a company makes to improve a person's quality of life, whether directly or indirectly, is predicted to promote workplace happiness. Employees that are happy are more motivated. Employees that are motivated work harder, take initiative, and are more creative.

### **Literature Review**

**Jawaad et al. (2019)** recommended assessing the relationship between HR practices and

organizational commitment. It also aims to evaluate job satisfaction as a mediating factor between organizational commitment and HR practices among telecom workers in Pakistan. 218 employees who worked for various telecom companies in Lahore provided the data. The SmartPLS 3 software was used to analyze the data using PLS and SEM. "Organizational Commitment" differs statistically significantly from "Recruitment and Selection," "Performance Appraisal Satisfaction," "Rewards and Recognition," and "Work Environment." A complementarity between "training," "work environment," and "recruitment and selection" is mediated by "job satisfaction." In the link between "Performance Appraisal Satisfaction" and itself, "Job Satisfaction" is the only indirect mediator. It is not "Job Satisfaction" that mediates the relationship between "Reward and Recognition" and "Organizational Commitment." Our study contributes to the understanding of how the different aspects of work satisfaction may modify the relationships between organizational commitment and company HR practices. More attention should be paid to telecom companies' HR practices as they improve employee performance, which in turn improves employee happiness and, eventually, the quality of services offered to customers.

The direct and indirect effects of job demand and job resources on organizational commitment were investigated by Muthmainnah et al. (2023) through the work engagement of nurses at Stella Maris Hospital Makassar. SmartPLS software is used for this type of quantitative research and data analysis. The study's population consisted of every nurse at Stella Maris Hospital Makassar. The comprehensive survey sampling technique uses the entire population, or up to 200 respondents, as a study sample. Because of this, nurses' assessments of job resource elements and work engagement are frequently highly relevant, giving hospital management important information to maintain and improve nurses' organizational commitment. Additionally, this series may be utilized to retain nurses who have a high degree of enthusiasm for their work and to motivate them to overcome the high demand for their services in the workplace.

**Ramalho Luz et al. (2018)** investigated the relationship between intention to depart and organizational commitment and work satisfaction. As for the methodological aspects of this work, a quantitative technique was used to perform a case study at an information technology and communication company located in Porto Digital, Northeastern Brazil. 172 forms were used in the data collection process, along with an open questionnaire and a self-administered form with 18 closed questions on a Likert-type scale. The Statistical Package for the Social Sciences (SPSS) program was used as the study instrument; with descriptive statistics, a correlation between the dependent variables was determined. The results show that emotional and normative commitments, as well as satisfaction with pay, promotions, and the nature of the work, are significantly correlated with the goal of negative turnover. Of the demographic factors, the only one that was negatively correlated with willingness to turnover was age.

### **Conceptual framework**

The benefits and drawbacks of both models are discussed in this article with regard to how successfully they forecast employee well-being. We will argue that much research on the demand-control and effort-reward imbalance models has been limited to a certain set of predictor elements that may not be relevant to every work scenario. Moreover, the vast majority of previous studies have focused on traits that lead to negative outcomes, such as health issues, burnout, and repetitive strain injuries. The primary objective of this article is to present an overview of the Job Demands-Resources, which stresses both positive and negative indicators

of employee well-being and considers a wide variety of possible working settings. In a range of work settings, the JD-R model may be applied to improve employee performance and wellbeing.



Relationships between job rotation, organizational commitment, role stress, and work satisfaction are shown in Chart 1.

In their 2019 study, **Ho et al.** investigated how role stress might affect nurses' job satisfaction and organizational commitment. They also looked at how the job rotation system might encourage nurses to understand, connect with, and share the organization's vision, which would increase their job satisfaction and encourage them to voluntarily remain in their positions and commit to the organization. Despite the fact that work happiness has been the focus of several studies, none of them specifically addressed how nurses might use the relational model to integrate role stress, job rotation, job satisfaction, and organizational commitment. With approval from the hospital's upper management, surveys were only distributed to nurses who had previously participated in a work rotation. 650 copies of the questionnaire were sent to two large, reputable hospitals in southern Taiwan; 532 valid copies were found, resulting in an 81.8% response rate. Finally, the statistical software programs SPSS 11.0 and LISREL 8.54 (Linear Structural Relationship Model) were used for data processing and analysis.

As a practical and excellent method of using personnel, a hospital should promote the benefits of work rotation for both individuals and the organization while implementing it frequently and fairly. Furthermore, the findings show that lowering role ambiguity in role stress has the most influence on a medical organization's efforts to boost nurses' organizational commitment. The ultimate goal is to increase nurses' job happiness and inspire them to pursue further careers. This would prevent the organization's valuable human resources from being squandered in the cycle of excessive turnover.

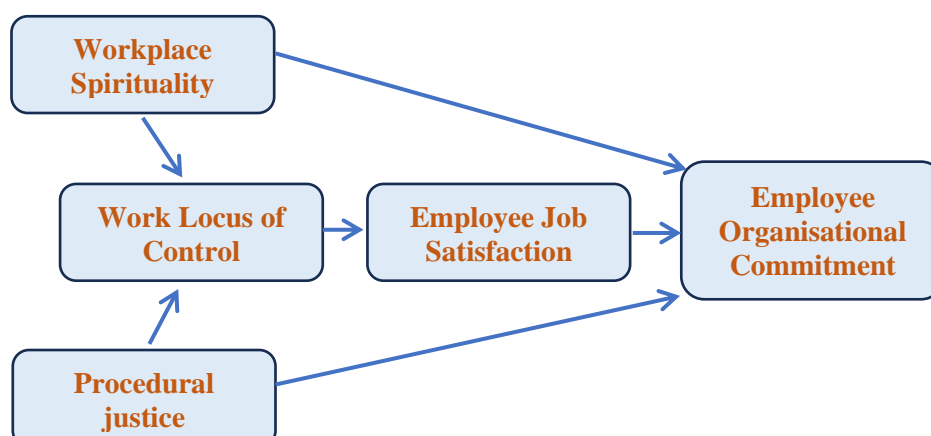




Chart 2: Work Locus of Control and Employee Job Satisfaction as Mediating Factors and Employee Organizational Commitment

**Mapuranga and associates (2021)** The growth of small and medium-sized enterprises (SMEs) in Southern Africa depends on their workforce. Small and medium-sized businesses' (SMEs') effectiveness depends on the presence of a positive workplace culture and procedural justice. These elements affect workers' organizational commitment, job satisfaction, and locus of control. The researchers looked at how procedural justice and workplace spirituality affected SME employees' organizational commitment, job satisfaction, and locus of authority in Harare, Zimbabwe. Data from the study were analyzed quantitatively.

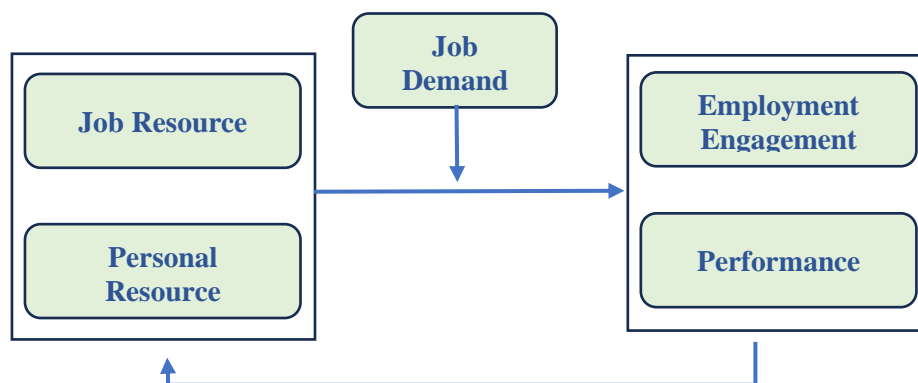


Chart 3: Performance, Employee Engagement, and Job Resources

The results show that workplace spirituality, procedural fairness, and work locus of authority are all significant determinants of employee commitment and job satisfaction. The relationship between workplace spirituality, procedural fairness, and employee organizational commitment was positively influenced by work locus of control and job satisfaction. The study's findings are expected to provide valuable insights into the specific essential aspects affecting work locus of control, employee job satisfaction, and employee loyalty to the organization.

According to the JD-R paradigm, employee engagement is supported by both job and personal resources, leading to positive consequences like innovative behavior. Schaufeli and Tarris (2014) define employee engagement as characterized by a strong sense of significance, intense interest, dedication, and challenging work tasks (dedication), a happy and focused obsession with one's work (absorption), and a great sense of vitality and psychological adaptability when working (vigor). Prior research on employee engagement has shown that motivated workers have the requisite abilities and vigor for the job and make better use of their resources. In addition to helping to broaden a person's repertoire of ideas and behaviors, positive feelings from engagement experiences also aid to fortify their social, intellectual, and physical resources to support both in-role and extra-role performance. The results of these studies provide credence to the idea that motivated, devoted, and passionate employees are frequently great performers.

## Conclusion

Employee organizational behavior may be influenced by human resource management (HRM), which ensures that business objectives are met. Business performance is positively impacted by HRM, which promotes organizational commitment. This study set out to assess the relationship between job resources and organizational commitment. Our study contributes to the

understanding of how the different aspects of work satisfaction may modify the relationships between organizational commitment and company HR practices. Strong organizational commitment enables an employee to comprehend the company's objectives, support the company's core values and long-term vision (both personally and professionally), feel like they belong, and be treated with respect and appropriately paid for their efforts. Devoted employees are more motivated and determined, exhibit better behavior, and are less likely to report absence.

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## **INVESTIGATING THE IMPACT OF INTERNET AND SOCIAL MEDIA ADDICTION ON ACADEMIC PERFORMANCE AMONG COLLEGE STUDENTS**

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***Abstract:** The internet and social media have fundamentally transformed the way we connect, conduct business, and engage with the world around us. Among college students, concerns have arisen regarding the impact of these technological advancements on academic performance. As the digital landscape continues to evolve, it is crucial for educators, parents, and policymakers to understand how excessive internet and social media usage can hinder the academic goals of this demographic. This research explored the relationship between internet addiction, social media addiction, and academic performance in college students. A total of 30 students aged 18 to 23 years participated in the study. Standardized scales were utilized to assess internet addiction, social media addiction, and academic performance. The findings revealed a significant negative correlation between academic performance and both entertainment-related activities and internet addiction. Additionally, internet addiction was significantly negatively correlated with socialization but positively correlated with entertainment. These results emphasize the need for educators and institutions to promote responsible internet and social media usage among college students while fostering a supportive learning environment. As our world becomes increasingly interconnected, further research is essential to better understand how digital technologies continue to shape students' academic success.*

***Keywords:** Internet Addiction, Social Media Addiction, Academic Performance, College Students*

### **INTRODUCTION**

College students are increasingly troubled by the growing issue of internet and social media addiction, which significantly impacts their academic success. In the modern digital era, students remain highly connected, often through social media platforms, leading to several negative consequences. Internet addiction refers to excessive and uncontrollable internet usage, often at the expense of essential activities like academics. A specific form of this behavior, social media addiction, involves the compulsive engagement with platforms such as Facebook, Instagram, Twitter, and TikTok. Both types of addiction contribute to reduced productivity and a decline in academic performance.

The continual distraction offered by the internet and social media is one of the biggest problems. When they are inundated with notifications, texts, and the temptation to scroll through their newsfeeds, college students frequently struggle to focus on their college work. Their ability to

concentrate and participate in in-depth, meaningful learning is hampered by this continual interruption.

In addition, a dependence on the internet and social media might impede effective time management. Students may spend hours online, putting off their projects and studies until the very last minute. Due to their procrastination, they can produce mediocre work, miss deadlines, and get more stressed, all of which could hurt their scores.

Additionally, excessive usage of the internet and social media might result in less social engagement offline, which may have an impact on a student's general wellbeing. The isolation that can result from excessive computer use can make loneliness, sadness, and anxiety worse.

O’Keffee et al. (2011) states that social media sites offer a wide range of entertainment and means of communication, including text messaging, photo sharing and video calling.

Bettman et al. (2021) asserted that these social media platforms and use of technology have contributed hugely to daily routines and culture of young adults leading their identity formation and self-expression.

### **Internet Addiction**

Internet addiction is defined as “excessive and problematic internet use displaying features such as preoccupation and an inability to cut back on their usage of the internet” (Murali& George, 2007). Internet addiction can also be defined as “compulsive computer use that has contributed to personal distress, or social occupational, financial, or legal consequences (Black et al., 1999).

A study was conducted by Cardak (2013) on psychological well-being and internet addiction among university students. A total of 479 students participated in the research and completed the Online Cognition Scale and Scales of Psychological Well-Being. The investigation included various statistical analysis such as correlation and multiple regression. The findings revealed that diminished impulse control, social comfort, loneliness/depression, and distraction were negatively predicted by psychological well-being. Moreover, it was also observed that pupils who were high on internet addiction were low on psychological well- being. To conclude, it was seen that internet addiction negatively affects psychological well- being.

In addition to this, a study was done in China on 1,173 college going students to examine the correlations of internet addiction and psychosocial factors. The students were asked to fill questionnaires related to propensity of depression, quality of parent child relationship, internet addictive behaviors and psychosocial competence. Among the sample, 15.2% of students were addicted to the internet. Moreover, students who had poor parent-child relationships, high depression and low psychosocial competence reported addiction towards the internet. The study also revealed the major factors of internet addiction were quality of family environment, personal mental health status and level of developmental assets (Chi et al., 2016)

### **Social Media Addiction**

Smith and Gallicano (2015) defined social media usage as “the multiplicity of activities individuals may participate online”.



Verduyn et al. (2017) referred to active social media usage as “online behaviors that facilitate direct exchanges among users. Such behaviors include liking, commenting, sending messages, and otherwise engaging with other users”.

In a study by Villanti et al. (2016) social media use was reported highest among young adults aged 18 to 25 years as compared to other age groups. Fu and Cook (2021) asserts that social media use by young people act as a resource to navigate their everyday lives in changing social contexts as many young people rely on these platforms to stay connected, participate in online communities, or stay informed about various news and events. Additionally, to also access various resources.

Research studies have shown that social media usage and multitasking for nonacademic purposes such as playing video games have a significant negative impact on academic performance (Lau, 2017). Menayes (2014) asserted that even though students are aware of negative impact and the use of social media in their reduced grades, they tend to continue to indulge in it.

Research was done to evaluate the correlation between social media use and depression in the U.S. due to the increasing social media use and mental health concerns among adults. The study included a sample of 1787 adults (aged between 19-32). The findings demonstrated a significant positive relationship between social media use and depression (Lin et al., 2016).

Likewise, an investigation was done by Ndubuaka et al. (2020) to examine the impact of social networking technology addiction on academic performance. The study was done on Nigerian students in Nigeria. The findings revealed that the students were highly addicted to social media and a negative correlation was observed between social networking site addiction, academic performance, and social and physical well-being. The research also showed that social media addiction is linked to high levels of depression, anxiety, low self-esteem, and stress.

#### **Academic Performance**

According to Martha (2009) academic performance is defined as “student’s performance in an examination, tests and in a course work”. According to Yusuf et al. (2016) academic performance is defined as “a measurable and observable behavior of a student within a specific period”. Additionally, Narad and Abdullah (2016) described it as “the knowledge gained which is assessed by marks by a teacher and or educational goals set by students and teachers to be achieved over a specific period of time”.

Gulzar et al. (2010) stated that to enhance learning and coping mechanisms in academic institutions, the presence of a professional support system such as academic advisors, mentors and tutors is important. Maguin and Loeber (1996) conducted a study to understand the relation among academic performance and delinquency. Moreover, the study also aimed to find interventions to regulate academic performance and to reduce the rates of delinquent behavior among children. It was observed that children with poor academic performance offended more as compared to others and commit more serious and violent crimes. The findings depicted that males were more indulged in such cases as compared to females, and more Whites when compared with African Americans. The outcomes of the study showed that delinquency was predicted by poor academic performance irrespective of socioeconomic status. Research aimed to study the impact of social media use on academic performance and psychological reactions among college going

students by Malak (2022). The research was conducted in Jordan on a sample of 510 students. The outcomes of the study demonstrated that academic performance was affected by social media addiction. Though addiction to social media has a direct link with increased stress and anxiety levels.

## **METHODOLOGY**

- **Purpose**  
The purpose is to study the relation between Internet addiction, social networking use and academic performance among college students.
- **Hypothesis**  
A significant negative relationship will be between internet addiction and academic performance.  
A significant relationship will be between academic performance and social media addiction.
- **Sample**  
A total sample of 30 college students in the age 18-23 years was collected from Chandigarh.

### **Measures**

- **Internet Addiction Test:** The scale as developed by Young (1998) was used to measure excessive internet usage. The scale consisted of 20 items on a 5-point Likert scale, (0= not applicable to 5= always).
- **Social Networking Usage Scale:** The scale as developed by Gupta & Bashir (2018) was to measure the use of social networking sites among Indian students. The scale comprised 19 items, consisting of 4 sub dimensions, including, Academic, Socialization, Entertainment & Informativeness. The scale used a 5-point Likert scale dimension from 1 (never) to 5 (always).
- **Academic Performance Scale:** The scale as developed by Birchmeier et al. (2015) was used to assess academic performance of college students. The scale consisted of 8 items on a rating scale of 5-point Likert scale ranging from (1= Strongly disagree to 5= Strongly agree).

## **Procedure**

The participants were informed about the purpose of the research and the questionnaires were filled through Google forms; each participant was thanked for their cooperation. In addition to this, only standardized psychological tests were administered to the participants.

## **RESULTS**

	<b>Academic</b>	<b>Socialization</b>	<b>Entertainment</b>	<b>Informational</b>	<b>Social Media Addiction Total</b>	<b>Internet Addiction</b>	<b>Academic Performance</b>
N	30	30	30	30	30	30	30
Mean	22.4	15.3	13.6	10.3	61.6	32.8	30.3

Standard deviation	6.29	4.17	3.56	3.25	9.79	12.9	6.43
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**Table 2 Correlation among internet addiction, social media addiction and academic performance**

	Academic	Socialization	Entertainment	Informational	Social Media Addiction Total	Internet Addiction	Academic Performance
Academic	—						
Socialization	-0.002	—					
Entertainment	-0.041	0.084	—				
Informational	0.225	0.140	0.085	—			
Social Media Addiction Total	0.702*	0.502**	0.401*	0.568*	—		
Internet Addiction	0.354	-0.220*	0.042*	-0.140	0.103	—	
Academic Performance	-0.167	0.350	-0.206*	0.156	0.019	-0.410*	—

Note. \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

## DISCUSSION OF RESULTS

The results found out that academic performance is significantly negatively correlated with entertainment ( $r=-0.206$ ,  $p < .05$ ) and with Internet addiction ( $r=-0.410$ ,  $p < .05$ ). Internet addiction is found to be significantly negatively correlated with socialization ( $r=-0.220$ ,  $p < .05$ ). However, internet addiction is found to be significantly positively correlated with entertainment ( $r=0.042$ ,  $p < .05$ ). The results found social media addiction total is positively significantly correlated with its own subdimensions academic ( $r=0.702$ ,  $p < .001$ ), with socialization ( $r=0.502$ ,  $p < .01$ ), with entertainment ( $r=0.401$ ,  $p < .01$ ) and with informational ( $r=0.568$ ,  $p < .01$ ). Based on the provided correlation results, it can be stated that, higher levels of engagement in entertainment activities are associated with academic performance and college students who have higher levels of internet addiction tends to have lower academic performance. Further, college students who are more addicted to internet tend have lower socialization. Additionally, higher internet addiction in college students will more likely engage them in entertainment activities. The results also found out that higher levels of social media addiction is associated with its subdimension academic use. The result is somewhat counterintuitive as social media is often seen as a potential distraction from academic tasks. However, it could be interpreted that college students using social media for educational purposes or feeling more engaged in their academic lives when they share their achievements or experiences on social media platforms. Social media addiction is also found to be positively correlated with other subdimensions; socialization, entertainment and informational use, indicating that college students who are more addicted to social media tend to engage more in these activities. The same results were also demonstrated in a study done by Usman

(2014). The purpose of the study was to find the relationship between internet addiction and academic performance among college going students (N=359). The consequences of the findings showed that internet addiction was negatively correlated to academic performance. Moreover, study also revealed that males were more addicted to the internet than females.

The results are consistent with the past research done by Al-Rahmi and Othman (2013) on collaborative learning. The study examined the impact of social media on academic performance. The results showed that collaborative learning by social media is positively related to academic learning and overall performance.

## **CONCLUSION**

The aim of the present research was to study the relationship between internet addiction, academic performance, and social media addiction among college students. Standardized scales were used to measure the stated variables in a sample of 30 college students, aged 18- 23 years. The results found out that that academic performance is significantly negatively correlated with entertainment and with Internet addiction. Internet addiction is found to be significantly negatively correlated with socialization. However, internet addiction is found to be significantly positively correlated with entertainment. The results found social media addiction total is positively significantly correlated with academic, with socialization, with entertainment and with informational. Several ideas might be taken into consideration to solve the complex interaction between internet and social media addiction and college students' academic performance. To start, educational institutions should put awareness campaigns and workshops in place to inform students about the possible effects that excessive internet and social media use may have on their academic performance. To enable students to find a balance between online and offline activities, the curriculum should also incorporate the development of time management and digital literacy skills. It can also be helpful to encourage students to self-regulate their screen time and set goals for their online involvement. Finally, parents or guardians should have healthy open dialogue with their college bound children about using technology responsibly.

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## **A CUSTOMER'S SATISFACTION TOWARDS DIGITAL BANKING SERVICES IN SALEM DISTRICT: AN OVERVIEW**

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*Abstract: The Banking System Plays a Vital Role in the Modern Banking Sector. In every state, progress depends mainly on the banking system. It is a similar payment system that allows bank clients or alternate money establishments to attempt to make a variety of monetary transactions during the entire period on the website of the commercial banks. The officials, scholars and banks have attracted interest. And Card transfer has assumed importance in the rear of modernization of the world, the effects from market forces and regulatory innovations. There have been created to make electronic payments accessible and incorporated. This is recent developments that have contributed immensely to economic growth of the banking sector. The information technology and e-commerce product is e-Banking. This research sheds light on the effects that affect clients' engagement with e-banking services.*

**Key Words: Digital Banking Services, Customer Satisfaction, Quality services.**

### **INTRODUCTION**

In contrast to bank branches, online banking would automatically link to or be part of the overall central bank run by a bank, which was the traditional manner in which consumers were able to access financial services. In the internet banking process, financial institutions specify the kinds of financial transactions that a customer may make, but these usually include the collection of cash accounts, the list of pending activity, the transfer of electronic bills and the transfer of money from one customer to others. Most of the bank are connecting internet nowadays. The expense of these "virtual banks" is lower than that of their counterparts in brick and mortar. The Deposit Insurance Corporation (FDIC) in the United States helps to ensure many online banks and can provide consumer funds with the same degree of security as traditional banks. Specific innovations in banking sector have taken place. Technology has influenced the way consumers communicate with lenders, among the various advances. Computerized platforms and services such as ATMs, cards, online banking and mobile banking are offered alongside conventional banking networks. In the operation of networks between advanced and developing worlds, there's many discrepancies are existing.

### **Statement of the Problem**

Previously, the only alternative was traditional banking, customers go to bank directly perform financial transactions like bank transfer withdrawals, etc. The basic of online money, which gives customers with lot of services, emerged then. Online banking, teller machines provide electronic banking. The programs support one's personal bank account to be monitored and used, such as monitoring account balance, shifting funds from one account to the next. In This connection, this articles attempts to top Customer satisfaction towards & Banking services rendered by various banks.

### **Scope of the Study**

A research aims to explain degree to which clients use modern banking services. The study further expands and helps to establish a growing link through modern services with customers. Today, for 24 hours, the client needs banking services. Due to pervasive internet technology, the entire banking system has been modified in the modern era. Electronic payment systems today focus on all facets of the economy, including such finance, commerce, manufacture, import, procurement and selling of all goods and services. Future research can be achieved by reviewing the combined effects of private sector and public service banks' e-banking facilities. The analysis carried out towards the customers' use of these facilities.

### **Objectives of the Study**

1. To understand the variables that affecting the Digital Banking Services.
2. To analyses degree of satisfaction of consumers towards Digital Services.
3. To identify the impact of Digital Banking Services in the Banking Industry.

### **Research Methodology**

Research was an educational practice, inherently, word should use in a scientific context. Research is also an innovative addition to the existing supply of results transmitted because of its creation. With the assistance of research, observation, contrast and experiment, it is the pursuit of reality. The technique of study may be to systematically solve the downside of the progress. It can be interpreted as an adventure science, but research was conducted professionally. It is normally adopted by the researcher question together with the reasoning underlying each other.

### **Size of the Sample**

A sample size of hundred participants was chosen for the analysis it through application of convenience sampling techniques.

### **Sampling Design**

The technique of choosing a sample as well as what is commonly referred to as the test type should be decided by the Researcher. Sometimes chance samples or samples with non-probability can be samples. We used non-probability comparisons in this survey.

### **Sampling Techniques**

In this analysis, the convenient technique of sampling is used. If the convenience of access is assisted by the population area unit selected for inclusion within the survey, convenient sampling may be regarded.

### **Period Of The Study**

The research was performed from January 2024 to Dec 2024 for a period of one year.

### **Area of the Study**

The analysis was only carried out in the Salem District.

### **Source of Data Collection**

The key method for primary data collection through the questionnaire. The questionnaire was systematically structured to answer appropriate and specific questions covering all area research. In various investment and monetary evaluations, it is the main technique used widely.

The history of the present analysis has been gathered from books, journals, websites and others.

### **Tools Used For Analysis**

- An appropriate data collection systems were used for the analysis and processing of the findings.
- Percentage analysis methods
- Analysis of variance (ANOVA) – One way

### **Hypothesis**

The theory regardless of key analytical tool; its primary task is to encourage new research and findings. Null Hypothesis and Alternative Hypothesis are two kinds of hypotheses. In the study was found null hypotheses as there is no meaningful relationship between banking services and customer satisfaction.

#### **Limitations of the Study**

Under a certain limit, each review is carried out and this research is not an exception. Constraints for study as follows,

1. The sample size of the large population was taken from only 100 respondents.
2. The results refer only to the Salem District respondents. In Tamil Nadu, it is not applicable to Any Other Location.

#### **Review of Literature:**

**Fozia (2013)** A Potential Client Perception on E-banking Benefits Rendered through Selective Private & Government Sector Bank in India, The study findings clearly show that various client age groups and various customer occupational groups have different views of e-banking services. That findings also show that demographic characteristics, primarily occupation or age, get a major influence on online commercial bank.

**Trivedi (2014)** In a report on 'Banking Services, research investigating the effects of online banking on HDFC Lender's retaining customers, Gaurang disclosed the influence of three web on HDFC Bank's retaining customers. His research it has been shown that Quality Of service, Responsiveness, Privacy protection, Reliability, and Reliability variables in form of internet banks have an impact on customer loyalty.

**Dr. Geeta Sharma and Surendra Malviya (2014)** found that perhaps the dimensions of service get a positive impact on customer satisfaction in their research named "Payment Processing Target Population and Its Effect on Customer Satisfaction In Chandigarh State of Madhya Pradesh," The report demonstrates that the ease use and, comfort, availability, trust and sensitivity of the website are the key determinants of bank customers.

**ShahidulIslam (2015)** investigated banking companies in Nigeria in a report on "Study of public satisfied with the service of satisfaction throughout the banking sector." In 5 dimensions, like early impression, state of delivery service, provision of services provider, the connection regarding customer service quality and satisfaction was studied and the results. A strong relation between the metrics of customer satisfaction was discovered throughout the report.

**Fatemeh Sakhaei & Ahmad J. Afshari (2015)** in an article titled "Its Impact of Services On customer Satisfaction in Online Payments," analyzed the role of dimension on consumer satisfaction in Iran (2015). The study ensures that the size of the Having Strategic Of Service has a major influence on online banking regarding customer loyalty, and that quality will have the bold colours and accuracy.

**Haditha and Fatima Razia (2016)** analyzed the resources that facilitate customers to choose e-banking services in a paper, "Factor Analysis of Both the consumer Preferences In E-Banking Services For Particular Regard to Coimbatore City," She identified twenty parameters but decided that those quantities can be condensed into six server variables called Encryption and Credibility, Belief in e-services, Browser design.

***Impact Analysis of HRM Practices in the IT Sector and Their Role in Promoting Inclusive Growth and Sustainable Development in India***

**Percentages Analysis Classification on the basis of Demographic**

<b>Demographic variables</b>	<b>Categories</b>	<b>No of Respondents</b>	<b>Percentages</b>
Gender	Male	50	50
	Female	50	50
	<b>Total</b>	100	100
Age	Below – 25 years	30	30
	26-35 years	31	31
	36-45	24	24
	46 years & above	15	15
	<b>Total</b>	<b>100</b>	<b>100</b>
Educational Qualification	illiterate	6	6
	SSLC	13	13
	HSC	5	5
	UG Degree	36	36
	PG Degree	29	29
	Professional	11	11
	<b>Total</b>	<b>100</b>	<b>100</b>
Profession	Government Employee	21	21
	Private Employee	41	41
	Business	13	13
	Professional	16	16
	Home maker	9	9
	<b>Total</b>	<b>100</b>	<b>100</b>
Marital Status	Married	56	56
	Un married	44	44
	<b>Total</b>	<b>100</b>	<b>100</b>
Annual Income	Below 100000	38	38
	Rs. 100000- 300000	40	40
	Rs. 300000-600000 & Above	14	14
		8	8
	<b>Total</b>	<b>100</b>	<b>100</b>
Place of Residence	Rural	34	34
	Urban	47	47
	Semi Urban	19	19
	<b>Total</b>	<b>100</b>	<b>100</b>

**Interpretation:**

The table shows both men and women are equivalent. 31% are 26-35 years of age and less than 25 years of age out of 100 respondents. The UG Degree related to educational qualifications has been completed by 36 per cent and 29 percent completed the PG Degree. In private companies, 41 percent of those surveyed work. 56 are married. It is clear that 40 percent complainant's annual income is Rs. 100,000- 300,000, followed by less than 100000000 (38%). In urban areas, 47 per cent of those polled live.

**Classification of Category of the Bank**

Category of the bank	Frequency	percent
Public sector Bank	40	40.0
Private sector Bank	60	60.0
<b>Total</b>	<b>100</b>	<b>100</b>

**Sources: Primary Data**

**Interpretation**

The table indicates 40 percent of respondents belonging to public sector banks and the private industry bank preferred 60 percent. It is concluded that 60% of participants preferred for getting bank services through the private sector.

**Types of account:-**

Types of account	Frequency	Percent
Savings Account	52	52.0
Current Account	26	26.0
Fixed Deposit Account	17	17.0
Recurring Deposits	5	5.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

**Interpretation**

The table reveals, we can infer that 52% of participants have saving accounts and 26% are keeping Customer Account. The 17% of respondents get a fixed deposit account and 5% belong to Recurring deposit. It is assumed that 52% respondents belonging to Savings account holder.

**Risks Related to Internet Banking**

Risk related to internet banking	Frequency	Percent
Transaction risk	27	27.0
Interest rate risk	24	24.0
Price risk	20	20.0
Password risk	29	29.0
<b>Total</b>	<b>100</b>	<b>100.0</b>

**Interpretation:**

From the table, It is noted that 27% of customers face transaction risk, 24% of respondents face interest rate risk on credit risk, 20% of people face price risks. It is assumed that 29 percent of Respondents Are Faced With Password Risk Use the E-Banking Services.

**Hypothesis (H0)**

There is no substantial difference between age and e-banking service satisfaction among the customers.

Contribution of new technology	Frequency	Percent
Very high	14	14.0
High	26	26.0
Average	38	38.0
Low	10	10.0
Very Low	12	12.0
	<b>100</b>	<b>100</b>



**Interpretation:**

The above said ANOVA table indicates that for e-banking products such as accounting details and account balance, e-payments, bank to account transfer report query, card delivery clarity, amount of sales, convenient location, better than allocation and easy to be using adoption, the likelihood output is higher than 0.05 among age and service quality. Thus, the Null hypothesis is agreed and it is assumed that these factors do not vary significantly inside the age range of the respondent

**Hypothesis (H0):**

There is no significant difference between category and satisfaction of E- Banking

Number of Transaction	Between Groups	.962	3	.321	.245	.865	Accepted
	Within the Group	125.788	96	1.310			
	<b>Total</b>	126.750	99				
Conveniently Located	Between Groups	1.430	3		.316	.814	Accepted
	Within the Group	144.680	96	.477			
	<b>Total</b>	146.110	99	1.507			
Better than offline payment	Between Groups	4.424	3	1.475	1.440	.236	Accepted
	Within the Group	98.326	96	1.024			
	<b>Total</b>	102.750	99				
Easy to use and adopt	Between Groups	4.055	3	1.352	.976	.407	Accepted
	Within the Group	132.945	96	1.385			
	<b>Total</b>						

Sources: 5% significance level

**Interpretation:**

Above that the ANOVA resulted in a probability level 0.05 level between bank classes and customer experience with e-banking products such as account balance of financial reports, account transfer of e-payments, announcement, request, amount of sales promptly, ideally placed, better than allocation. The hypothesis is thus accepted and it is inferred that these parameters between the categories of banks that the participants have significant relationship with e- banking services.

**Suggestion**

Many of the people do not know about the use of Digital Banking services offered by various banks. Banks should take the more steps to boost the understanding of, and the benefits that use, the various e-banking facilities available. A training of e-banking must be giving to clients to encourage digital transactions. Banks should focus of security issues relating to sensitive passwords which are at risk of intrusion in the cyber space. It is crucial to decrease the costs involved with using Internet banking in order to maximize the amount of Internet banking users.

Finally it is suggested that the banks should provide proper Awareness about the Digital Banking services to new customer and existing customer.

### **Conclusion**

The value of client loyalty in online banking, on the one hand, seems to be the result of greater market trends. Electronic banking technique is beneficial both for customers and for banking and other organizations. Electronic banking quality, protection, honesty, Digital Banking could be used to improve productivity in a rightful way. There is no major difference between individual variables such as size, occupation, annual income and classification of the selected banks and the level of customer satisfaction, based on the findings. The research was carried out showed that overall consumer satisfaction with banking services was closely linked to customer dissatisfaction with e-banking products, thus highlighting the value of e-banking services. Study findings have also indicated that the calculation of engagement with e-banking services doesn't really differ on the basis either of gender or the area of residency (rural/urban). Considering the significance of e-banking products in the overall view of the satisfaction of financial products and the influence of consumer satisfaction on the extremely crowded banking sector, the research conducted may constitute a start point for future consumer satisfaction studies at the global level of online banking.

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## **INDIA'S MODERN EDUCATION SYSTEM AND ITS DEVELOPMENT**

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*Abstract: The Planning Commission was tasked by the Indian government in 1950 with creating five-year plans for the advancement of several spheres of life, including education. India's current educational system categorized in to Primary, secondary, senior secondary and higher education make up the majority. Eight years of schooling make up elementary education. There are two academic years involved in both senior secondary and secondary education. In India, admission to higher education is contingent upon passing the 12th standard, or upper secondary education. In India, graduation might take three to five years, depending on the course. Typically, postgraduate programmes last two to three years. There is still opportunity to conduct research in a variety of educational settings after earning a postgraduate degree. In line with National Education Policy (NEP) 2020 The "5+3+3+4" model will take the place of the "10+2" structure in order to optimise learning according to children's cognitive development. Reducing curricular material is discussed in the National Education Policy (NEP) 2020 as a way to improve critical thinking, experiential learning, and more all-encompassing, analysis-based learning.*

*Key Words: India, higher education, NEP 2020, critical thinking and analysis-based learning.*

### **INTRODUCTION**

India gained independence from British rule on August 15, 1947. This provided the citizens of the nation with the first and best chance to shape their educational policies in response to the rapidly evolving requirements of the country. However, this chance was not without significant obligations that included restructuring the educational system as a whole. Not only would this help the next generation to develop their innate abilities, but it might also help them to create a brand-new India. Prior to the national government, the main issues facing the education sector included building more facilities for universal elementary education, restructuring the secondary and tertiary education systems, advancing vocational and technical education at different levels, promoting women's education, and restructuring the administrative structure of schools. The Central and State Governments have been working to provide various programmes under the Five-year Plans a solid shape in order to accomplish all of these goals.

#### **India's Modern Education System**

India has a 65.38% overall literacy rate based on the 2001 census. The literacy percentage for women is a mere 54.16%. In India, there is a notable disparity in the literacy rates of rural and urban areas. This is demonstrated by the fact that, according to the 2001 census, only 59.4% of people living in rural areas and 80.3% of those living in urban areas are literate. Primary,

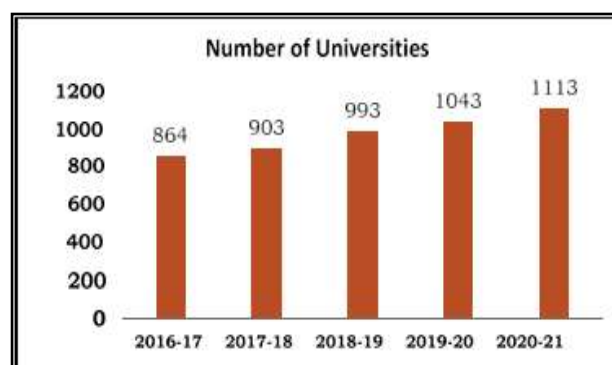
secondary, senior secondary, and higher education make up the majority of India's current educational system. Eight years of schooling make up elementary education. There are two academic years involved in both senior secondary and secondary education. In India, admission to higher education is contingent upon passing the 12th standard, or upper secondary education. In India, completing degree can take three to five years, depending on the stream. Postgraduate studies are normally of two to three years of duration. There is still opportunity to conduct research in a variety of educational settings after earning a postgraduate degree. 7.9% of the First Five Year Plan's total budget was set aside for education. 5.8% and 6.9% of the overall plan expenditure was allocated to the Second and Third Plans, respectively. Merely 3.5% of the overall budget was set out for education in the Ninth Plan. In 1968, the government adopted the "National Policy on Education," which included the Kothari Commission's proposals for streamlining schooling. Primary education for all was one of the principal. To uphold educational standards, the State Council of Educational Research and Training (SCERT) in each state and the National Council of Educational Research and Training (NCERT) at the federal level were founded. The purpose of the University Grants Commission (UGC) is to set the benchmark for higher education.

### **Overview of Higher Education in India**

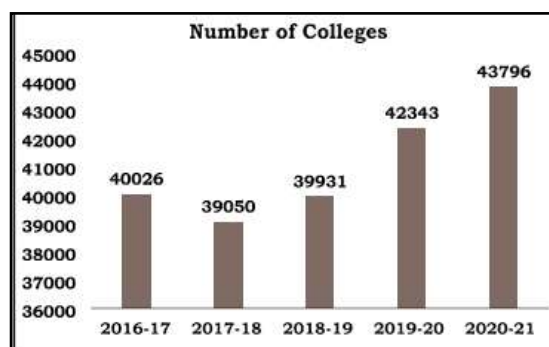
In view of the utility of the Survey as giving comprehensive data of Higher Education in the country, the AISHE Surveys were continued over the years and data on several parameters such as teachers, student enrolment, programmes, examination results, education finance, infrastructure, etc. are being collected. Indicators of educational development such as Institution Density, Gross Enrolment Ratio, Pupil-Teacher Ratio, Gender Parity Index, etc. are calculated from the data collected through AISHE. These are useful in making informed policy decisions and research for the development of education sector. The survey is being conducted on annual basis. It is pertinent to mention that the results published in AISHE reports are based on the number of institutions that have registered and uploaded their information.

### **Key Parameters in Higher Education**

**Number of Institutions:** As shown in the graphs below, the Number of Universities have been increased from 864 in 2016-17 to 1113 in 2020-21 and the number of colleges has increased 40,026 in 2016-17 to 43,796 in 2020-21.







Source: AISHE-2020-2021

- The survey encompasses all higher education institutions in the nation that have registered with an AISHE code on the AISHE portal [www.aishe.gov.in](http://www.aishe.gov.in). These institutions are classified into three main categories: universities, colleges, and stand-alone institutions. Of these, 1113 universities, 43796 colleges, and 11296 stand-alone institutions are listed on the AISHE web portal. Of these, 1099 universities, 41600 colleges, and 10308 stand-alone institutions responded to the survey.
- 446 universities are privately managed. 43% of universities are situated in rural areas.
- 17 universities are exclusively for women, with two located in each of the following states: Haryana, Karnataka, Rajasthan, Tamil Nadu, and West Bengal, and one each of Andhra Pradesh, Assam, Delhi, Himachal Pradesh, Maharashtra, Odisha, and Uttarakhand.
- There are 112 Dual mode universities that provide distant learning in addition to 1 Central Open University, 14 State Open Universities, and 1 State Private Open University.

### India's educational system and development

**Expansion of General Education:** General education has been expanded during the planning phase. The percentage of literate people in 1951 was 19.3. The percentage of literate people rose to 65.4% in 2001. In 1951, 43% of children in the 6–11 age group were enrolled; by 2001, that number had increased to 100%. Primary education is required and provided at no cost. Since 1995, schools have served lunch to students in order to monitor the dropout rate. Primary school enrollment increased threefold from 2.10 lakh in 1950–51 to 6.40 lakh in 2001–02. There were only 27 universities in 1950-51 which expanded to 254 in 2000-01.

**Growth of Technical Education:** In addition to general education, technical education is crucial for the development of human capital. Numerous Industrial Training Institutes, Polytechnics, Engineering Colleges, Medical and Dental Colleges, Management Institutes, etc. have been established by the government:

- a) **Indian Institute of Technology:** Seven institutes have been established in Mumbai, Delhi, Kanpur, Chennai, Khargpur, Roorkee, and Gauhati for the purpose of providing international standard education and research in engineering and technology. Technical education is offered here at the graduation, post-graduation, and doctorate levels.
- b) **National Institute of Technology (NIT):** Engineering and technology are taught at these institutions. Regional College of Engineering (REC) was the name given to these. There are seventeen of these across the nation. Other educational institutions across the nation provide technical and engineering courses.

- c) **Indian Institute of Management:** These educational establishments teach administration and business management. Ahmedabad, Bangalore, Kolkata, Lucknow, Indore, and Kozhikode are the locations of these institutes.
- d) **Medical education:** In 1950–51, the nation had a total of just 28 medical colleges. There were 165 medical and 40 dentistry colleges in the country in 1998-99.
- e) **Agricultural education:** To increase agricultural productivity and output, agricultural universities have been established in practically every state. These universities impart teaching and research in agriculture, horticulture, animal husbandry and veterinary sciences etc.

**Women's education:** Women's literacy rates in India were extremely low. According to the 2001 census, it was 52%. Whereas 75.8% of males were literate. The National Policy on Education placed a high premium on women's education. Numerous state governments have waived the tuition for girls attending universities. Women's literacy levels have been raised through the establishment of separate schools and institutions.

**Vocational education:** The 1986 National Policy of Education seeks to make secondary education more vocational. Since 1988, the Central Government has provided funding to State Governments so they can carry out the programme. Higher secondary curricula included instruction in mechanical and carpentry, typing, electronics, agriculture, pisciculture, poultry, and diary keeping.

**Adult education:** The National Adult Education Programme was started in 1978. National Literacy Mission was also started in 1988 to eradicate adult illiteracy particularly in rural areas. The Centre gives assistance to states, voluntary organisations and some selected universities to implement this programme. There were 2.7 lakh adult education centres working in the country in 1990-91. This programme helped to raise the literacy rate to 65.38% in 2001.

**Improvement of Science education:** Central Govt. started a scheme for the improvement of science education in schools in 1988. Financial assistance is given to provide science kits, up gradation of science laboratories, development of teaching material, and training of science and mathematics teachers.

#### **Development of education under Five-Year Plans**

The Planning Commission was tasked by the Indian government in 1950 with creating five-year plans for the advancement of several spheres of life, including education. The primary goals of these schemes were

- To end the lack of literacy.
- In order to make primary education universal,
- To create programmes for skill and vocational training,
- To update and raise standards across the board in education,
- To establish infrastructure for superior education in each of the nation's districts.

#### **Indian Education Policies**

##### **National Education Policy (1968)**

In 1968, the government headed by Prime Minister Indra Gandhi developed the National Policy on Education based on the Kothari Commission's recommendations. To foster national cohesion and increased cultural and economic development, the policy called for a "radical restructuring" and suggested equitable educational possibilities. It was suggested that secondary schools adopt

regional languages to foster productive relationships between instructors and pupils. Education spending was to rise to 6% of the national revenue by 1968, according to the National Education Policy

### **National Policy on Education (1986)**

The Rajiv Gandhi-led Indian government unveiled a brand-new National Policy on Education (NPE) in 1986. A "special focus on the removal of disparities" and equalising educational opportunities were mandated by the new policy, with specific attention paid to women, Scheduled Castes (SC), and the SC community. The policy placed a strong emphasis on creating new institutions, hiring teachers from marginalised groups, expanding adult education, housing and service provision, and scholarships for the impoverished.

### **Operation Blackboard (1987)**

The Indian government started "Operation Blackboard" in 1987–1988 with the intention of enhancing the material and human resources offered in the nation's elementary schools. The three primary components of the Scheme are as follows:

- supplying all primary schools purchased through the programme with basic teaching and learning supplies, such as whiteboards, maps, charts, toys, and games;
- providing at least two classrooms and separate restrooms for boys and girls;
- providing two teachers per primary school;

The Scheme was expanded to supply third classrooms and teachers to primary schools whose enrollment surpasses 100 during the 8th Five-Year Plan, which was amended in 1993–94. Additionally, it was expanded to include upper primary schools.

### **Teacher Education Programme (1987)**

The Government initiated a Centrally-Sponsored Scheme of Restructuring and Reorganisation of Teacher Education in 1987, in accordance with the National Policy on Education (NPE) 1986. Its goal was to establish a strong institutional framework for elementary and secondary school teachers' pre-service and in-service training. Additionally, it made provisions for elementary and secondary schools to receive academic resource support. Under this Scheme, recurrent and non-recurring Central aid is provided to the State Governments as resource support to the DIETS, CTES, IASES, and SCERTS

### **District Primary Education Programme (1994)**

In an effort to revitalise primary education and accomplish the goal of universalizing primary education, the government introduced the centrally supported District Primary Education Programme (DPEP) in 1994. The Government of India shares 85% of the project costs in this programme, with the respective State contributing the remaining 15%. The Department for International Development (DID), UNICEF, the World Bank, and other external organisations provided funding for the Central share.

### **The Mid-Day Meal Scheme (1995)**

Launched on August 15, 1995, the Mid-Day Meal Scheme (MDMS) was first implemented by the Indian government as the "National Programme of Nutritional Support to Primary Education" (NP-NSPE). The program's goal is to assist in improving primary school students' nutritional status. All children enrolled in classes one through five are given a cooked noon meal with 300 calories and 12 grammes of protein under this programme. The project was first

introduced in 2408 blocks around the nation. The initiative has been put into place all throughout the nation by 1997–98.

The NP-NSPE was rebranded as the "National Programme of Mid Day Meal in Schools" in October 2007. In 2007, the Scheme covered children in grades six through eight in 3479 educationally disadvantaged blocks.

This programme was rebranded once more in September 2021 as the "Pradhan Mantri Poshan Shakti Nirman (PM-POSHAN)" programme. By 2022, the Central Government plans to expand the POSHAN programme to cover an additional 24 lakh pupils enrolled in pre-primary education in government and government-aided schools. The scheme's nodal ministry is the Ministry of Education (MoE)

### **Sarva Shiksha Abhiyan (2001)**

The Sarva Shiksha Abhiyan (SSA), initiated by the Indian government in 2001, aims to guarantee education for children aged 6 to 14. The District Primary Education Programme (DPEPt), which was introduced in 1994 with the goal of achieving universal primary education, is where the origins of SSA may be found. SSA aimed to change the elementary education system in the country by providing useful-quality elementary education to all children of the age group of 6-14 years by 2010. Padhe Bharat Badhe Bharat, launched in 2014, is a nationwide sub-programme of Sarva Shiksha Abhiyan. This sub-programme looks to improve the comprehensive early reading, writing and mathematic skills of children of classes I and II.

### **Right to Education Act (2009)**

Acted on August 4, 2009, by the Indian Parliament, the "Right of Children to Free and Compulsory Education Act" (Right to Education Act (RTE)) is a legislative measure. According to Article 21-A of the Constitution, the RTE outlines the requirements for the significance of free and required education for children in India between the ages of 6 and 14. The RTE became operative on April 1, 2010.

### **National Education Policy (2020)**

On July 29, 2020, the Indian Union Cabinet approved the National Education Policy of India 2020 (NEP 2020). The National Education Policy of 1986 was superseded by this new directive. In both rural and urban India, NEP 2020 offers a comprehensive framework for education from elementary school to higher education, encompassing vocational training. By 2040, the initiative seeks to completely overhaul India's educational system. Studying any one language will not be required under the National Education Policy 2020. Furthermore, there will be no switch from English to any other regional language as the medium of instruction. The use of "mother tongue" or local language as the medium of instruction up until Class 5 has been highlighted by NEP 2020, and it is advised to be continued until Class 8 and beyond.

The "10+2" structure will be replaced with the "5+3+3+4" model to optimize learning based on the cognitive development of children. The new model will be implemented as follow:

- Foundation Stage: It includes 3 years of preschool, followed by Classes 1 and 2 in primary schools, covering the children of ages 3 to 8 years.
- Preparatory Stage: This stage consists of Classes 3 to 5, covering the children of ages 8 to 10 years.
- Middle Stage: It covers children between ages 11 and 13 years, studying in Classes 6 to 8.
- Secondary Stage: It comprises Classes 9 to 12, covering the children of ages 14 to 18 years.

Reducing curricular material is discussed in the National Education Policy 2020 as a way to improve critical thinking, experiential learning, and more all-encompassing, analysis-based learning.

### **Conclusion**

The quality of education in India remains a source of concern for policymakers even after significant efforts to strengthen the country's educational system. Prejudices of all kinds and the generalised poverty are primarily to blame for this. Another reason for concern is the incapacity to monitor the dropout rates among the disadvantaged segments of the populace. Numerous elements of the current educational system need to be reviewed and altered. We will continue to underuse and even waste our youth unless we take decisive action to reformulate our educational approach, which could have dire repercussions down the road. Development and current state of higher education in India by examining a variety of data sources. It also identifies the main issues facing the country's higher education industry, such as the faculty shortage, research and development, quality education, and the imbalance between supply and demand.

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## **DEFICIT FINANCING CAN GO A LONG WAY IN PROMOTING ECONOMIC DEVELOPMENT IN UNDERDEVELOPED COUNTRIES: AN OVERVIEW**

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*Abstract: In modern times, Deficit Financing' has become a prominent fiscal instrument in meeting the deficits in the budget. This method has gained importance only after giving up the idea of strict adherence to the principle of balanced budgets. The onset of Great Depression in 1930 and the emergence of Keynesian concept gave a new impetus to the policy of deliberate unbalancing of the budget in periods of depression. So, deficit financing has assumed importance as fiscal measure for the recovery of the economy. With the advent of the concept of development through conscious planning, many States meet with deficit budgets and the tool of deficit financing has become almost a regular feature of the modern budgets, particularly the budgets of India. Hence, we must study this in greater detail.*

**Key Words:** Budgets in India, Keynesian deficit financing, gross national expenditure, Public expenditure.

### **Meaning**

Mc. Graw Hill Dictionary of Modern Economic defines “**deficit financing as a practice by government of spending more than what it receives as revenue**”.

According to the Planning Commission of India “Deficit financing is used to denote the direct addition to Gross National Expenditure through budget deficit whether the deficits are on the revenue account or capital account. The government may cover the deficit either by running down its accumulated balances by borrowing from the banking system.”

In Indian context, deficit financing takes place, when a budgetary deficit is financed by using any one of the following methods.

### **Objectives**

- a. The government may withdraw its cash balances from the central bank.
- b. Government may borrow fund from the central bank.
- c. Government may resort to printing of additional currency.

### **Deficit financing**

Deficit financing has been ascribed an important role in fiscal policy on account of increases in public expenditure on various accounts. The different objectives of deficit financing make it clear.

**To finance wars:** Deficit financing has been found to be the simplest and quickest method to finance huge War expenditures. War time emergency it difficult for government to raise urgent resources through its usual methods of taxation and public borrowing. The funds obtained through deficit financing are used by the government to purchase goods and services to fight war. This raises the aggregate demand. Resources are mobilised by the government not for productive purpose but for War efforts which is unproductive. Thus the rise in aggregate demand and non-availability of sufficient goods result in an inflationary price rise. The experience of Germany during the two world wars is a classic example of the harmful effects of War inflation. During First World War, the German paper Mark depreciated so much in value that one gold Mark could not be purchased by even one billion paper Mark. Similarly during Second World War, the ratio of gold to paper currency became as low as 0.01 per cent on account of deficit financing. However, wartime emergency requires a quick mode of financing He deficit financing cannot be avoided. Precautions should be taken to private demand.

**To fight unemployment during depression:** Keynes advocated deficit financing as an important tool of solving the problem of involuntary unemployment during depression. This unemployment during depression occurs due to lack of effective demand since private spending is low. Therefore the only way to combat unemployment would be for the government to invest in public works programme to create employment. Further during depression welfare payments to be made by the government would also increase. Government cannot get finance for this expenditure out of taxation or public borrowing as taxable capacity and ability to contribute to government loans is very low during depression. Hence the government must borrow from the banking system. Thus deficit financing becomes the best mode of financing anti-deflationary expenditure.

Keynes suggested that the investment undertaken by the government will result in a multiple increase in incomes via the multiplier effect. However the operation of the multiplier may not be that successful in underdeveloped countries as there is unutilised or idle capacity in both agricultural and industrial sectors. Supply of working capital is also very low. On the other hand marginal propensity to consume is very high. Thus Keynes' multiplier may raise the aggregate demand instead of raising the aggregate supply. Hence deficit financing to combat unemployment in underdeveloped countries requires great caution in handling so that inflationary pressures are not generated.

**To promote economic development.** Deficit financing can go a long way in promoting economic development in underdeveloped countries there are two issues to be discussed here. First refers to the way in which deficit financing can be used to finance development projects. Second whether deficit financing for development results in inflationary potential. The major obstacle to development in these countries is low rate of capital formation which is not enough for sufficient investment to provide jobs for the large number of unemployed. With increasing population the level of unemployment also increases necessitating greater capital formation. Low incomes of people reduce the taxable capacity as well as ability to save. For the same reason, government cannot raise resources through public borrowing too. Hence deficit financing becomes the only way of mobilising required resources in developing countries.

Deficit financing can help to stimulate the rate of investment indirectly Deficit financing for development first increases incomes and thus savings too. It results indirectly in forced saving too because when the government purchases goods and services for its projects, people do not g them. So the reduced private spending results in larger saving.

If the government uses deficit financing to undertake productive projects, then output would increase, and it may not be inflationary. But there are certain rigidities in the developing countries which do not result in complementary factors for investment. Firstly there is a lack of entrepreneurship and technical knowhow. Secondly there is no adequate infrastructure such as organisations, market communications etc. These market imperfections fail to increase effective supply along with increasing demand and this causes rising prices.

Further elasticity of supply is not the same in different sectors of the economy. For example elasticity of supply tends to be low in agriculture than in industry. In the initial stages of development if the government expenditure is directed towards these sectors whose elasticity of supply is low, it is certain to increase incomes and demand in these sectors, but lack of supply response would raise prices. In all these cases, if deficit financing used for development schemes results in inflationary price rise, the government should carefully raise taxation to siphon off the excess purchasing power in the hands of the people.

Another way in which deficit financing can promote development is when it increases the incomes of the entrepreneurs whose propensity to save is high. In fact this may result in greater inequality of income. But in the initial stages, higher propensity to save of the entrepreneurial class is a welcome feature in the interest of general economic development. This fits into the theory of unbalanced growth given by A.O. Hirshman. In general it is accepted now that so long as care is taken to avoid inflationary potential, deficit financing is a very useful instrument of development in developing countries. Deficit financing should preferably be used for quick yielding projects in the initial stages so that the increase in production will control inflationary pressure. If development projects have long gestation period, deficit financing for such projects would bring in inflationary price rise. Hence in developing countries deficit financing should be carefully used in the Initial stages to lay a good foundation for necessary infrastructure for development.

**To mobilize surplus, idle, and unutilized resources.** Keynes had advocated deficit financing for the mobilization of surplus labour and other resources during depression. This argument may be applicable to underdeveloped countries only with limitations. If deficit financing is used to employ such labour in the agricultural sector in these countries, it may create inflationary price rise. On the other hand deficit financing is recommended for its ability to create new resources in these countries. When deficit financing raises prices in these countries, it reduces consumption and savings become forced. Thus deficit financing is recommended in developing countries for the mobilisation of forced savings or for the creation of new resources which again can be used for next stage of development. That is why W. A. Lewis said that "Inflation for the purpose of capital formation is in due course self-destructive".

**To finance the Plans.** In developing countries like India which have adopted economic development huge resources are required for implementation of government investment. The government takes greater interest to create infrastructure, industrial development in vital sector besides transport and communication. Deficit financing is a useful tool.

**To serve as an alternative tool.** Underdeveloped countries suffer finance the Plans from low taxable capacity and low savings. Hence government's ability raise resources gets constrained. Therefore there is no harm in resorting deficit financing as an alternative source of mobilising

resources besides taxation and public borrowing.

### **Effects of deficit financing**

Deficit financing can make or mar progress if it is not carefully planned. It has diverse effects depending upon how it is handled. The major effects pertain to inflation and distribution of income.

1. Deficit financing and inflation. There are two views regarding the impact of deficit financing on prices. The first view is that deficit financing is pro inflationary. This view holds that the first impact of deficit financing is on the creation of new money. Deficit financing is recommended for the creation of capital goods whose gestation period is long. There is increase in incomes in this sector. But consumer goods. Sector does not respond quickly to bring more production.
2. This results in rise in prices of consumer goods which may prove to be spiralling. The price rise will be greater if market imperfections exist as bottlenecks to increased production.

Further, a part of the increased incomes, in the absence of sufficient goods to spend, may be channelized into commercial banks who may use it for further credit creation. In developing countries the inflationary pressures are due to monetary expansion after deficit financing. Inflation then tends to be demand pull type while deficit financing in developed countries causes cost push type of inflation on account of long-term gestation projects.

The poor developing countries are not well equipped in terms of monetary and fiscal policy to control inflation. Hence there is a possibility that unabated inflation on account of deficit financing may hinder economic development of these countries.

The second view holds that deficit financing is not necessarily inflationary because public sector has emerged as a dominant sector in these economies. If this additional finance is utilised for productive purposes, it need not be inflationary. Deficit financing is required to provide finance for increasing output at stable prices. If deficit financing is not resorted to there may be a decline in prices which will have an adverse effect on output and employment.

W. A. Lewis points out that there are three stages in the impact of deficit financing.

**In the first stage**, only capital goods industries are created through deficit financing and as they have long gestation, prices rise steeply.

**In the second stage**, the rise in prices makes people reduce consumption which results in forced savings which increases investment.

**In the third stage**, the capital formation of the first stage begins to bring consumer goods to the market which helps to lower prices. Therefore deficit financing is 'dangerous and painful' only in the first stage. In Lewis' view inflationary potential of deficit financing is therefore self-destructive. Others however point out that if the consumer goods are not increased in the second and third stages due to some constraints, inflation becomes rampant.

**Effect on distribution of income.** Deficit financing has certain undesirable effects on the distribution of income. Deficit financing provides incentives to entrepreneurs through larger profits on account of rising prices. But the same rising prices, reduces real incomes of the wage-earning class. This leads to a distribution of income in favour of the profit earning classes. Hence inequality of incomes widens. This is very much against the social objectives of equitable distribution of income and wealth.

Thus an analysis of the objectives and effects of deficit financing proves that it is a double-edged sword. Its effects can be good so far as it promotes capital formation and does not allow for a steep increase in prices. Its effects can be harmful if the inflationary potential goes uncontrolled, bringing

about adverse effects on distribution of incomes and wealth, thus increasing inequality. The exact impact of deficit financing depends upon the mode of deficit, governments' attitudes and policies, reaction of the private sector and growth of the public sector. Deficit financing can be a very useful and effective fiscal tool for development in underdeveloped countries if it is used only for capital formation to channelize resources into productive areas. The mild price rise on account of deficit financing in the early stages acts as an incentive to entrepreneurs to increase productive activity. Such a functional rise in prices is harmless.

### **Deficit Financing in India**

Deficit financing is a necessary evil in a welfare state since states frequently fail to produce enough tax income to cover the state's costs. Deficit financing enables the state to engage in initiatives that would otherwise be beyond its financial capability.

To solve the problem of a shortage of money to accelerate the country's growth. Encourage extra investment in the country to offset the negative effects of the country's depression era. Arrange funds to ensure the country's overall growth. To set aside funds for unanticipated eventualities and to allocate resources for wartime expenditures. To improve the country's infrastructure so that taxpayers may be certain that the money they spend in taxes is being spent wisely.

### **Types of Deficit Financing**

The types of deficit financing in India are:

- Revenue deficit, Fiscal deficit, and Primary deficit.
- Revenue deficit = Total revenue expenditure – Total revenue receipts.
- Fiscal deficit = Total expenditure – Total receipts excluding borrowings.
- Primary deficit = Fiscal Deficit-Interest payments

### **Revenue Deficit**

The revenue shortage is the difference between the government's total revenue spending and its revenue collections. It is exclusively concerned with the government's revenue expenditures and revenue receipts. Alternatively, revenue shortage is defined as the difference between total revenue received and total revenue expenditure.

A revenue shortfall indicates that the government's earnings are insufficient to cover the normal operation of government agencies and the supply of services. A revenue shortfall necessitates borrowing. Simply defined, a revenue shortage occurs when the government spends more than it gets in income. Keep in mind that the revenue shortfall only covers transactions that influence current income and spending.

### **Fiscal Deficit**

During a fiscal year, the fiscal shortage is defined as the excess of total budget expenditure over total budget receipts, excluding borrowings. Simply put, it is the amount of borrowing to which the government must resort to fulfil its costs. A significant shortage necessitates a substantial quantity of borrowing. The fiscal shortage is a measure of how much the government must borrow from the market to pay its expenditures when its revenue is low.

### **Primary Deficit**

The primary shortage is defined as the current budgetary shortage of fewer interest payments on prior borrowings. In other words, whereas budgetary shortage refers to borrowing requirements that include interest payments, primary shortage refers to borrowing requirements that do not include interest payments (i.e., amount of loan).

- The gap between the fiscal deficit and the primary shortage represents previous interest payments on state debt. Thus, a smaller or zero primary shortage indicates



that, while the government's interest commitments on previous loans compelled it to borrow, it has recognised the need to tighten its belt.

### **Calculation of Fiscal Deficit**

- Now that we have discussed the types of budgetary shortages, let us look at the way to calculate the fiscal shortage.
- Fiscal Deficit = Total Expenditure (Revenue Expenditure + Capital Expenditure) – (Revenue Receipts + Recoveries of Loans + Other Capital Receipts (all Revenue and Capital Receipts except loans taken)). The learners observe that the study meaning and objectives of deficit financing-effects of deficit financing-deficit financing in India.
- **To finance wars.** Deficit financing has been found to be the simplest and quickest method to finance huge War expenditures.
- **Impact of Deficit Financing:** It increases aggregate expenditure which in turn increases aggregate demand and hence the risk of inflation.

### **Finance Commission**

The Finance Commission in India is a constitutional body established under Article 280 of the Constitution. Its primary function is to make recommendations on the distribution of financial resources between the Central Government and State Governments. The Finance Commission plays a crucial role in ensuring fiscal federalism, equitable resource allocation, and financial stability in the country. Let's explore the details of the Finance Commission:

**Composition:** The Finance Commission consists of a chairman and four other members appointed by the President of India. The members of the Commission are typically experts in finance, economics, public administration, or related fields. The President appoints the Chairman and members for a specific term, which is usually five years. The Finance Commission is to recommend the distribution of tax revenues between the Centre and States. It also suggests the principles that govern the grants-in-aid to States from the Consolidated Fund of India.

**Recommendations on Tax Revenue Distribution:** The Finance Commission reviews the fiscal situation of both the Central Government and State Governments. It recommends the percentage of tax revenue that should be shared with States from the divisible pool of central taxes. The recommendations are based on various factors, including the revenue requirements of both the Centre and States, the resources available to them, and the need for fiscal autonomy for States. The goal is to strike a balance between the requirements of the Central Government and the fiscal needs of individual States.

**Criteria for Resource Allocation:** The Finance Commission uses certain criteria to assess the needs of States and determine the factors that should influence the allocation of resources. Some of the key criteria include population, income distance, area, fiscal capacity, and development Indicators. The Commission may modify the weightage given to these criteria based on changing circumstances and needs.

**Grants-in-Aid to States:** In addition to recommending the distribution of tax revenues, the Finance Commission suggests the amount and nature of grants-in-aid to be provided to the States. These grants aim to bridge the gap between the resources available to the States and their expenditure requirements. The grants can be untied or tied, depending on whether States have the flexibility to use the funds as per their priorities or for specific projects.

**Grants for Local Bodies:** The Finance Commission also makes recommendations for providing financial assistance to local governing bodies, such as Panchayats and Municipalities. These grants are intended to strengthen the financial position of local bodies and empower them to deliver essential services at the grassroots level.



**Periodicity:** The Finance Commission is appointed by the President every five years or at such intervals as deemed necessary. The periodicity ensures that the allocation of resources is reviewed regularly, considering changes in economic conditions and development priorities.

**Independence and Transparency:** The Finance Commission operates independently and functions free from external influence. It follows a transparent process, seeking inputs from the Central Government, State Governments, and other stakeholders during its study and recommendations.

**Non-Binding Nature of Recommendations:** The recommendations of the Finance Commission are not binding on the Government. However, they are typically accepted by the Central Government and form the basis for the devolution of financial resources to the States. The Finance Commission's role is critical in promoting cooperative federalism, ensuring fair and equitable distribution of funds, and fostering balanced economic development across the country. It helps in maintaining fiscal discipline, financial stability, and the harmonious functioning of the federal structure of India

## **Conclusion**

The recommendations of the Finance Commission are not binding on the Government. However, they are typically accepted by the Central Government and form the basis for the devolution of financial resources to the States. The Finance Commission's role is critical in promoting cooperative federalism, ensuring fair and equitable distribution of funds, and fostering balanced economic development across the country. It helps in maintaining fiscal discipline, financial stability, and the harmonious functioning of the federal structure of India.

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## **THE ROLE OF DIGITAL MARKETING ON CUSTOMER ENGAGEMENT IN THE HOSPITALITY INDUSTRY**

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***Abstract :** The digital marketing is essential for fostering customer engagement in the competitive hospitality industry. Through an integrated approach involving social media, personalized communication, and accessible online platforms, hospitality brands can strengthen customer relationships, boost satisfaction, and encourage repeat bookings. By understanding and applying like AIDA and relationship marketing, hospitality businesses in Tamil Nadu and beyond can drive engagement across all stages of the customer journey, from initial awareness to brand loyalty.*

***Keywords:** Digital Marketing, Hospitality, Trust and loyalty, Personalization, AIDA.*

### **INTRODUCTION**

Digital marketing has become a vital tool for driving customer engagement, especially within the hospitality industry, where creating lasting impressions and fostering strong relationships are paramount. The hospitality sector, encompassing hotels, resorts, restaurants, and other service-oriented establishments, relies heavily on effective communication with customers. Digital marketing offers diverse channels and tools that enable businesses to engage customers meaningfully, influencing their perceptions, choices, and loyalty. As technology advances, customers increasingly expect personalized, timely, and valuable interactions with brands. Digital marketing addresses these needs through methods such as social media engagement, targeted email campaigns, search engine optimization, and content marketing, allowing hospitality businesses to reach a global audience, build brand awareness, and strengthen customer relationships.

One of the primary benefits of digital marketing in the hospitality sector is its capacity for real-time engagement. Unlike traditional marketing, which often requires extended timelines, digital marketing allows businesses to connect with customers instantly. For example, social media platforms like Instagram and Facebook offer a space for hotels and restaurants to showcase their offerings, post interactive content, and engage with customers directly. Through comment responses, live chats, and direct messaging, businesses can address customer inquiries, complaints, or feedback immediately, creating a sense of responsiveness that builds trust and loyalty. Digital marketing plays a transformative role in enhancing customer engagement within the hospitality industry. By utilizing digital channels such as social media, email, and mobile apps, hospitality brands can foster meaningful connections with guests before, during, and after their stay. Interactive campaigns, personalized offers, and real-time communication allow businesses to deliver tailored experiences, increasing customer satisfaction and loyalty. With the rise of online reviews and social media influence, digital marketing is crucial for creating a strong online presence

that attracts and retains customers. This study explores how digital marketing strategies impact customer engagement in the dynamic hospitality sector.

## **DIGITAL MARKETING CHANNELS AND TOOLS**

Digital marketing has revolutionized the way businesses engage with their customers and promote their products or services. It encompasses a variety of channels and tools that enable businesses to reach a wider audience, optimize customer interactions, and increase brand visibility. Below, we explore some of the key digital marketing channels and tools.

### **Search Engine Optimization (SEO)**

SEO involves optimizing a website to rank higher on search engine results pages (SERPs) for relevant queries. It focuses on improving both the on-page and off-page elements, such as keyword optimization, content quality, website structure, and backlink quality. SEO is critical for businesses that want to drive organic (unpaid) traffic to their websites.

#### **Tools for SEO:**

- **Google Analytics:** Provides insights into traffic sources, user behavior, and conversion rates.
- **SEMrush:** A comprehensive tool for keyword research, competitor analysis, and site audits.
- **Ahrefs:** Specializes in backlink analysis and SEO keyword tracking.
- **Pay-Per-Click Advertising (PPC)**  
PPC advertising, such as Google Ads and Bing Ads, is a form of paid digital marketing where advertisers pay a fee each time their ad is clicked. PPC campaigns allow businesses to appear at the top of search engine results for specific keywords, ensuring immediate visibility.

#### **Tools for PPC:**

- **Google Ads:** The leading platform for creating and managing search ads, display ads, and shopping ads.
- **Bing Ads:** A PPC advertising platform on Microsoft's search engine, Bing.
- **WordStream:** A tool for managing PPC campaigns across multiple platforms, helping to optimize ads and manage budget.

### **Social Media Marketing**

Social media marketing involves creating and sharing content on social media platforms like Facebook, Instagram, Twitter, and LinkedIn to engage with audiences, build brand awareness, and promote products. Social media ads can be targeted based on user demographics, interests, and behaviors.

Tools for Social Media Marketing:

- **Hootsuite:** A social media management tool that allows businesses to schedule posts, track performance, and engage with followers across multiple platforms.
- **Buffer:** Another tool for scheduling posts and analyzing social media performance.
- **Sprout Social:** Provides social media scheduling, reporting, and engagement tools.

## Content Marketing

Content marketing focuses on creating and distributing valuable, relevant, and consistent content to attract and retain a clearly defined audience. This includes blogs, videos, infographics, podcasts, and eBooks.

Tools for Content Marketing:

- **BuzzSumo:** A content research tool that helps identify trending topics and top-performing content.
- **Canva:** A graphic design tool that enables marketers to create visual content like infographics, social media posts, and ads.
- **HubSpot:** A platform for inbound marketing that provides content creation, lead management, and customer relationship management tools.

## Email Marketing

Email marketing remains one of the most effective digital marketing tools for building relationships with customers. It involves sending personalized emails, promotions, newsletters, or product updates to a targeted audience.

Tools for Email Marketing:

- **MailChimp:** A widely used email marketing tool for creating campaigns, managing subscriber lists, and tracking performance.
- **Constant Contact:** Another email marketing tool that offers templates and marketing automation features.
- **SendGrid:** A platform for sending transactional emails and bulk emails with tracking features.
- **Affiliate Marketing** Affiliate marketing involves partnering with third-party marketers who promote your products in exchange for a commission on sales generated from their referrals. It is an effective way to increase product reach with minimal upfront costs.

Tools for Affiliate Marketing:

- **ShareASale:** A popular platform for managing affiliate marketing partnerships and tracking commissions.
- **CJ Affiliate:** Another leading affiliate marketing network that connects businesses with affiliates.

## COMPONENTS OF CUSTOMER ENGAGEMENT IN HOSPITALITY

Customer engagement in the hospitality industry refers to the interaction and emotional connection that customers have with a brand throughout their journey, from the pre-visit phase to post-stay. In the context of hospitality, engagement is not just about transaction-based interactions but also about building relationships that foster loyalty, advocacy, and long-term satisfaction. Customer engagement can be broken down into several key components, contributing to the overall customer experience and influencing future behavior. These components include **emotional engagement, behavioral engagement, cognitive engagement, and social engagement.**

### Emotional Engagement

Emotional engagement refers to the emotional bond or connection a customer feels toward a hospitality brand. It is driven by how well the brand resonates with the customer's values, preferences, and needs. In the hospitality industry, emotional engagement is critical because it influences customer loyalty, retention, and the likelihood of repeat business. A customer who

feels emotionally connected to a brand is more likely to choose that brand repeatedly over competitors, even if they offer similar services.

### **Behavioral Engagement**

Behavioral engagement involves the observable actions that customers take in response to digital marketing efforts or brand interactions. In hospitality, this can be measured through activities such as social media interactions (likes, comments, shares), writing reviews, participating in loyalty programs, making repeat bookings, or recommending the brand to others. Behavioral engagement is often the most tangible way to assess customer involvement with a brand.

### **Cognitive Engagement**

Cognitive engagement refers to the mental effort and attention that customers devote to understanding, processing, and evaluating information related to a brand. In the hospitality industry, cognitive engagement is especially relevant during the decision-making phase of the customer journey. When a customer is considering a stay at a hotel or resort, they engage with various types of information, such as reviews, blog posts, videos, and social media content. The more cognitively engaged a customer is, the more likely they are to feel confident in their decision and be drawn to a particular brand.

### **Social Engagement**

Social engagement focuses on the interactions customers have within a community or social network, including online platforms such as social media, review sites, and forums. In the hospitality industry, social engagement is important because it allows brands to tap into the power of social proof, where customer opinions, reviews, and experiences influence others. A customer who engages with a brand's social media profile, shares content, or interacts with fellow customers is participating in the brand's social ecosystem.

### **Transactional Engagement**

Although not always emphasized, transactional engagement is a critical component, particularly in hospitality, where bookings, payments, and loyalty are central to the customer journey. Transactional engagement refers to the interaction between the customer and the brand during the process of making a purchase or booking a service. This includes booking a hotel room, purchasing tickets to an event, or redeeming rewards through a loyalty program.

## **INFLUENCE OF DIGITAL MARKETING ON CUSTOMER ENGAGEMENT DIMENSIONS**

Digital marketing plays a pivotal role in shaping customer engagement across various dimensions, influencing how customers interact with brands, perceive value, and build long-term relationships. In the hospitality industry, the integration of digital tools and platforms allows brands to create personalized, targeted experiences that engage customers on multiple levels. The key dimensions of customer engagement—trust and loyalty, personalization, brand experience and satisfaction, and social influence and advocacy—are all significantly influenced by digital marketing strategies, leading to deeper connections and stronger brand relationships.

### **Trust and Loyalty**

Trust is one of the foundational elements of customer engagement. It refers to the belief that a brand will consistently meet or exceed customer expectations. Digital marketing strategies help build trust by maintaining transparent communication and delivering consistent experiences across digital platforms. Social media platforms, emails, and websites all serve as touchpoints where brands can provide valuable content, respond to customer inquiries in real-time, and handle



customer feedback promptly. By providing timely information, addressing concerns, and ensuring customer satisfaction, brands can strengthen trust.

Loyalty, on the other hand, is a direct result of trust and repeated positive experiences. Digital marketing tools such as loyalty programs, exclusive offers, and personalized email campaigns are commonly used to cultivate customer loyalty in the hospitality industry. For example, a hotel's mobile app might offer special discounts for returning customers or provide a points-based system to incentivize repeat stays. These efforts, supported by digital marketing, encourage customers to return and make future bookings, increasing customer lifetime value.

#### **Personalization**

Personalization is a key driver of engagement in the digital age. Through digital marketing, brands can gather data on customer preferences, behaviors, and past interactions, which enables them to deliver highly personalized experiences. For example, using customer data from previous bookings, a hotel can offer tailored room recommendations, suggest activities based on past visits, or send personalized discounts via email. This level of personalization makes customers feel valued and understood, which significantly enhances their engagement with the brand.

Personalization can also extend to content marketing, where brands use data to create relevant and engaging content. For instance, a resort might create blog posts or videos about specific types of vacations (e.g., family vacations, adventure trips, romantic getaways) based on the interests of their audience. By speaking directly to customers' preferences, brands can increase the likelihood of engagement, as customers are more likely to interact with content that resonates with their needs.

#### **Brand Experience and Satisfaction**

Digital marketing plays a crucial role in shaping the overall brand experience, which is a key factor in customer satisfaction. The brand experience encompasses every interaction a customer has with the brand, from browsing a website to engaging with social media content and receiving customer service. Digital marketing ensures that these interactions are seamless, intuitive, and enjoyable.

#### **Social Influence and Advocacy**

Social influence and advocacy are powerful drivers of customer engagement, and digital marketing has amplified these dimensions in the modern age. Social media platforms, online review sites, and influencer collaborations allow customers to share their experiences with a wider audience, making their opinions more influential. Positive reviews, user-generated content (UGC), and recommendations on platforms like Instagram, Facebook, and TripAdvisor contribute to the social proof of a brand's quality and value.

Customer advocacy is particularly important in hospitality, as people often trust the opinions of their peers over brand advertisements. Digital marketing strategies that encourage customers to share their experiences or refer others—such as referral programs or social media campaigns with hashtags—help create a network of brand advocates. When customers post photos of their stay at a hotel or leave a glowing review on a travel website, they are not only engaging with the brand but also promoting it to their social circle, influencing others to engage as well.

Influencers also play a significant role in shaping social influence. By partnering with relevant influencers or content creators, hospitality brands can tap into their established audience, driving engagement through recommendations and lifestyle content. Influencers who share authentic, positive experiences can have a substantial impact on their followers' perceptions and decisions, further enhancing customer engagement.

### **Impact on Customer Lifecycle**

Digital marketing influences engagement across the entire customer lifecycle, from awareness to advocacy. It allows brands to build initial awareness through targeted ads, search engine optimization (SEO), and content marketing. Once customers become aware of the brand, digital marketing strategies continue to nurture the relationship, moving customers toward deeper engagement. For example, email marketing campaigns can nurture relationships by offering customers relevant information, special deals, or personalized content that aligns with their journey. Mobile marketing, through apps and notifications, can encourage ongoing engagement by providing real-time offers, reminders, or incentives for future visits. At the advocacy stage, digital marketing encourages customers to share their experiences online, review services, and refer others, which continues the engagement loop and draws in new customers.

### **Theoretical Models Underpinning Customer Engagement**

Customer engagement is a complex phenomenon, and various theoretical models have been developed to understand how it unfolds in different contexts, including the hospitality industry. These models offer insights into the processes through which brands build relationships with customers, guide their decision-making, and foster long-term loyalty. Understanding these models helps hospitality businesses design effective marketing strategies that promote deeper engagement with their customers. Some of the most significant theoretical models underpinning customer engagement include the AIDA Model, the Customer Engagement Cycle, and Relationship Marketing Theory.

#### **The AIDA Model (Attention, Interest, Desire, Action)**

The AIDA model is one of the most widely recognized frameworks for understanding the stages a customer goes through before making a purchasing decision. It outlines four stages:

- **Attention:** The first stage involves capturing the customer's attention, often through advertising or content marketing. In the hospitality industry, this can be done through eye-catching social media posts, compelling website designs, or paid search engine ads. The goal is to make potential customers aware of the brand.
- **Interest:** Once attention is captured, the next step is to generate interest in the brand's offerings. For example, a hotel might offer detailed descriptions of services, amenities, or exclusive promotions through blogs or videos. This phase aims to educate the customer about what the brand offers and how it aligns with their needs.
- **Desire:** After fostering interest, the goal is to spark desire. This phase is where the customer envisions themselves benefiting from the product or service. In hospitality, this might involve highlighting customer testimonials, showcasing the hotel's unique selling points, or creating a sense of urgency with limited-time offers.
- **Action:** The final stage is where the customer takes action, such as booking a hotel room or purchasing a service. In digital marketing, this stage can be supported by clear calls to action (CTAs), easy booking processes, and special discounts or promotions to encourage

conversion.

The AIDA model helps brands understand how to move customers through the decision-making process, guiding their engagement from initial awareness to final action.

- **The Customer Engagement Cycle**

The Customer Engagement Cycle model expands on the traditional idea of customer interaction by conceptualizing engagement as an ongoing, cyclical process rather than a linear progression. This model includes several stages that focus on the long-term relationship between customers and the brand:

- **Awareness:** The first phase of the cycle, where customers become aware of the brand. This is often achieved through digital marketing efforts like search engine optimization (SEO), social media marketing, and content creation.
- **Interest and Interaction:** Once aware, customers develop interest in the brand and begin to interact with it, such as following on social media, reading blog posts, or subscribing to a newsletter. During this phase, the brand nurtures engagement by providing value-driven content and personalized offers.
- **Commitment and Loyalty:** After engaging with the brand, some customers become loyal, consistently interacting with the brand and making purchases. Loyalty programs, exclusive offers, and personalized recommendations help reinforce this commitment.
- **Advocacy:** Loyal customers who continue to engage with the brand may transition into advocates. These customers not only make repeat purchases but also promote the brand through word-of-mouth, online reviews, or social media posts. The Customer Engagement Cycle highlights that engagement doesn't end with a single interaction or transaction but continues throughout the customer's relationship with the brand. This cycle emphasizes the importance of fostering ongoing interactions to build loyalty and advocacy.

### **Relationship Marketing Theory**

Relationship Marketing Theory focuses on the long-term relationship between a business and its customers, rather than just on individual transactions. This theory posits that customer retention is more cost-effective than customer acquisition, and that building trust, satisfaction, and loyalty leads to sustained customer engagement.

#### **Key aspects of Relationship Marketing Theory include:**

- Relationship marketing emphasizes the importance of retaining existing customers rather than constantly acquiring new ones. In the hospitality industry, this might involve offering personalized services, loyalty rewards, or exclusive promotions for returning guests.
- **Customer Retention: Trust and Commitment:** The theory argues that strong, long-lasting customer relationships are built on trust and mutual commitment. This is particularly relevant in hospitality, where customer satisfaction and trust are critical to engagement. Trust can be established by ensuring high-quality service, transparency in pricing, and consistency in delivering brand promises.
- **Mutual Benefit:** Relationship marketing highlights the mutual benefits of engagement. Both the business and the customer gain from a relationship: the brand gains repeat business, while customers enjoy personalized attention and services. In hospitality, this could manifest in special perks or customized packages that make customers feel valued and appreciated.

Relationship marketing is essential in hospitality because the sector thrives on repeat customers and word-of-mouth recommendations. Brands that build strong relationships with their customers are more likely to see ongoing engagement and customer loyalty.

### **Engagement as a Psychological State**

Some models focus on customer engagement as a psychological state, where customers feel a sense of involvement, enthusiasm, or emotional connection with the brand. This engagement is typically driven by how much value the customer perceives they gain from interacting with the brand. In the hospitality industry, engagement can be fostered through personalized experiences, interactive social media content, and engaging loyalty programs that create a sense of belonging.

Engagement in this context is often measured by a customer's level of emotional investment, time spent interacting with the brand, and their willingness to share their experiences with others. This psychological perspective underlines the importance of emotional connections, as customers who feel personally invested in a brand are more likely to engage meaningfully.

The Service-Dominant Logic (S-D Logic)

Service-Dominant Logic (S-D Logic) is a broader conceptual model that applies to customer engagement, especially in service industries like hospitality. According to this model, value is co-created between the business and the customer, rather than being delivered solely by the business to the customer. In hospitality, this model emphasizes the active role customers play in shaping their experiences. For example, a guest may interact with hotel staff to customize their room service order or give feedback on amenities, which then informs how the hotel refines its offerings.

S-D Logic focuses on collaboration and co-creation as central elements of customer engagement. In hospitality, this means that engaging customers in a meaningful, personalized way allows both the business and the customer to contribute to the creation of value.

### **IMPACT OF DIGITAL MARKETING ON CUSTOMER ENGAGEMENT**

Measuring the impact of digital marketing on customer engagement is crucial for understanding how well a brand is connecting with its audience and whether its marketing strategies are driving the desired outcomes. Digital marketing encompasses various activities such as content marketing, social media engagement, email marketing, search engine optimization (SEO), and online advertisements. The goal of these efforts is to increase customer interaction with the brand, foster emotional connections, and ultimately drive loyalty, advocacy, and conversion. Understanding how these digital tactics affect customer engagement requires the use of various performance metrics and analysis tools.

### **KEY METRICS FOR MEASURING CUSTOMER ENGAGEMENT**

#### **Website Traffic and Bounce Rate:**

Website traffic is one of the most direct indicators of engagement. An increase in website visitors, especially those who spend time exploring content or completing actions (like making bookings or signing up for newsletters), reflects higher engagement. A low bounce rate (the percentage of visitors who leave the site after viewing one page) signals that users are engaging with the content.

#### **Social Media Engagement:**

Social media is a critical platform for measuring customer engagement in digital marketing. Key metrics include the number of likes, comments, shares, and mentions a brand receives. High

levels of interaction on posts suggest that customers are not only consuming content but also actively participating in the brand's online community.

**Click-Through Rate (CTR):**

The CTR of digital ads, email campaigns, and social media posts measures how often people click on a link or call to action (CTA) within a marketing piece. A higher CTR indicates that customers are interested enough to engage further with the content or offers, signaling effective customer engagement.

**Conversion Rate:**

Conversion rate measures the percentage of visitors who complete a desired action, such as making a purchase, signing up for a newsletter, or downloading an app. A high conversion rate suggests that digital marketing efforts are successfully guiding customers through the decision-making process and engaging them effectively.

**Customer Feedback and Sentiment:**

Analyzing customer reviews, comments, and sentiment analysis on social media or survey responses provides qualitative insights into how customers feel about the brand.

**Customer Retention and Loyalty:**

Retention rates, repeat purchases, and participation in loyalty programs reflect ongoing customer engagement. Successful digital marketing campaigns that drive repeat engagement and foster long-term relationships are a strong indicator of the positive impact on customer engagement.

**Suggestions for Development of Hospitality Industry in Digital Marketing**

- **Enhance Personalization:** Hospitality brands should continue to personalize customer interactions through tailored email campaigns, offers, and recommendations based on past behaviors and preferences.
- **Leverage Online Reviews:** Actively encourage satisfied customers to leave reviews on popular platforms, as positive feedback significantly impacts new customers' decisions.
- **Optimize for Mobile:** Ensure websites and booking platforms are mobile-friendly to meet the growing demand for mobile-based interactions and improve user experience.
- **Increase Social Media Engagement:** Invest in social media marketing to connect with younger audiences, showcase amenities, and highlight customer testimonials, which build trust and attract potential guests.
- **Implement Data Analytics:** Use analytics tools to track engagement metrics and refine marketing strategies, ensuring they align with evolving customer preferences and trends.
  - These steps can help the hospitality industry harness digital marketing to boost customer engagement and loyalty effectively.

**CONCLUSION:**

The digital marketing has redefined customer engagement in the hospitality industry by enabling real-time communication, personalized marketing, and customer-driven content. By effectively leveraging digital tools, hospitality brands can not only enhance customer satisfaction but also cultivate long-term relationships that contribute to sustained success in an increasingly competitive market. As digital marketing continues to evolve, it remains an essential component for hospitality businesses aiming to deliver outstanding service and memorable experiences that keep customers coming back.

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## **ROLE AND CONTRIBUTION OF TOURISM IN ACHIEVING SUSTAINABLE DEVELOPMENT GOALS**

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***Abstract:** This chapter examines tourism's role in achieving sustainable development goals (SDGs), analysing its contributions across all seventeen goals. It investigates how tourism stimulates economic growth, job creation, poverty alleviation, and the uplift of marginalized communities through a thorough literature review and report analysis. The chapter emphasizes the potential of responsible tourism for peace, cultural understanding, and environmental sustainability as well as the influence of tourism on important issues like gender equality, health, and education. It also looks into how various stakeholders contribute to reaching these SDGs. Stakeholders can work together to create a more sustainable, resilient and equitable future by acknowledging and maximizing the contributions of tourism. The descriptive chapter seeks to enhance knowledge of the tourism-SDG relationship by providing insights for scholars, researchers, and industry professionals to optimize the advantages of their interrelationship. It is based on secondary data and a review of the literature.*

***Keywords:** Sustainable development goals, Tourism, Stakeholders, Environmental, Goals*

### **INTRODUCTION: EVOLUTION OF SUSTAINABLE DEVELOPMENT GOALS**

As evidenced by the term's initial use in the World Charter for Nature, sustainable development (SD) initially arose to address environmental concerns (Jackson, 1983 & UN, 1992). Agenda 21 of the 1992 Earth Summit highlights and expands on these issues (UN, 1992). In order to achieve sustainable development on a worldwide scale, this summit was a tremendous attempt to balance two important separate features, such as economic advancement and environmental protection, by conserving and protecting the natural resources (Meadows et al., 1972).

Later, the World Summit on Sustainable Development in Copenhagen in 1995 (UN, 1995) added to the modern definition of sustainable development by elucidating its crucial role in achieving universal social development. This was also acknowledged by the World Summit on Sustainable Development in Johannesburg in 2002 (UN, 2002). The notion of the green economy was discussed at the United Nations Summit the following year, highlighting its important role in ending poverty and its connection to environmentally friendly sustainable development (UN, 2012).

Ultimately, the 17 Sustainable Development Goals (SDGs) were formally adopted and proclaimed by the UN in September 2015 as a crucial component of the 2030 Agenda for Global Sustainable Development (UN, 2015). Global problems like poverty, famine, sickness, unmet educational needs, gender inequality, and environmental degradation are addressed by the Millennium Development Goals, which are closely linked to the Sustainable Development Goals (SDGs) (Sachs, 2012). The objectives cover all of these pressing issues that need to be resolved diplomatically, tactically, and globally.

The participation of stakeholders plays a crucial role in achieving these objectives and should be conducted with responsibility, considering the unique situations related to tourism events in destinations around the world. The viewpoints of tourism stakeholders, along with their awareness and comprehension of sustainable development goals (SDGs), are the key factors influencing the successful realization of SDGs globally through tourism.

### **LINKING TOURISM WITH SUSTAINABLE DEVELOPMENT GOALS**

The United Nations' announcement of the Sustainable Development Goals (SDGs) highlights the critical role that all UN members must play in fulfilling strategic political and financial pledges to achieve sustainable development. One way to achieve sustainable development goals is through tourism. By giving member countries a shared platform to build economic ties, the global travel and tourism sector is a major factor in promoting global understanding and peace (Jones et al., 2017). It creates avenues for communication between members of the global civilization. It gives people the chance to go to and discover different nations on different continents and learn about their cultures, histories, religions, and lifestyles, which broadens their knowledge base.

The idea of rural tourism promotes the preservation and maintenance of nature and its ecosystem in order to showcase its inherent visual value to visitors, aiding in the achievement of SDG no.13, which deals with the fight against climate change. Due to its labor-intensive nature, the tourism business offers a plethora of professional opportunities, particularly for women. By aiming for SDG no. 5 gender equality and women's empowerment, it establishes a safe environment for women pursuing career opportunities in the tourism and hospitality sector (UNWTO, n.d.).

### **CONTRIBUTION OF TOURISM IN ACHIEVING ALL THE 17 SDGS**

<b>SD G No.</b>	<b>SDG</b>	<b>How tourism contributes in achieving the SDG</b>	<b>Outcomes</b>	<b>Suggested By</b>
1	No poverty	Builds human capital assets among poor through skill development, revenue is invested for pro-poor services, promotes community inclusive tourism products & activities, ensures participative approach	Leads to better job prospects, reduces economic disparity, gives opportunity to work and earn, gives equal say in policy & other matters	(Croes, 2014; Medina-Muñoz et al., 2016)
2	Zero hunger	Slum and pro-poor tourism cares for needy and take tourism to them	Brings socio-economic benefits for poor	(Obrien, 2011)
3	Good health and well-being	Health, wellness, spa, medical, yoga and adventure tourism encourage tourists and hosts to	Keeps tourists and host organizers healthy and mentally	(Koncul, 2012)

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		actively engage in physical and mental activities	strong	
4	Quality education	Tourism trains and educates human resources through elementary, university, skill based, vocational based education	Increases literacy, improves skills, empowers human resources, brings social change & improves quality of life	(Buhalis et al., 2023)
5	Gender Equality	Provides equal and favourable job & entrepreneurial opportunities at all levels of involvement	Eliminates gender bias discrimination against women	(Zhang & Zhang, 2021)
6	Clean water and sanitation	Tourism destinations are kept sanitized and clean water facility is ensured for all	Reduces waste, proper & clean water supply, waste water management	(Frone & Frone, 2013)
7	Affordable and clean energy	Adopting alternative & renewable sources of energy for accommodation, transportation etc.	Reduces carbon emissions, saves energy	(İşik et al., 2017; Kelly & Williams, 2007)
8	Decent work and economic growth	Provides job, encourage investment, boost local economy, stimulates the growth of other sectors	People get job, start enterprises, government gets taxes, industries get revenue hence ensures overall economic growth	(Garidzirai & Pasara, 2020; Gökovali & Bahar, 2006)
9	Industry, innovation and infrastructure	Develops infrastructure for roads, parks, airports, accommodation units, other projects as well as drives innovation for product development & service delivery	Encourages new ideas, innovation in diverse areas along with infrastructure development	(Khadaroo & Seetanah, 2007; Mandic et al., 2018)
10	Reduced inequalities	Inclusive tourism seeks social cohesion, provides equal opportunities to all irrespective of gender, race, religion, age etc.	Equal & fair opportunities for job, work, education and participate in tourism	(Chin et al., 2023; Peña-Sánchez et al., 2020; Sabina & Nicolae, 2013)
11	Sustainable cities and communities	City resources are promoted for urban tourism and provides local communities various economic and other opportunities	Makes cities & destinations liveable, safe, prosperous and improves social condition	(Hernandez-Garcia, 2013; Setyaningsih et al., 2016)
12	Responsible consumption and production	Motivates environment friendly behaviour and consumption, delivers eco-friendly products, frames regulations for responsible tourism	Ensures durability of tourism resources, protection of environment & culture, enhances destination image	(Mehmetoglu, 2009; Sharpley, 2021)

13	Climate action	Adapting to diversification of tourism products and applying reforms & innovation in resource management, waste management, physical planning, land management, coastal management etc.	Helps to negate or counter the effects of climate change on destination	(Gómez-Martín et al., 2014.; Mycoo, 2014; Njoroge, 2015)
14	Life below water	Creates awareness and education among stakeholders to protect & conserve marine resources & habitat, frames regulations for adherence & monitoring	Sustains marine eco-system, protects species & local coastal environment	(Marlina et al., 2020; Trave et al., 2017)
-15	Life on land	Provides support and resources for natural-cultural conservation and community welfare	Conserves resources and improves social living conditions	(Kaffashi et al., 2015; Tisdell, 2003)
16	Peace, justice and strong institutions	Encourages cross-cultural engagement, gives fair economic opportunities, involves multi-organizational inputs & participation for tourism development	Dispels negative stereotypes, fosters goodwill among communities, gives equal treatment, contributes to building peace & harmony	(Castañeda & Burtner, 2010; Levy & Hawkins, 2009; Pratt & Liu, 2016)
17	Partnerships for the goals	Fosters partnership & collaboration among government bodies, private organizations, local communities, tourists, destination managers, researchers & educational institutions	Achieves sustainable development & industry growth and wellbeing of all	(Feyers et al., 2020; Selin, 1999)

#### **CRITICISM TO TOURISM'S CONTRIBUTION TO SDGs**

A major obstacle to reaching sustainable development goals is the detrimental effects of tourism. Even though tourism boosts the economy, it frequently has negative effects on the environment and local populations. Common problems linked to widespread tourism include socioeconomic inequality, cultural deterioration, and environmental degradation. Destination communities have severe issues as a result of these detrimental effects, which span economic, sociocultural, and environmental dimensions (Buhalis et al., 2023). The pursuit of sustainability goals is hampered by pollution, the demand on local resources, and the disruption of traditional lifestyles. Overcoming these obstacles and moving the tourist industry closer to sustainable development goals requires finding a balance between the economic benefits of tourism and the protection of regional ecosystems and communities.

There may be differences in the tourism sector as well when it comes to guaranteeing equitable participation by all genders. Women may not have equal opportunities to engage in and succeed in the tourism industry in rural and semi-urban areas. Gender inequality that is pervasive in society at large has resonance in the tourism sector. Highlighting the necessity of more inclusive methods to address current inequalities (Zhang & Zhang, 2021). The tourism business may become more egalitarian and socially conscious by acknowledging and resolving these gender discrepancies.

**TOURISM STAKEHOLDERS AND THEIR INVOLMENT IN ACHIEVING SDGs**

<b>S. No.</b>	<b>Tourism Stakeholders</b>	<b>Participation in achieving SDGs</b>
1.	Tourist e.g. Backpackers, families, luxury, business, adventure, students	Tourist visiting in tourist destinations such as cities, rural areas and its local communities helps in accomplishing the goal SDG11
2.	Suppliers e.g. farmers, Service providers, manufacturers	Farmers and several manufacturers being ancillary service provider of tourism promote SDG 9, SDG 12
3.	Employees e.g. waiters, taxi drivers, tour managers, holiday planner, Customer relationship managers	Achieves SDG 1, SDG 2, SDG 8
4.	Education e.g. Students, employees undertaking training and development, education providers, educational institutes	Generates great learning experience for tourist and the tourism service provider also seeking SDG 4
5	Utilities and Infrastructure e.g. power plants, utility companies, road maintenance	Creation of infrastructure for better accessibility and to support tourism occurrences helps in achieving SDG 9
6	NGOs e.g. The tourism society, The Travel Foundation	The NGOs operates in tourism sector with a view to support tourists' destinations and its community SDG 11, SDG 13, SDG 15
7	Micro Small and Medium Enterprises (MSME) e.g. small enterprises supporting restaurants, hotels, homestays	MSME supports SDG 5, SDG 10 & SDG 8
8	Transport e.g. airlines, transport providers, cruises, trains	Enables to achieve SDG 9
9	Tourism Organisations & Operators e.g. travel agent, DMO, tour operators	Helps in achieving SDG 8, SDG 9, SDG 11
10.	Government e.g. local, regional, national	Acquires SDG 6, SDG 7, SDG 8 SDG 9
11.	Communities e.g. host community, guest community, global community.	Achieves SDG 11, SDG 16
12.	Collaborative efforts all of the above stakeholders	Initiates SDG 16, SDG 17

**CONCLUSION**

The study provides a comprehensive overview of the evolution of the concept of Sustainable Development (SD) and how it has been incorporated into the global agenda through various United Nations (UN) summits and declarations, before shifting focus to the pivotal role of tourism in achieving the 17 Sustainable Development Goals (SDGs) established in 2015. The involvement of stakeholders, particularly tourism stakeholders, is considered an essential element in achieving these objectives. The study highlights that tourism is a powerful tool for promoting international understanding, cultural exchange and economic development. It examines how tourism contributes directly and indirectly to each of the 17 SDGs, from poverty reduction and zero hunger to climate action and partnerships to achieve

these goals. Well-known examples such as agritourism and rural tourism demonstrate how specific tourism practices align with and support individual SDGs. The role of tourism in contributing to each Sustainable Development Goal (SDG) is elaborated in Table 1, highlighting the diverse effects of the sector on global progress. The instances mentioned in the table illustrate how tourism can drive positive transformation, fostering economic advancement, ecological sustainability, and social welfare. Nevertheless, the research also recognizes the criticisms and challenges related to tourism's role in the SDGs. The adverse effects, including environmental harm, cultural dilution, and socio-economic disparities, present considerable hurdles to realizing sustainable development through tourism. The importance of a balanced strategy that prioritizes the well-being of local communities and ecosystems is emphasized.

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## **EFFECT OF ONLINE REVIEWS ON THE CONSUMERS' PURCHASE BEHAVIOUR**

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*Abstract: Online reviews have a significant influence on how consumers behave when making purchases in the current digital era. As social media and e-commerce platforms grow in popularity, customers are depending more and more on user-generated material to help them make decisions. Online evaluations provide information about the experiences and viewpoints of prior customers and function as a type of electronic word-of-mouth (eWOM). This study looks at the significant influence that internet reviews have on consumer behaviour, emphasising important elements including review volume, valence, credibility, and platform. While bad reviews might discourage potential customers and foster scepticism, positive evaluations have been demonstrated to increase consumer trust, improve company reputation, and dramatically raise the likelihood that a purchase would be made. Furthermore, the degree to which customers trust and act upon the information offered is influenced by the reviewers' perceived legitimacy and level of knowledge. Product categories also differ in the impact of reviews; for example, thorough reviews tend to have a greater impact on high-involvement products (such electronics or appliances) than on low-involvement products. This abstract also examines the psychological and sociological factors—such as risk aversion, herd behaviour, and the need for social validation—that underlie consumers' dependence on reviews. It also explores how algorithms and filters influence how customers evaluate businesses and goods by giving priority to particular evaluations. The study's conclusions highlight the need for companies to actively manage their online review presence in order to foster customer trust by guaranteeing openness, responsiveness, and involvement. Businesses and marketers can more effectively plan to shape consumer impressions and cultivate brand loyalty by comprehending the subtleties of how internet reviews impact purchasing decisions. This work adds to the expanding corpus of research on digital consumer behaviour and provides insightful information for both industry and academics.*

### **INTRODUCTION**

The way consumers make judgements about what to buy has changed as a result of the quick development of digital technology and the spread of e-commerce platforms. Online evaluations, which serve as a contemporary kind of word-of-mouth advertising, have become one of the most significant elements in this digital environment. Online reviews, in contrast to conventional marketing methods, offer genuine, user-generated content that prospective customers find more relatable and reliable. This change in consumers' dependence on peer judgements emphasises how crucial it is to comprehend how internet reviews influence customer behaviour when making **PURCHASES**.

When customers are looking for information about goods or services, they frequently start by

reading online reviews. Users now have easier access to a wide range of viewpoints because to platforms like Google Reviews, Yelp, TripAdvisor, and Amazon. These reviews are an essential source of information that lowers doubt and aids customers in assessing the dependability, performance, and quality of goods. Online reviews are a reflection of a company's reputation and level of customer service, in addition to having an impact on client acquisition.

There are concerns regarding the behavioural and psychological processes that underlie the growing reliance on internet reviews. Consumer decision-making is greatly influenced by elements including the reviewer's credibility, the quantity and regularity of reviews, and the general tone (positive or negative). The context of the transaction, such as whether it is a regular purchase or a costly investment, also influences how much customers rely on evaluations.

The goal of this study is to investigate the complex ways that internet reviews influence consumer behaviour. This study attempts to give a thorough knowledge of the relationship between online reviews and consumer purchasing behaviour by looking at the dynamics of trust, decision-making, and the interaction between reviews and digital marketing methods. Businesses and marketers can improve customer happiness and loyalty by using this information to better manage the intricacies of digital consumer engagement and optimise their strategy.

### **Objectives**

1. Analyse the Impact of Online Reviews on Consumer Choices: To investigate the ways in which online reviews impact customers' choices to buy a range of goods and services.
2. Determine the Main Elements That Influence Trust in Online Reviews: To look into how reviewers' competence, honesty, and credibility affect customer perceptions and trust.
3. Examine the Influence of Review Sentiment • To investigate how consumer purchase intentions are impacted by favourable, unfavourable, and mixed reviews.
4. Examine the Impact of Review Volume and Consistency: To determine how consumer confidence in making decisions about purchases is influenced by the quantity and consistency of reviews.
5. Recognise the Function of Platforms and Algorithms: To examine how various platforms and their algorithms influence customer behaviour and rank reviews.
6. Examine Psychological and Social Dynamics: To look into behavioural elements that influence consumers' dependence on online reviews, such as risk aversion and herd mentality.
7. Give Businesses Strategic Insights • To give businesses practical suggestions on how to control and enhance their online review presence in order to increase customer engagement and brand loyalty.

## **LITERATURE REVIEW**

### **1.Sentiment and Consumer Trust**

After 2020, a substantial amount of study has focused on how sentiment shapes customer opinions. While negative evaluations are frequently seen as credible, especially in high-involvement purchases like gadgets or upscale services, positive ratings continue to build trust and increase the likelihood of making a purchase. Studies by Lee et al. (2022) show that customers frequently depend on positive reviews to lower perceived risk and increase confidence in their purchases. On the other hand, even a small number of unfavourable reviews can discourage customers, particularly if they point out flaws in the product or subpar customer service.

## **2. Volume of Reviews and Social Proof**

When it comes to customer decision-making, review volume is quite important. Customers link a high number of reviews to a product's popularity and quality, according to recent studies. Online reviews have more persuasive power because of the social proof effect. Products with more reviews are frequently seen as more reliable, according to Wang et al. (2021), which is consistent with the idea of social validation in decision-making. This effect, however, is lessened when the reviews are polarised, with moderate or extremely unfavourable comments making the product seem less appealing.

## **3. Impact in Specific Industries**

Recent studies on internet reviews have focused especially on the retail and hotel sectors. A 2020 study by Sudhakar and Gunasekar on the hotel sector demonstrates how consumer reviews and brand reputation work together to affect purchasing decisions. While inexpensive hotels are more directly impacted by bad reviews, high-end hotels typically maintain their attraction despite receiving some unfavourable reviews because of their considerable brand equity. This dynamic implies that the strength of a brand's current reputation influences the impact of reviews.

## **RESEARCH METHODOLOGY**

In order to provide a thorough analysis, this study combines quantitative and qualitative research methods in a mixed-method approach to investigate the influence of internet reviews on customer purchasing behaviour. The following is how the research will be organised: 1. Quantitative Method: Design of the Survey

To learn more about consumer attitudes and actions around internet reviews, a structured survey will be created. Questions about how often people read reviews, how they understand them, and how much they affect their decisions to buy will be posed to the respondents. A Likert scale will be used in the survey to gauge customer confidence in reviews, the significance of reviews' sentiment (whether positive or negative), and the effect of review volume. To guarantee wide representation across age, gender, and frequency of purchases, the sample will be selected from a variety of customer demographics. The association between review factors (volume, sentiment, and credibility) and consumer purchase intents will be evaluated using statistical techniques like regression analysis. 2. Qualitative Method: Comprehensive Interviews

A smaller selection of participants who often interact with online reviews will be interviewed in-depth to obtain a deeper understanding of customer behaviour. The goal of these interviews is to identify the psychological and social elements—such as perceived social proof, brand loyalty, and trust—that affect review perceptions. To find reoccurring themes and behavioural patterns in customer reactions to online reviews, content analysis will be used. 3. Gathering and Sampling Data

Participants who frequently visit e-commerce websites will be the target audience for the quantitative survey, which will be disseminated online. To guarantee that different consumer segments (age, income, and tech-savviness) are represented, a stratified random sample technique will be used. Volunteers from the survey pool who have expressed a desire to provide more information will participate in the qualitative interviews. 4. Methods of Analysis

Regression analysis will be used to determine the statistical relevance of various review attributes (such as valence, volume, and source credibility) on purchasing behaviour based on the quantitative data. Consumer reliance on internet reviews can be influenced by underlying

constructs that can be found through factor analysis. Thematic analysis will assist in classifying and interpreting qualitative data, revealing important themes and insights about consumer trust and how consumers make decisions about online reviews.

**5. Moral Points to Remember**  
Before beginning the study, ethical permission will be sought, guaranteeing participant confidentiality and obtaining informed consent. The freedom to leave the study at any moment and without penalty will be explained to participants. The study would abide by ethical guidelines pertaining to transparency and data privacy.

The goal of this research is to offer a comprehensive understanding of the dynamic function that internet reviews play in the decision-making process of consumers. The study will provide insights into the quantifiable impacts of online reviews as well as the more profound psychological factors influencing consumer behaviour by integrating quantitative and qualitative methodologies.

### **KEY FINDINGS:**

#### **1. Examine Purchase Intentions and Sentiment**

While unfavourable online evaluations tend to turn off potential customers, positive reviews greatly boost consumer trust and raise the possibility of making a purchase. According to studies, customers take critical evaluations more seriously and frequently consider them as more reliable because of their critical tone. A large number of unfavourable evaluations, however, may cause buyers to completely give up on their aspirations to buy.

#### **2. The quantity and regularity of reviews**

Consumer confidence in a product is often increased by a larger number of reviews, particularly if those reviews are consistently positive. According to research, customers consider a product as more well-liked when there are a lot of evaluations, which strengthens their opinion of its quality. On the other hand, inconsistent review ratings—such as switching between extremely good and highly negative—tend to cause ambiguity and confusion.

#### **3. Credibility and Trust**

When assessing a review's level of influence, the reliability of the source is essential. Verified customer evaluations are frequently more reliable than anonymous ones, and expert reviews have a greater impact on more involved products like electronics or pricey services. Additionally, when platforms take strict precautions to identify and stop fraudulent reviews, customers are more likely to trust them.

#### **4. The Influence of Psychological Factors in Review**

Social proof and risk aversion are two psychological characteristics that affect consumers' reliance on reviews. When making high-risk purchases, consumers who are more prone to social proof frequently heed the consensus in evaluations. Reviews also act as a kind of confirmation, telling customers that their choice of product is consistent with the experiences of others.

#### **5. The Impact of Emotional Tone**

Regardless of the review's star level, evaluations with a favourable emotional tone—such as enthusiastic or heartfelt language—are frequently more convincing and

successful at increasing sales than neutral reviews. A negative review can leave a lasting impression and drastically lower the chance of a purchase, especially if it has a strong emotional tone.

## **DISCUSSIONS**

### **Review Sentiment's Function**

Online reviews' sentiment analysis reveals a significant influence on customers' decisions to buy. Customers are more likely to move forward with a purchase when they read positive evaluations because they tend to foster a sense of trust and social approval. On the other hand, unfavourable reviews frequently act as deterrents, particularly when they highlight defects in the product or subpar customer support. According to research by Chen et al. (2021) and Khuda et al. (2022), reviews' valence greatly influences customer expectations and trust, particularly in industries like e-commerce where it is impossible to physically verify things.2. Review Volume vs. Quality

Another important factor influencing consumer trust is the sheer number of internet reviews. Potential customers may find it comforting to know that a product is extensively utilised when it has a high number of reviews, even if they are mixed. However, as Ding and Pan (2022) note, a lot of bad reviews or mixed comments can cause confusion, which makes it harder for customers to make wise choices. Products with more reviews are often trusted by consumers, who associate them with more dependability, increasing the likelihood that they will be purchased.3. Reliability of Review Sources

Another significant element affecting how customers evaluate reviews is trustworthiness. In contrast to anonymous or unverified evaluations, verified consumer reviews and expert endorsements are frequently seen as more reliable. When consumers are making decisions, especially when evaluating more involved products, this trust is crucial. Consumer behaviour can be greatly influenced by the credibility of reviews, as Ding and Pan (2022) point out, particularly when platforms are open about banning fraudulent reviews.4. Social and Psychological Aspects

When analysing reviews, consumers are not always totally logical; psychological elements like perceived danger, social proof, and emotional influence are important. According to studies, customers who exhibit greater degrees of interdependent self-construal or social conformity are more likely to be swayed by the consensus or majority viewpoint presented in reviews. In areas where consumers are uncertain or where the stakes of their purchase are higher, this effect is particularly prominent. Sometimes the impact of emotionally charged negative reviews outweighs that of positive ones, leaving a lasting impression.5. Reviews' Emotional Tone

Consumer decision-making is also greatly influenced by the emotional tone of reviews. Even if a product's performance is not tremendously positive, reviews that express pleasure, joy, or passion might increase the product's appeal. For prospective customers, this emotional appeal serves as a strong motivator. Reviews with negative emotional overtones, on the other hand, may reaffirm hesitancy and scepticism.6. Feedback Cycles and Customer Conduct

A feedback loop is produced by online reviews, whereby more purchases lead to more reviews, which in turn influence subsequent purchases. According to Khuda et al. (2022), this cyclical impact highlights how reviews affect long-term brand perceptions and sales trends in addition to directly influencing consumer decisions. Companies can successfully impact this cycle, encouraging trust and participation, by actively managing their online reputation and answering reviews.



## **RECOMMENDATIONS**

### **Pay Attention to Review Volume and Regularity**

Businesses should strive to create a lot of reviews, especially when introducing new products, in order to gain the trust of customers and boost the possibility that they will make a purchase. A high volume of reviews lowers consumer uncertainty and indicates product reliability. Consistency in reviews is equally crucial, though, because large disparities between favourable and unfavourable comments might confuse readers and turn off potential customers.2. Give authenticity and verified reviews top priority. Retaining customer trust requires making sure reviews are genuine. Businesses should give priority to verified purchase evaluations in order to increase trust, as consumers are growing increasingly skilled at identifying fraudulent reviews. Online reviews can be made better overall and become a more useful tool for customers by putting strong systems in place to identify and eliminate false comments.3. Make Reviews More Emotionally Appealing Companies should support reviews that express excitement and positive emotional tones in addition to discussing the features of the product. According to research, reviews that use emotionally charged language tend to have a greater impact on customers' decisions to buy because they present a more compelling and captivating story about the product.4. Keep an eye on and address unfavourable reviews. Although they are unavoidable, negative critiques can be used as a springboard for development. In addition to reducing the negative effects of such reviews, prompt and sympathetic responses to unfavourable comments can show a brand's dedication to customer happiness. Timely resolution of issues can also demonstrate the company's commitment to enhancing its goods and services.5. Make Use of Community Involvement and Social Proof Purchase decisions can be further influenced by incorporating social proof into review platforms, such as by emphasising the evaluations that are most beneficial or that suit the preferences of the user. Furthermore, meaningfully interacting with consumers—for example, by answering reviews or providing rewards for thorough feedback—can improve the brand-audience relationship and transform inactive consumers into brand evangelists.6. Make use of sentiment analysis and AI Businesses may better understand customer feedback by integrating AI tools to analyse client sentiment. By using sentiment analysis to spot patterns in reviews, businesses may take advantage of reoccurring positive themes or proactively address new problems as they arise. Businesses can use AI to customise product development and marketing tactics depending on real-time customer impressions.7. Promote thorough evaluations and comments Companies want to urge clients to write thorough reviews that emphasise particular aspects, advantages, and experiences of their products. Comprehensive reviews add to a deeper comprehension of the product and give other prospective customers more insightful information. These evaluations frequently have greater weight than straightforward star ratings, especially when they include images or videos.

## **CONCLUSION**

Online reviews have become a crucial factor in determining consumer purchasing behaviour, and there is strong evidence that they can affect judgements about what to buy in a variety of product categories. Research identifies a number of critical elements that influence how customers perceive and respond to online reviews, including review sentiment, volume, emotional tone, and the reliability of review sources. While bad reviews can discourage potential customers if they are not handled appropriately, positive ratings greatly increase consumer trust. Although too many unfavourable or inconsistent reviews can cause confusion and hesitancy when making purchases, the quantity of reviews also significantly contributes to a product's perceived dependability.



Furthermore, psychological elements like emotional appeal and social proof increase the influence of reviews. Customers frequently use reviews to support their choices, and those that are emotionally charged are more likely to persuade readers and strengthen their bonds with the products. Verified reviews increase trust, especially when it comes to high-risk or high-involvement purchases. Therefore, companies are more likely to increase customer loyalty and boost sales results if they actively manage their online presence, maintain authenticity, and respond to unfavourable comments promptly and sympathetically. The results highlight the significance of a methodical approach to online review management, recommending that companies not only promote a large number of genuine reviews but also cultivate trust and emotional connection through open and honest procedures. In the future, sentiment analysis and AI-driven solutions can be used to significantly increase how well reviews influence customer behaviour. Future studies should examine how new technologies and cultural variations affect how reviews are interpreted as online reviews continue to change. Businesses will be in a better position to satisfy customer demands and keep a competitive edge in the digital market if they use these insights.

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## **A STUDY ON THE EVOLUTION AND BENEFITS OF INTEGRATING FIN-TECH PAYMENTS INTO HRM PAYROLL SYSTEMS**

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**Abstract:** *This research aims to explore the integration of Fin-Tech payments in HRM payroll systems having a special attention on efficiency, accuracy, employee satisfaction and cost reduction aspects. This paper employs a descriptive approach. The data used in this study are secondary data which has been collected from reputable sources. The findings of the study show that the integration of fin-tech payments in HRM payroll systems has made the process of payroll very easy and efficient for Human resource management department, also having a lot of other benefits on the part of the company as well as employees. The research provides valuable insight for HRM and Fin-Tech practitioners for continued future innovations in payroll management.*

**Key words:** *Fin-tech, HRM, Human Resource Management, Payroll process, HRM payroll system.*

### **INTRODUCTION**

In the digital age, the integration of financial technology (fin-tech) into various business operations has revolutionized traditional practices, particularly in the realm of Human Resource Management (HRM). Efficient payroll management is critical for organizations as it ensures timely and accurate compensation for employees, thereby enhancing job satisfaction and organizational performance. Fin-tech payments, a core component of fintech, are increasingly being incorporated into HRM payroll systems to improve efficiency, accuracy, and employee satisfaction. These technologies streamline payroll processes, reduce administrative burdens, and minimize errors associated with manual payroll systems. The shift towards digital payments also aligns with broader trends in digital transformation and automation, making it a timely and relevant topic for exploration. This study aims to explore the evolution and benefits of integrating fin-tech payments into HRM payroll systems. It highlights the transformative impact on efficiency, accuracy, employee satisfaction, and cost reduction. By utilizing a descriptive approach based on secondary data from reputable sources, the research provides a comprehensive overview of how fin-tech payments have revolutionized HRM payroll processes.

### **REVIEW OF LITERATURE:**

**Qudah, H., et al, (2024)** The study aimed to investigate the impact of Fin-tech solutions on HRM practices in Jordanian banks. The study employed a quantitative approach. Primary data

used in this research has been collection through online questionnaires which was distributed to 300 employees across 16 banks from which 261 completed responses were analysed. The findings reveal that there was an effective implementation in recruitment and training strategies and it was said that evaluation of performance in advance method was underutilised in Jordanian banks. It also stated that there was no significant correlation between the HRM practices and Fin-tech adoption.

**Pulyaeva, V., et al, (2019)** The study aims to outline HR management automation stages within enterprises, emphasizing the digital economy's context. It highlights a projected growth in the HR management information systems market, expected to exceed \$10 billion in annual sales within five years. Data shows that 74% of organizations prioritize automating personnel recording and administration, while 35% focus on selection and adaptation. Despite automation's benefits, psychological aspects like organizational culture and morale remain challenging to automate. Further research is needed to assess automation's impact on performance and economic efficiency.

**Odun-Ayo, I., & Aina, A.,(2020)** The paper presents a Cloud-Based Payroll Management System developed by Isaac Odun-Ayo and Adeyemi Aina from Covenant University, Nigeria. It highlights the evolution of cloud computing technologies that enhance payroll management through improved speed, accuracy, scalability, and cost reduction compared to conventional systems. The system utilizes Google App Engine for deployment, offering features like automatic scaling, load balancing, and robust security measures. The authors discuss the design of a payroll data model that accommodates various organizational regulations and policies. The paper emphasizes the advantages of cloud-based systems, including flexibility and efficiency, while addressing the limitations of traditional payroll systems that rely on local hardware. It serves as a guide for future research in sophisticated cloud-based systems.

## **METHODOLOGY**

This study aims to explore the role of fintech payments in enhancing HRM payroll systems using secondary data sources.

### **Data Collection**

Secondary data was collected from various reputable sources such as Google Scholar, ResearchGate and other sources.

### ***Data Analysis***

The collected data was analyzed using qualitative content analysis to identify key themes, patterns, and relationships between fin-tech payments and HRM payroll systems.

## **THEORETICAL FRAMEWORK**

### **Evolution and Benefits of Integrating Fin-tech Payments into HRM Payroll Systems:**

#### **Evolution:**

In a rapidly evolving technological landscape, payroll systems have undergone significant transformations, shifting from manual calculations to sophisticated automated software. Initially, payroll processing involved tedious manual entries prone to errors, posing challenges in accuracy and compliance with financial regulations. The digital revolution marked the introduction of computerized systems, streamlining calculations and record-keeping, and setting

the stage for more advanced technologies. With the advent of financial technology (fintech), payroll processes have been revolutionized. Fintech solutions automate tasks such as time tracking, wage calculations, and tax filing, reducing manual effort and minimizing errors. This automation allows HR and finance departments to focus on higher-value activities, improving overall efficiency. Fintech-enabled payroll systems also enhance the employee experience by providing timely financial support and reducing delays. Outsourcing payroll tasks to fintech solutions has further reduced errors, freeing HR and finance departments to work on strategic initiatives. As businesses grow and manage larger workforces, efficient payroll systems become critical for scalability without compromising accuracy or speed. Fintech solutions bridge the gap by adapting to the needs of growing organizations, supporting international teams, remote workers, and diverse compensation models. Furthermore, cutting-edge technologies like blockchain and artificial intelligence (AI) are reshaping payroll processes, enhancing efficiency and security. Blockchain ensures transparency and immutability in payroll transactions, while AI optimizes payroll management through predictive analytics and automated decision-making.

### **Benefits:**

The financial technology (fin-tech) sector is revolutionizing payroll management, enhancing efficiency, security, and employee satisfaction. As businesses adopt digital tools to streamline operations, integrating fin-tech into HRM payroll systems has become transformative for organizations of all sizes.

### **Streamlined Payroll Processing**

Fin-tech solutions automate repetitive tasks such as wage calculations, tax withholdings, and generating pay stubs, reducing manual effort and errors. Key benefits include:

- **Automation:** Minimizes manual involvement and administrative overhead.
- **Real-Time Payments:** Ensures timely wage distribution, beneficial for gig workers and irregular pay cycles.
- **Compliance:** Automatically updates tax rates and labor laws to stay compliant with regulations.

### **Flexible Payment Options**

Fintech provides employees with greater flexibility in receiving their pay, addressing financial stress and improving satisfaction:

- **On-Demand Pay:** Allows access to earned wages before payday.
- **Digital Wallets:** Enables convenient management of money and real-time payments through mobile apps.
- **Multi-Currency Payments:** Supports global workforces with timely payments in preferred currencies.

### **Financial Wellness and Literacy**

Fintech enhances financial wellness and literacy by offering tools and resources for effective money management:

- **Financial Planning Tools:** Help employees budget, save, and invest based on personalized advice.
- **Savings Programs:** Encourage regular saving by allocating portions of paychecks to savings or investment accounts.
- **Debt Management:** Assist in managing and repaying debt through consolidation options and personalized plans.

### **Security and Compliance**

Ensuring the security of sensitive payroll data is crucial, and fintech enhances payroll security through advanced measures:

- **Data Encryption:** Protects payroll data during transmission and storage.
- **Two-Factor Authentication:** Secures access to payroll systems with secondary identity verification.
- **Regulatory Compliance:** Ensures adherence to industry standards like GDPR and PCI DSS, avoiding penalties.

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## **SUSTAINABLE AGRICULTURAL DEVELOPMENT THROUGH DRIP METHOD OF IRRIGATION IN INDIA**

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*Abstract: Water plays a essential role in the economic development and sustainable agricultural development in India. The inadequate potential of water resources as well as the growing demand for water for multi purposes, it has become important to adopt water saving technologies (WSTs) so as to avoid the water stress in the future. One of the new methods introducing in water management is drip irrigation. Many studies revealed with the use of experimental and field survey data across different regions of India have shown that the water saving and water use efficiency of various crops cultivated under drip method of irrigation is significantly higher as compared to traditional method of irrigation. In this study is particularly focusing on the benefits of drip method irrigation, and examine how it contributes to sustainable agriculture development in India. The present study is carried out mainly using secondary data to provide overall state of development of drip method of irrigation in India. The secondary information is mainly collected from various issue published by Ministry of Agriculture and Farmers Welfare in Government of India. The results of the study imply that the progress of drip irrigation was very slow in the initial years and significant development has been made especially since 2000s. In recent year, the adoption of drip irrigation is very high in India. Looking at the percentage of drip irrigated area to the total drip irrigation area one can find that next to Andhra Pradesh (24 percent), Maharashtra (22 percent) recorded a better position compared to the states which are above the national average in the year 2017-16 to 2022-23. It is also evident from the table that among the total drip irrigated area, Andhra Pradesh (22.90 percent), Maharashtra (22.12 percent), Gujarat (13.51 percent), Karnataka (12.27 percent) and Tamil Nadu (10.84 percent), Madhya Pradesh (5.65 percent), Rajasthan (4.67 percent), Telangana (3.25 percent) accounts for relatively larger area as compared to the other states under drip method of irrigation in India during 2017-16 to 2022-23. Drip method of irrigation can bring many benefits to farmers and it also provides sustainable agricultural development. In spite of enormous benefits, the spread of drip irrigation in India is not very high as of today due to various reasons. In view of this, there is a need to restructure the extension network involving the manufactures of drip system to increase the adoption of drip method of irrigation in India.*

**Keywords:** Drip Method of Irrigation, Water Use Efficiency, Energy Saving, Productivity.

### **INTRODUCTION**

In today's world, sustainable agriculture is gaining increasing importance. Irrigation plays a crucial role for success of density plantation system. As a result, farmers and agricultural experts continually explore innovative techniques and practices to optimize crop production while minimizing environmental impact. One such a method



introducing in water management is drip irrigation. In this method, water is supplied constantly or at regular interval at the root zone of the crops through a network of pipes with the help of emitters. Primarily, it was used for cultivating vegetables in Israel and thus Israel could achieve higher productivity despite of severe water shortages. Unlike flood method of irrigation (FMI), the efficiency of water use is extremely high in DMI as it substantially reduces the evaporation, conveyance and distribution losses of water. The worldwide survey carried out by the INCID (1994) and ICID (2016) showed that the area under drip method of irrigation has increased from just 40 ha in 1960 to about 54600 has in 1975 to about 1.78 mha in 1991 and further to about 52.62 mha in 2016. Drip method of irrigation is presently adopted over 46 countries, the United States of America alone accounted for over 27 percent of the world's total drip irrigated area (ICID, 2016). Available results in this regard show that the on-farm irrigation efficiency of properly designed and managed drip irrigation system is about 90 per cent, whereas it is about 70 per cent for sprinklers but just about 40 per cent for surface irrigation method (Sivanappan, 1994; INCID, 1994; FICCI, 2016, Devika et al., 2018). Many studies conducted with the use of experimental and field survey data across different regions of India have shown that the water saving and water use efficiency of various crops cultivated under drip method of irrigation is significantly higher as compared to flood method of irrigation (Narayanamoorthy, 2004a, 2005 & 2009; Dhawan, 2002). In this article is mainly focusing on the benefits of drip irrigation, and discuss how it contributes to sustainable agriculture development in India.

## **MATERIALS AND METHODS**

Although drip method of irrigation has been practiced since mid-1980s in India, still it is considered as new method of irrigation in Indian agriculture. Rapid development has taken place in the adoption of drip method of irrigation since late 1990s due to subsidy programmes. However, not many studies are available based on secondary data especially in growth and benefits of drip irrigation in India. Most available studies are carried out either based on experimental data or on the experience of one or a few farmers adopting DMI (Narayanamoorthy, 1997a, 2005 and 2008). Therefore, the present study is carried out mainly using secondary data to provide overall state of development of drip method of irrigation in India. The secondary information is mainly collected from sources such as Drip Irrigation in India (published by the INCID, 1994), Evaluation of Drip Irrigation System (published by the Ministry of Agriculture, Government of India, 2004), National Mission on Micro Irrigation: Impact Evaluation Study (published by Ministry of Agriculture, Government of India, 2014), Accelerating Growth of Indian Agriculture: Micro Irrigation An Efficient Solution (published by FICCI, 2016), various issue of Agricultural Statistics at a Glance, Horticultural at a Glance (published by Ministry of Agricultural and Farm Welfare, 2018), Micro Irrigation at a Glance (published by PMKJY, 2023) and from various documents published by Government of Tamil Nadu, Chennai. In addition to this, information is also collected from various published and unpublished sources where necessary. Simple statistical tool were used for the data analysis. The researcher has also calculated state wise share to the area covered under drip irrigation by using the percentage method.

## **RESULTS AND DISCUSSION**

### **Historical Background in Drip Irrigation in the World**

Drip method of irrigation was developed originally as a sub-irrigation and this basic idea underlying drip irrigation can be traced to experiments in Germany in 1860. Farmers impure clay pipes with open joints about 0.8 meters below the surface of soil in an effort to combine irrigation and drainage as the water table increase and decrease during the year. The first work in drip method of irrigation in the United States was a study by house in Colorado in 1913. An important breakthrough was made in Germany in 1920 where perforated pipe drip method of irrigation was introduced. Irrigating plants through narrow openings in pipes can also be traced back to green house operations in the United Kingdom in the late 1940s. Micro irrigation technology dates back to the work of Blass (1964). Based on the observation that a large tree near a leaking faucet exhibited a more vigorous growth than other trees in the area, he developed the first patented drip/trickle irrigation system. The availability of low cost plastic pipe for water delivery lines helped to speed up the use of drip irrigation concept spread to Australia, North America and South Africa by the late 1960s and eventually all over the world. The large scale use of drip irrigation system started in 1970s in Australia, Israel, Mexico, New Zealand, South Africa and USA to irrigate vegetables, orchards and its coverage was reported as 56,000 hectares. The micro-irrigation area grew slowly but steadily and it was 0.41 mha in 1981, 1.1 mha in 1986, 1.77 mha in 1991, 3.0 mha in 2000, 6.2 mha in 2006, 8.0 mha in 2009 and reached to the extent of 53 mha in 2016 (ICID, 2017). The worldwide survey conducted by the ICID working group on micro-irrigation in 2017 reports that drip irrigation is being practised in 46 countries with the United States (13.99 mha) having the greatest land area under micro-irrigation followed by China (9.00 mha) and India (7.73 mha), as reported in Table 1.

Although micro-irrigation systems are considered the leading water saving technologies in irrigated agriculture, their adoption is still low in relation to total cropped area. At present, out of the total world irrigated area, about 2.9 percent (8 mha) is equipped with micro-irrigation. Most of the area irrigated by DMI is concentrated in Europe and America. Under irrigation, Asia has the highest area (193 million hectare, which is 69 percent of the total irrigated area), but has very low area of 1.8 million hectare (<1.0 percent) under micro-irrigation. In some countries such as Israel and Jordan, where water availability limits crop production, micro-irrigation systems irrigate about 75 percent of the total irrigated area. In India, DMI accounts for 3.54 percent of the total irrigated area which is 95.77 mha as of 2015-16.

Micro-irrigation like other irrigation methods will not fit every agricultural crop, specific site or objective. Presently, micro-irrigation has the greatest potential where (i) water and labour are expensive or scarce; (ii) water is of marginal quality viz., saline; (iii) soils are sandy, rocky or difficult to level; (iv) steep slopes and undulated topography; and (v) high value crops are produced. The principal crops under micro-irrigation are commercial field crops (sugarcane, cotton, tobacco etc), horticultural crops-fruit & orchard crops, vegetables, flowers, spices & condiments, bulb & tuber crops, plantation crops and forestry plantations. This method of irrigation continues to be important in the protected agriculture viz., greenhouses shade nets, shallow and walking tunnels etc., for production of vegetables and flowers. Besides agriculture purpose, micro-irrigation is also used for landscapes, parks, highways, commercial developments and residences.

### **Current Status and Growth of Area Covered under Drip Irrigation in India**

In India, agriculture is the predominant user of water resources. Irrigation has played a catalytic role in agricultural growth and development of the country due to its positive, direct and indirect impacts. Drip irrigation is relatively a new technique in India. The development of drip irrigation was very slow in the initial years and significant development has been made especially since 2000s. In India, the area under drip method of irrigation has increased from 0.07 mha during 1991-92 to 6.68 mha during 2022-23 (see, Table 1). The area under drip irrigation is expected to increase rapidly as the amount of water available to agriculture declines and the demands for urban and industrial use increases. Micro-irrigation is also one of the techniques that enable growers to overcome salinity problems that currently affect 6.0 mha in India. As this area increases, so too will the use of micro-irrigation to maintain crop production. In addition to this, the expectations of growers towards reduction of cost of production and enhancement of crop quality can be resolved by the improved efficiency of drip irrigation technology which may become increasingly important in the future.

**Table 1** Trends in Area under Drip Method of Irrigation in India (1991-92 to 2022-23)  
(area in million hectares)

Year	DMI	NIA	% of DMI over NIA
1991-92	0.07	49.87	0.14
2000-01	0.29	55.20	0.52
2001-02	0.31	56.94	0.55
2002-03	0.33	53.90	0.62
2003-04	0.71	57.06	1.24
2004-05	0.81	59.23	1.37
2005-06	1.06	60.84	1.74
2006-07	1.67	62.74	2.67
2007-08	2.41	63.19	3.81
2008-09	2.47	63.64	3.89
2009-10	2.57	61.94	4.05
2013-14	2.62	66.10	3.96
2014-15	2.85	68.30	4.18
2015-16	3.39	67.77	5.00
2016-17	3.91	69.22	5.65
2017-18	4.24	70.08	6.05
2018-19	4.78	72.19	6.62
2019-20	5.35	75.46	7.09
2020-21	5.96	NA	NA
2021-22	6.32	NA	NA
2022-23	6.68	NA	NA

Source: Narayanamoorthy (2009), Various Issue of Agricultural at a Glance and Land Use Statistics at a Glance (2023).

### State-wise area under drip irrigation in India

Drip irrigation is relatively a new technique in India. Initially, it was used on a limited scale in Tamil Nadu, Karnataka, Kerala and Maharashtra States, mainly for coconut, coffee, grape and vegetable production. Drip Irrigation Systems (DIS) are extremely effective in arid and drought prone areas where water is scarce. Progressive farmers started using this method of irrigation in the late-1970s without the benefit of any subsidies or support from central or state governments. However, as a result of subsequent sustained efforts by the state and central governments, agricultural universities and private sector manufacturers, the use of drip irrigation systems spread through the drought prone areas of southern and western India. The use of drip system, however, is primarily to irrigate high value which is mainly horticultural crops. In states like Maharashtra, Karnataka and Tamil Nadu, DIM is sometimes used for irrigation of vegetable and other commercial crops. The sharp rise in the area under DIM between 1988 and 1989 was to a large extent was due to the significant increase in the use of these systems in the Maharashtra State. Drip method of irrigation is most suitable for wide-spaced crops particularly in water-scarce areas, since water is supplied straight to the crop-root zone through a network of pipes and drip-emitters and therefore, water loss due to conveyance and distribution is lower than that under flood irrigation method.

**Table 2** State-wise area covered under drip method of irrigation in India (2017-18 to 2022-23)

S.No.	State	Area ('000 ha)			
		TE 2017-18 to 2019-20	%	TE 2020-21 to 2022-23	%
1	Andhra Pradesh	1152.84	24.06	1392.34	22.03
2	Arunachal Pradesh	0.61	0.01	3.63	0.06
3	Assam	0.35	0.01	4.73	0.07
4	Bihar	10.44	0.22	14.03	0.22
5	Chhattisgarh	22.38	0.47	31.47	0.50
6	Goa	1.15	0.02	1.37	0.02
7	Gujarat	639.16	13.34	862.56	13.65
8	Haryana	30.29	0.63	39.90	0.63
9	Himachal Pradesh	5.00	0.10	7.59	0.12
10	Jammu & Kashmir	0.02	0.00	7.59	0.12
11	Jharkhand	18.43	0.38	26.94	0.43
12	Karnataka	584.53	12.20	779.03	12.32
13	Kerala	23.19	0.48	24.16	0.38
14	Madhya Pradesh	290.90	6.07	336.61	5.33
15	Maharashtra	1097.91	22.92	1359.65	21.51
16	Manipur	0.31	0.01	0.36	0.01
17	Meghalaya	0.31	0.01	0.31	0.00
18	Mizoram	3.06	0.06	5.52	0.09
19	Nagaland	0.44	0.01	4.68	0.07
20	Odisha	23.53	0.49	29.30	0.46
21	Punjab	35.39	0.74	36.71	0.58

22	Rajasthan	228.88	4.78	290.22	4.59
23	Sikkim	6.04	0.13	6.67	0.11
24	Tamil Nadu	417.42	8.71	786.58	12.44
25	Telangana	154.38	3.22	207.24	3.28
26	Tripura	0.44	0.01	1.06	0.02
27	Uttar Pradesh	22.55	0.47	43.89	0.69
28	Uttarakhand	5.18	0.11	12.88	0.20
29	West Bengal	0.73	0.02	10.37	0.16
	All India	4790.87	100.00	6321.03	100.00

Source: Agricultural at a Glance (2017 to 2022).

The development of drip irrigation was very slow in the initial years and significant development has been made especially since 2000s. In recent year, the adoption of drip method of irrigation is very high in India. Table 2 presents State-wise area under drip method of irrigation in India during 2017-16 to 2022-23. Looking at the percentage of drip irrigated area to the total drip irrigation area one can find that next to Andhra Pradesh (24 percent), Maharashtra (22 percent) recorded a better position compared to the states which are above the national average in the year 2017-16 to 2022-23. It is also evident from the table that among the total drip irrigated area, Andhra Pradesh (22.90 percent), Maharashtra (22.12 percent), Gujarat (13.51 percent), Karnataka (12.27 percent) and Tamil Nadu (10.84 percent), Madhya Pradesh (5.65 percent), Rajasthan (4.67 percent), Telangana (3.25 percent) accounts for relatively larger area as compared to the other states.

## **CONCLUSION AND RECOMMENDATION**

The major aim of this study is to find out the benefits of drip irrigation, and discuss how it contributes to sustainable agriculture development in India. Many studies conducted with the use of experimental and field survey data across different regions of India have shown that the water saving and water use efficiency of various crops cultivated under drip method of irrigation is significantly higher as compared to flood method of irrigation (Narayanamoorthy, 2004a, 2005 & 2009; Dhawan, 2002). In this article is mainly focusing on current status and growth of area covered under drip irrigation in State as well as India. Most available studies are carried out either based on experimental data or on the experience of one or a few farmers adopting DMI (Narayanamoorthy, 1997a, 2005 and 2008). Therefore, the present study is carried out mainly using secondary data to provide overall state of development of drip method of irrigation in India. The secondary information is mainly collected from various issue published by Ministry of Agriculture and Farmers Welfare in Government of India. The results of the study clearly suggest that drip method of irrigation can bring many benefits to farmers and it also provide sustainable agricultural development. While reducing cost of cultivation, weed problems, soil erosion, DMI increases water use efficiency, electricity user efficiency, besides helping to reduce over-exploitation of groundwater. In spite of enormous benefits, the spread of drip irrigation in India is not very high as of today due to various reasons. In view of this, there is a need to restructure the extension network involving the manufactures of drip system to increase the adoption of drip method of irrigation.

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## **GREEN HUMAN RESOURCE MANAGEMENT**

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*Abstract: Green in this context refers to the presence to that colour in our natural environment. Therefore, being conservationist, preservationist, environmentalist, nature lover/non-polluter and maker of sustainable innovations is someone who can be called green. Green HRM refers to implementing or applying environmentally sustainable practices and alleviating the employee's commitment on issues of environmental sustainability using HRM practices like policy development, recruitment, performance Management or employee relations. Evolution of this term 'Green HRM' was brought about through in the year 1996, by Wehrmeyer in his book 'Greening People'. Where he talked about increasing sustainability through the most important resource- people. Educating them about the importance of such practices, implementing policies to bring these practices in play and also rewarding people who practice environmentally sustainable practices to encourage them and keep the practice in loop, it highlighted work attitudes, personal motivation towards jobs or the organization. Also, the relations with the colleagues are some elements which help succeed environmental management. (Mishra et al. 2014). However, in recent years the meaning has been given by other authors like Sudin in 2011, who says that there are positive effects of green capital on corporate environment and also gives competitive advantage to firms. So, two motives that it covers is considerable amount of impact on environment and that impact needs to be sustainable. Margaretha and Saragih, bend towards initiating greener practices / culture in the corporate sector to enhance efficiency, lower the costs and improve employment arrangement.*

**Keywords:** *Natural Environment, Environmental Sustainability, Environmental Management*

### **INTRODUCTION**

The Green HRM is the requirement of the 21st century as day in and day out, it is reported in the newspaper that because of the excess consumption of natural resources as a raw material by the industries and other commercial organization there is tremendous pressure on the natural resources of planet Earth. The situation is so alarming that the scientist and the environmentalist re discussing the issues of ecological imbalances. Green human resources refer to using every employee interface to promote sustainable practices and increase employee awareness and commitments on the issue of sustainability. Lee said green management to be the strategy which is adapted by an organization in order to organize the environmental management strategies for protecting and measuring environmental aspects.

The HR function will become the driver of environmental stability within the organization by aligning its practices and policies with sustainability goals reflecting an eco-focus. Green HR is the use of HRM policies to promote the sustainable use of resources within the business organizations. green initiatives within the HRM form part of wider programs of corporate social responsibility. Green HR involves undertaking environmentally friendly HR initiatives resulting in greater efficiencies, lower costs and better employee engagement and retention which in turn

help employee carbon footprints by the likes of electronic filing, car sharing, job sharing, teleconferencing and virtual interviews, recycling, telecommuting, online training, energy efficient office spaces. The responsibility of the present generations, HR managers is to create awareness amongst the youngsters and among the employees about the Green HRM, Green Movement, utilization of natural resources and helping the corporate to maintain proper environment, and retain the natural resources for our future generation.

## **IMPORTANCE OF GREEN HUMAN RESOURCE MANAGEMENT**

GHRM is important for the organizations since it contributes to various upliftment's:

1. Help companies reduce costs without losing talent.
2. Businesses have huge growth opportunities by going greener and creating a new user-friendly environment that contributes to huge operational savings by reducing carbon emissions.
3. It helps achieve job satisfaction and employee engagement, leading to greater productivity and sustainability.
4. Create a culture of concern for the well-being and health of your colleagues.
5. Improve employee retention rate.
6. Improve public image. Whenever a business adds a green initiative to their workplace, they can use the event to build positive public relations. Organizations can promote environmental stories in the media through press releases to attract the attention of potential customers and potential new sales.
7. Increase employee morale.
8. Improvement to attract better employees. One researcher found that most college graduates would be paid less if they worked in environmentally friendly organizations.
9. Reduce the company's environmental impact.
10. Improve competitiveness and increase overall performance.
11. Significantly reduce operating costs. Even small businesses can significantly reduce their operating costs by using energy efficient and less wasteful technologies.
12. Tax Benefits. With the help of local government and municipalities, the water utility and energy companies offering incentives and tax breaks, the green transition becomes easier.
13. Increase job opportunities. Some government agencies, commercial companies, and non-profit organizations require only companies that meet certain green criteria to bid on their contracts. Some also require their purchasing departments to purchase only green products or to use only products and services sold by companies that meet certain green standards.
14. Reduce environmental damage. Through training and rewards, encourage employees to find ways to reduce their use of environmentally harmful substances.

## **REQUIREMENTS FOR GREEN HUMAN RESOURCE MANAGEMENT**

In order to practice green HRM certain requirements have to be kept in mind. These are essential for these policies to succeed. The requirements are as follows:

### **Green competencies**

Where are some notable skills required by the 'green employees' to be really green. So the specific knowledge and skills required by an employee to be called green, as he/she would be aware of sustainable green growth would thus, make them perfectly competent.

### **Green Attitude**

This aspect includes 3 aspects, that is cognitive (believing), affective (feel positively) and

behavioural (taking serious action).

### **Green Behaviour**

Here behaviours are defined through the scale and the relations it surrounds. So 'Green organizational citizenship behaviour', is when an employee works efficiently in order to cause a greater good of the organization. Both financially and goodwill wise. Similarly, is the 'Green interpersonal citizenship behaviour', encourages positive actions and relations between people who together can help to better the greening capacity. Stimulating, clearing grievances and teaching them about greening and how it's beneficial to all. Lastly, 'Green official Behaviour', is the environment each work assigned by a senior it might/might not be in accordance with one's will. It might be official requirements to reduce /remove waste etc.

### **Green Results**

These are desired and positive outcomes of certain practices, innovations and efforts contributed towards greening. The ideas, solutions implemented in order to deduct waste would be a part of green innovations and the results of minimal usage of electricity while obtaining maximum results is a part of green outcomes.

## **PRACTICING GREEN HUMAN RESOURCE MANAGEMENT**

Functions would include everything from policies, procedures to practices and tasks. The right kind of input or task from the employee would make them a green 'performer' in this aspect. This practice can be done through:

**Recruitment** - Selecting candidates who are trained or have knowledge about sustainable and green ways of performing their tasks. Giving such people preference will not only bring in efficiency in the company and help the environment but also bring in better suited talent and encourage the prospective employees to attain the knowledge required, and boost morale of those chosen.

**Performance Management** - Use of managerial policies and employee tracking or increasing efficient through including e-practices to do day to day tasks.

**3. Employee relations in work place** - Structuring the alignment of employees in such a way that it focuses on the set goals, which can be done through establishing relations between professionals strategically, creating appropriate and functional alliances and lastly, building correct, required perceptions.

**Through careful building construction** - Right from the beginning, that is infrastructure construction if it's kept in mind that environmental factor will play a major role in company's functioning then, hiring an architect who can serve the required prerequisites the company asks for. This will create a sustainable office or building for efficient use of the building. Eg: having an office garden, wardrobes or desks which are multipurpose to avoid extra matter in the office and reduce costs in the long run.

**Optimizing use of resources** - More efficient and impactful use of available resources which provides well in the present as well as makes up enough for the future would help plan environmentally sustainable plans, which could be implemented if plans are done right throughout.

**Reducing use or alternating use of certain resources** - Trying to get maximum benefits out of as minimum resources as possible. Other inputs or forms of energy could be used to increase efficiency and reduce costs like- biogas, solar power, internet instead of paper. Conserving energy and recycling waste disposal. Doing tasks like e-business instead of using paper everywhere. Constricting use or eliminating, resources which manipulate environment.

### **7. Clean HR:**

1. ISO 14000 gives guidelines to soften down effects of company's functions which harm the natural resources, habitat or environment around it. Eg: using eco- friendly technology,

- complying with pollution laws, and producing eco-friendly products.
2. Paperless offices are advised to organizations where digital mediums are used in various forms, like daily documentation, E- business and E- learning. Sending mails using web instead of notices in hard form.
  3. For protective environment, wastage disposal that is, disposal of industrial and medical waste or innovating to treat that waste always helps the company, the environment and the people. Eg: knowledge about waste segregation has to give and thus implemented. Such a task will help create bio-gas through degradable waste or can be used as manure in the office garden.
  4. Using public transport, cycles or car pools to arrive to the office is an initiative taken by individuals which should be appreciated by giving reward, to encourage the individuals.
  5. Water usage should be carefully assessed, and water treatment plant can be installed to help utilize the used water again, or otherwise recycle the water any- ways.
  6. Further this can be done through HR practices like innovation and integration, building capability or increasing capacity. The technical proponent, where tech savvy steps can be taken for emerging new green changes or even strategic positioning (green human resource policies).

### **GREEN HUMAN RESOURCE MANAGEMENT IN INDIA**

An organization needs to concentrate on environmental factors too, apart from economic and social ones. The sustainability and its goals portray the importance and objective of the company and its surroundings. If these aren't followed through then not only bad for the environment but also will increase the operating cost and decrease the Goodwill. Innovations are done but GHRM is less explored and recognized/appreciated. In order to fulfill the objectives of the company required steps need to be taken. In order to do that two objectives should be identified, first, bring in functioning the existing CPSEs in India and second, identifying the existing green HR programs. Innovation and technology shouldn't be the only factors of consideration. Product, process and service. Innovation may include developing new and greening existing products, however greeting people will lead to environmentally friendly activities, involvement of individuals and initiating change for existing processes. Knowledge management, diversity training, practicing recruitment and leadership. And specific to GHRM green management, green operations, green marketing, green finance & accounting and supply chain management.

In India the DPE (Department of public Enterprise) gave and revised guidelines for sustainable practices which are taken as MoU ratings. Secondary data is collected for documentation of green initiatives -annual reports CSR and sustainability reports and HR practices to be published. (Mishra et al. 2014). There were some problems in the Indian Enterprises regarding the implementation. And some hindrances on the way-Basic problem is that even though there is emphasis on CSRs and sustainability practices but there is little or no credit and importance given to GHRM at the first place. Secondly, there was lack of top management support to encourage or support new implementation policies.

Third, integration between departments which includes mutual learning, strategic intervention and initiatives becomes entirely difficult to execute for things to work. Some sectors or enterprises choose not to disclose information (financially), like the defense sector. Lastly, attitudes towards the new attributes can cause hindrance too. (ibid). These listed obstacles call for environmental Management incorporation and establishing a formal green program in place. The public enterprises under DPE give HR offerings related to the green program. Memorandum of Understanding (MoU) ratings CPSEs like Bharat Dynamics Ltd. (BDL), National Minerals Development Corporation (NMDC), Bharat Heavy Electricals Ltd. (BHEL), Cochin Shipping yard Ltd. (CSL), Hindustan Aeronautics Ltd. (HAL), Power grid Corporation Ltd. (PGCIL), Rashtriya Ispat Nigam Ltd. (RINL) and Neyveli Lignite Corporation Ltd. (NLC) have been considered as survey sample for primary data collection as they are practicing the green movement.

There are some pointers given to follow the guidelines, like using web or teleconference to cut down business travel, which is mostly followed by all except the respective last three listed above. Uploading information online to avoid printing is followed by all except HAL & NMDC. Individual centered wellness program for fitness and nutrition is existing in only four out of the eight. Working from home hasn't been executed by any except NLC which plans to execute it. Other points are green newsletter or articles, training to understand green practices, investments should be made keeping in mind the environment and finally recruitment of people with green skills. From the above analysis, BHEL and NLC seem to be performing the best as they have implemented six and four out of eight respectively. Whereas NLC aims at implementing the rest and BHEL is unsure of the two remaining factors. (Mishra et al. 2014). Some further implementations that could be made are- Recruitment, that is according to the job (work specific) and e-recruitment. Train candidates for environment awareness like, climate change, energy available or which can be alternatively used, water diversity, level of air pollution, level of effect on ozone layer, waste management and fisheries etc. (ibid). Inclusion of gardens with natural fertilizers, rewarding employees using green ways of commuting (cycling & car pools). For example, in Infosys within the campus the people only move around on their feet or use common cycles provided, as the campus is big. Recognition for green innovations should be given, paperless office and rewards for saving electricity. Lastly, gathering and treatment of biodegradable waste is recommended. All these above-mentioned activities lower the harmful effects of industrial functioning, improve the quality of work as it gives out positive effects in return to the surroundings, cut costs, make use of available resources more fruitful and advantageous to all.

## **RESULTS OF PRACTICING GREEN HUMAN RESOURCE MANAGEMENT**

Results refer to the outcomes or affects some activities or efforts have brought about. Green results would be some outcomes which are environment friendly. It is defined to the extent of policy making by the Human resource department for this purpose, and then employee's efforts on an individual level. (Opatha et al. 2014). According to Opatha this has two dimensions- green innovations and Green Outcomes: Innovations mean new, so anything new-environmental initiatives, solutions for reducing waste or pollution reduction would all come under this head. Whereas green outcomes would be tracking the number of hours working in natural and electricity generated light. Usage of only necessary in number of electrical appliances (bulbs, fans etc.), which in turn will give minimum usage of electricity. Reduction in wastage use of previously existing inputs. And rate of achievement of environmentally specific targets. Knowledge provided to individuals through training would make them more cautious in use of resources and thus, innovations or improvement would take place. Green job analysis or recruitment brings in only talent which are skilled and environmentally aware, they would help reduce costs, make more efficient use of existing resources and further influence and encourage their peers to do the same. Discipline management is providing guidelines and rules to follow



for a certain target, environment protection here, this will bring a uniformity in working more effectively according to set goals keeping in mind the surroundings. This system can reward or punish employees who comply or disregard/violate the rules of green conduct.

## **CONCLUSION**

Understanding the concept of GHRM show important it is as human resource is the most important resource and if their functioning is diverted towards the green movement then it would make a huge impact would not only have an impact on the working environment but also on all peers, future employees and policy planning. Technology is developed or innovated to accomplish the goal of greening by the people. But 'greening People' itself would mean creating a sense of caution in every activity that they do, so will preserve, conserve and ever make sustainable friendly form of working and fixed capital. Starting right from the beginning, that is infrastructure construction or even policy building to recruiting all can be focused to be green. It'll not only help the environment but also give a perspective and structure for the Enterprise to work around. This focus driven selection of employees and their activities leads to higher job satisfaction, which in turn increases environmental performance. Rewards and compensation given for performing green tasks in accordance to company's policies or with one's own will is the greatest motivator to perform better and others to start performing. This keeps people in high spirits which increases efficiency of work and effectiveness towards the environment. Training and knowledge given raises morale as awareness leads to believing in self-capability. So, waste management, recycling, Eco friendly products etc. are all part of GHRM, which lowers cost, enforces better investment of resources (allocation and productivity), thus, the outcome is enhancement of environment, which gives the companies complying well an edge of competitive advantage over others. (Jabbar, 2015). It's seen in a good light, Goodwill rises, more aware and skilled candidates would like to join. Gives an upper hand for expansion into new products. Optimizes productivity, with little or no harm to the environment. So, it helps the environment the company and everything and one connected, both financially and morally.

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## **EVOLUTION OF HRM PRACTICES IN THE INDIAN IT SECTOR: A STRATEGIC PERSPECTIVE**

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**Abstract:** *The Indian Information Technology (IT) sector has emerged as a global hub for software development and service delivery. Human Resource Management (HRM) practices have evolved significantly over the decades to meet the dynamic demands of this knowledge-intensive industry. This paper explores the historical development, transformational trends, and contemporary strategies in HRM within the Indian IT context. It examines the shift from traditional personnel management to strategic HRM practices, influenced by globalization, digitalization, and workforce diversity. HRM has played a critical role in fostering innovation, enhancing employee satisfaction, and driving organizational agility. With the rise of remote work, talent mobility, and AI-driven processes, HRM functions have increasingly adopted data-informed and employee-centric approaches. The study also highlights emerging challenges and future directions for HR professionals in sustaining organizational competitiveness and employee engagement.*

**Keywords:** *Human Resource Management, Indian IT Sector, Strategic HRM, Workforce Diversity, Talent Management, HR Evolution*

### **1. Introduction**

The Indian IT industry has witnessed exponential growth since the 1990s, driven by a skilled workforce, cost-effective services, and favorable government policies. India's large pool of engineering talent and English-speaking professionals contributed to the country's emergence as a preferred IT outsourcing destination. During this period, companies such as Infosys, TCS, and Wipro gained prominence, setting the stage for large-scale employment generation and rapid technological advancement.

With this expansion came the need for structured HRM practices. Initially focused on basic administrative tasks, HRM evolved into a vital function managing recruitment, employee development, and organizational culture. The liberalization of the Indian economy in 1991 marked a turning point, as multinational corporations entered the market, raising the standards for workforce management and aligning HRM practices with global benchmarks. The rise of the knowledge economy further reshaped the HR landscape. In an industry where intellectual capital is the most critical resource, retaining skilled talent became a top priority. HRM strategies began focusing on employee engagement, learning and development, and leadership grooming to ensure long-term sustainability and innovation. Today, HRM in the Indian IT sector is data-driven, technology-enabled, and strategically aligned with business goals. Organizations are embracing hybrid work models, AI-powered recruitment,

and personalized employee experiences. The HR function continues to adapt to socio-economic shifts, regulatory changes, and evolving workforce expectations.

## **2. Historical Background and Phases of HRM Evolution**

### **2.1 Pre-Liberalization Era (Before 1991)**

HRM was limited to basic personnel functions such as payroll, attendance, and compliance. Employee welfare and industrial relations were dominant concerns in manufacturing but less evolved in IT.

### **2.2 Post-Liberalization and IT Boom (1991–2000)**

Economic reforms led to FDI inflow and the rise of IT giants like Infosys, TCS, and Wipro. HRM practices began incorporating structured recruitment, campus hiring, and basic training modules.

### **2.3 Global Expansion and Talent War (2000–2010)**

Demand for software exports and outsourcing surged. HR shifted focus to talent acquisition, competency mapping, and performance-based appraisals. Emergence of HRIS (Human Resource Information Systems).

### **2.4 Strategic and Digital HRM Era (2010–Present)**

Emphasis on employee engagement, agile HR, diversity and inclusion, and leadership development. Use of AI, data analytics, and cloud platforms in HR functions. Hybrid work models post-COVID-19 and mental health support initiatives.

## **3. Key HRM Practices in Today's Indian IT Sector**

### **3.1 Talent Acquisition and Onboarding**

Indian IT companies are increasingly leveraging artificial intelligence (AI) and data analytics to enhance their talent acquisition strategies. AI-powered recruitment platforms are being used to screen resumes, conduct preliminary interviews, and evaluate candidate suitability through psychometric and skill-based assessments. Campus hiring remains a dominant mode of onboarding fresh talent, while lateral hiring targets experienced professionals with niche technical expertise. Virtual onboarding has become standard practice post-pandemic, with companies designing immersive digital platforms to conduct induction programs, deliver compliance training, and facilitate cultural integration remotely.

### **3.2 Training and Development**

In the fast-evolving tech ecosystem, continuous learning is critical. Indian IT firms have adopted Learning Management Systems (LMS) and partnered with platforms like Coursera, edX, and Udemy to provide modular, self-paced learning. Companies have also established internal learning academies focused on upskilling employees in areas such as cloud computing, AI/ML, DevOps, cybersecurity, and blockchain. Leadership development, communication skills, and project management training are also emphasized to prepare employees for cross-functional and global roles. Certifications and micro-credentials have become key to career advancement within organizations.

### 3.3 Performance Management

Traditional performance appraisal systems are being replaced by more dynamic, agile models. Indian IT organizations are implementing frameworks like Objectives and Key Results (OKRs), balanced scorecards, and 360-degree feedback mechanisms to drive performance transparency and accountability. Continuous feedback culture is encouraged through regular check-ins and real-time dashboards that track individual and team performance. Advanced analytics are used to identify high performers, skill gaps, and training needs, making the performance management process more data-driven and strategic.

### 3.4 Employee Engagement and Retention

Given the high attrition rates in the IT industry, employee engagement has become a strategic HR priority. Companies are deploying initiatives such as flexible work options, wellness programs (mental and physical), innovation contests, mentorship circles, and career development planning to boost morale and loyalty. Gamification techniques and peer recognition platforms are used to encourage collaboration and reward contributions. Exit interviews and engagement surveys help organizations fine-tune their strategies and retain top talent.

### 3.5 Diversity and Inclusion

Diversity and Inclusion (D&I) has evolved into a core element of HR strategy in leading Indian IT firms. Organizations are setting measurable goals for increasing gender diversity, especially in leadership roles. Initiatives supporting LGBTQ+ rights, creating inclusive policies, and ensuring accessibility for differently-abled employees are gaining momentum. Regular sensitization workshops, inclusive leadership training, and employee resource groups are helping build a workplace culture rooted in equality and respect. Diversity is also being promoted through inclusive hiring campaigns and partnerships with NGOs and social enterprises.

## **4. Challenges and Emerging Trends**

### 4.1 Talent Shortage and Skill Mismatch

Despite a large talent pool, the Indian IT sector faces a growing gap between the skills in demand and the capabilities of the workforce. The rapid evolution of technologies such as AI, machine learning, cybersecurity, and cloud computing has outpaced traditional education and training methods. Companies are struggling to find professionals who are job-ready in these domains, resulting in a talent crunch. To address this, organizations are investing heavily in internal reskilling programs and collaborating with academic institutions to redesign curricula aligned with industry needs.

### 4.2 High Attrition Rates

One of the persistent challenges in the Indian IT industry is high employee turnover. Increased competition, abundant job opportunities, and aggressive poaching by rival firms contribute to frequent job changes. This disrupts project continuity and inflates hiring and training costs. Employers are attempting to tackle this through career progression opportunities, employee engagement programs, and stock-based incentives, but retaining top talent remains an ongoing concern, especially among the millennial and Gen Z workforce.

### 4.3 Managing Hybrid and Remote Work Models

The COVID-19 pandemic accelerated the adoption of hybrid and remote work models. While these offer flexibility and cost savings, they also pose challenges in maintaining team collaboration, communication, productivity, and company culture. HR departments are now responsible for managing distributed teams, ensuring cybersecurity compliance, and redefining workplace policies to accommodate hybrid work dynamics. Organizations are deploying virtual collaboration tools and conducting digital team-building exercises to address these issues.

#### **4.4 Mental Health and Wellbeing**

The pressure of demanding deadlines, long working hours, and the blurred boundaries between work and personal life have amplified mental health concerns. Burnout and anxiety are increasingly being reported by IT professionals. In response, companies have started prioritizing mental wellness by offering counseling services, mindfulness sessions, mental health days, and promoting a healthy work-life balance. HR is being redefined as a guardian of employee wellbeing, extending its scope beyond just operational management.

#### **4.5 Integration of Technology in HRM**

Emerging technologies like Artificial Intelligence, Machine Learning, Blockchain, and Robotic Process Automation are revolutionizing HR functions. AI-powered chatbots are handling HR queries, blockchain is being explored for secure credential verification, and predictive analytics are being used to forecast attrition and performance trends. These tools allow HR professionals to focus more on strategic and human-centric roles, but also require upskilling HR teams to leverage digital capabilities effectively.

#### **4.6 Emphasis on Employee Experience (EX)**

Companies are shifting from traditional HR models to employee experience-centric approaches. This involves designing personalized employee journeys—from hiring to exit—based on data, feedback, and empathy. Key elements include customized learning paths, flexible benefits, transparent career growth, and inclusive workplace environments. Technology, such as EX platforms and sentiment analysis tools, is being used to enhance every touchpoint of the employee lifecycle.

### **5. Case Studies of Leading Indian IT Companies**

Infosys: Leadership Institute and employee reskilling models.

#### **5.1 Tata Consultancy Services (TCS)**

TCS, one of India's largest and most recognized IT service companies, has consistently set benchmarks in HRM practices. The company operates with a strong employee-centric philosophy, encapsulated in its "Maitree" initiative, which fosters employee engagement through cultural, social, and wellness activities. TCS invests heavily in reskilling its workforce through its "Digital Learning Hub," offering personalized learning pathways to over 500,000 employees. Its performance management system emphasizes continuous feedback and potential-based career progression. TCS's efforts in diversity and inclusion are also noteworthy, with programs supporting women leadership, differently-abled individuals, and inclusive hiring.

#### **5.2 Infosys**

Infosys has established a reputation for structured HR policies and a strong learning culture. Through its Global Education Center in Mysuru—one of the largest corporate training centers in the world—Infosys delivers intensive technical and soft skills training to new hires. Infosys has adopted the "iCount" system to promote a culture of performance ownership and real-time feedback. The company has also made significant investments in digital HR tools, including AI-based recruitment and learning analytics. Initiatives like "Restart with Infosys" support second-career opportunities for women, showcasing its inclusive and progressive HR vision.

### 5.3 Wipro

Wipro has pioneered several strategic HR initiatives aimed at future-proofing its workforce. The “TalentNext” program focuses on training faculty and students in emerging technologies in collaboration with academic institutions. Wipro’s “Live Workspace” initiative reimagines work environments to enhance collaboration in hybrid work settings. The company uses predictive analytics to identify flight risks and customize retention strategies. Wipro’s diversity charter includes gender-neutral policies, LGBTQ+ inclusion, and a robust Supplier Diversity Program to support inclusive growth. Its internal mobility platform encourages employees to explore cross-functional roles, fostering skill versatility and retention.

### 5.4 HCL Technologies

HCL follows the “Employee First, Customer Second” philosophy, making it one of the most employee-driven organizations in the IT space. Its “Ideapreneurship” culture empowers employees to ideate and drive innovation independently. The company emphasizes internal talent growth through platforms like CareerConnect, which offers visibility into available roles across geographies and functions. HCL’s HR digital transformation includes using chatbots for query resolution and mobile apps for performance reviews and feedback. Additionally, the company has launched wellness programs focused on mental health, fitness challenges, and digital detox campaigns to support holistic employee wellbeing.

### 5.5 Tech Mahindra

Tech Mahindra emphasizes a future-ready workforce through its “Upskilling@Scale” initiative, which aims to certify thousands of employees in next-gen technologies. The company has also implemented gamified learning through internal platforms to make reskilling engaging and effective. Its “Wellness before Business” initiative demonstrates commitment to employee wellbeing with mental health helplines, yoga sessions, and digital wellness challenges. Tech Mahindra promotes gender diversity with its “Wings” program and collaborates with external partners for return-to-work opportunities for women on career breaks. Its HRM strategy blends innovation, empathy, and technology to drive organizational agility.

## 6. Conclusion

This transformation has been significantly influenced by rapid technological advancements and the globalization of the Indian IT industry. With increased reliance on automation, artificial intelligence, and data analytics, HR professionals are now leveraging technology to enhance talent acquisition, performance management, employee engagement, and workforce planning. The digitalization of HR functions has not only improved operational efficiency but also enabled real-time decision-making, allowing HR to play a proactive role in business strategy and innovation.

At the same time, the shift towards a people-first culture has underscored the importance of employee well-being, diversity, inclusion, and continuous learning. Indian IT companies are investing in creating flexible work environments, promoting mental health initiatives, and nurturing leadership from within. As organizations become more diverse and distributed, HR must also ensure cultural sensitivity, fairness, and inclusivity. In this evolving context, ethical and sustainable HR practices will serve as a foundation for building trust, loyalty, and long-term organizational success.

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## **. ENCOURAGING FAIR LABOUR PRACTICES, COMMUNITY DEVELOPMENT AND EMPLOYEE WELFARE**

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*Abstract: Fair labour practices, community development, and employment welfare are crucial pillars for achieving sustainable socio-economic growth. These interlinked concepts foster equity, dignity, and inclusivity within workplaces and the broader community. Fair labour practices ensure equitable pay, safe working conditions, and the prevention of exploitative practices, empowering workers to achieve their full potential. By aligning these practices with community development initiatives, organisations and governments can create employment opportunities, strengthen local economies, and improve access to education, healthcare, and essential services.*

**Keywords:** *sustainable socio-economic growth, local economies, healthcare, and essential services.*

### **Objectives of the study:**

1. **Ensure Equality and Non-Discrimination:** Promote workplace equality, ensuring fair treatment of all employees irrespective of gender, race, or religion.
2. **Uphold Labour Rights:** Advocate for the right to fair wages, safe working conditions, and the ability to organize and form unions.
3. **Enhance Quality of Life:** Focus on improving access to healthcare, education, and basic infrastructure.
4. **Promote Economic Development:** Create opportunities for entrepreneurship, skills training, and employment generation.
5. **Improve Employee Well-being:** Provide facilities such as healthcare, housing, and childcare for employees and their families.
6. **Enhance Job Security:** Develop policies to ensure stable and long-term employment opportunities.

### **Encouraging Fair Labour Practices**

Fair labour practices are essential for fostering a just and equitable society. These practices ensure that workers are treated with dignity, fairness, and respect, and contribute to sustainable economic growth. Here are key ways to encourage and implement fair labour practices:

#### **1. Awareness and Education**

- **Workers' Rights:** Educate employees about their rights under labour laws and workplace policies.

- **Employer Responsibilities:** Train employers and management teams on ethical labour standards and compliance.

## **2. Compliance with Labour Laws**

- **Minimum Wages:** Ensure payment of fair and adequate wages as per legal standards.
- **Working Hours:** Adhere to regulated working hours and provide adequate rest periods.
- **Safety Standards:** Implement workplace safety measures to protect employees from hazards.

## **3. Promoting Diversity and Inclusion**

- Prohibit discrimination based on gender, age, race, or religion.
- Encourage equal opportunities for all employees, including those from marginalized communities.

## **4. Ensuring Workers' Welfare**

- Provide essential benefits like health insurance, maternity leave, and retirement plans.
- Set up grievance redressal mechanisms to address employee concerns promptly.

## **5. Transparency and Accountability**

- Maintain open communication regarding company policies and practices.
- Regular audits to ensure adherence to ethical labour practices.

## **6. Empowering Unions and Worker Representation**

- Allow employees to form unions and engage in collective bargaining.
- Encourage dialogue between management and employee representatives.

## **7. Supply Chain Responsibility**

- Partner with suppliers and contractors who uphold fair labour standards.
- Monitor supply chains to prevent exploitation or forced labour.

## **8. Recognition and Reward**

- Acknowledge employees' contributions through fair promotions, incentives, and appraisals.
- Encourage a culture of appreciation and respect.

Encouraging fair labour practices is not just a legal or ethical requirement; it is also a foundation for building a productive, motivated, and loyal workforce. Companies that invest in fair labour practices often enjoy a better reputation, improved employee morale, and long-term success.

## **Rights of Fair Labour practices**

These include right to work of one's choice, right against discrimination, prohibition of child labour, just and humane conditions of work, social security, protection of wages, redress of grievances, right to organize and form trade unions, collective bargaining and participation in management.

- **Freedom from discrimination:** Workers have the right to be treated equally and not discriminated against in the workplace
- **Safe and healthy working conditions:** Workers have the right to work in a safe and healthy environment
- **Fair pay:** Workers have the right to receive fair wages for the work they do
- **Equal opportunities:** Workers have the right to equal opportunities for advancement, regardless of their background
- **Freedom of association:** Workers have the right to form and join trade unions and participate in collective bargaining
- **Limited working hours:** Workers have the right to reasonable working hours, rest periods, and paid leave

- **Protection from child labor:** Workers have the right to be protected from child labor
- **Protection of wages:** Workers have the right to be protected from wage theft and garnishment Fair labor practices are important for creating an inclusive workplace culture and addressing systemic inequities. Organizations that promote fair labor practices
- **International Labour Organization (ILO):** Develops international labor standards that set out basic principles and rights at work

#### **Encouraging Community Development**

Community development is a crucial element for building a thriving and harmonious society. It involves empowering individuals, fostering collective action, and creating sustainable opportunities that benefit everyone. Encouraging community development can be achieved through the following means:

1. **Education and Awareness:**  
Educating communities about their rights, resources, and opportunities helps build informed individuals who can contribute effectively to collective growth.
2. **Skill Development:**  
Providing training programs to enhance skills in areas like entrepreneurship, technology, agriculture, or handicrafts can uplift the economic standards of the community.
3. **Inclusive Participation:**  
Encouraging diverse groups—youth, women, senior citizens, and differently-abled individuals—to participate in decision-making fosters equality and inclusivity.
4. **Local Leadership:**  
Promoting leadership within the community ensures that development initiatives are tailored to local needs and have a greater chance of success.
5. **Resource Mobilisation:**  
Encouraging the use of local resources effectively, while seeking partnerships with NGOs, governments, and businesses, can bring in much-needed funding and expertise.
6. **Environmental Sustainability:**  
Promoting practices like waste management, tree planting, and water conservation ensures that development does not come at the cost of environmental degradation.
7. **Health and Wellness Programs:**  
Access to healthcare services, mental health awareness, and nutrition programs improves the overall quality of life in a community.
8. **Community Spaces and Events:**  
Establishing community centres, libraries, or organizing cultural and recreational events strengthens the bond among members and builds a sense of belonging.  
By focusing on these areas, communities can become self-reliant, resilient, and dynamic, paving the way for a brighter collective future.

#### **Process of Community Development**

Community development is a systematic process that focuses on empowering individuals and groups to work collectively toward improving the quality of life and well-being in their community. The process involves the following key steps:

##### **1. Assessment of Community Needs**

- **Objective:** Understand the community's current state, identify its strengths, challenges, and resources.
- **Activities:**
  - Conduct surveys, focus group discussions, and interviews.

- Use tools like community mapping or SWOT analysis.
- **Outcome:** A clear understanding of the community's needs and aspirations.
- 2. Engagement and Participation
- **Objective:** Actively involve community members in the process to ensure inclusiveness and ownership.
- **Activities:**
  - Organize meetings and workshops to gather diverse perspectives.
  - Create platforms for dialogue and collaboration.
- **Outcome:** A shared vision and active participation of stakeholders.
- 3. Planning and Goal Setting
- **Objective:** Develop a strategic plan that outlines actionable steps to address identified issues.
- **Activities:**
  - Set specific, measurable, achievable, relevant, and time-bound (SMART) goals.
  - Formulate policies or programs aligned with community needs.
- **Outcome:** A detailed roadmap for achieving community objectives.
- 4. Resource Mobilization
- **Objective:** Gather the financial, human, and material resources needed to implement plans.
- **Activities:**
  - Identify internal and external resources (e.g., funding, volunteers, expertise).
  - Build partnerships with NGOs, government agencies, and private sector organizations.
- **Outcome:** Sufficient resources to execute planned activities.
- 5. Implementation
- **Objective:** Execute the planned activities and projects to bring about tangible improvements.
- **Activities:**
  - Assign roles and responsibilities to community members and stakeholders.
  - Monitor progress regularly and address challenges.
- **Outcome:** Visible progress in community development projects.
- 6. Capacity Building
- **Objective:** Enhance the skills and knowledge of community members to sustain progress.
- **Activities:**
  - Conduct training programs, workshops, and awareness campaigns.
  - Build leadership skills within the community.
- **Outcome:** A self-reliant and empowered community.
- 7. Monitoring and Evaluation
- **Objective:** Assess the effectiveness of the initiatives and measure progress against set goals.
- **Activities:**
  - Use indicators to track outcomes and gather feedback from stakeholders.
  - Identify successes and areas for improvement.
- **Outcome:** A comprehensive understanding of what works and what needs adjustment.
- 8. Sustainability and Follow-Up
- **Objective:** Ensure the long-term success of development efforts.
- **Activities:**
  - Establish mechanisms for ongoing community engagement and problem-solving.
  - Develop strategies to maintain infrastructure and programs.

- **Outcome:** Continuous growth and improvement in the community.

#### **Encouraging Employee Welfare: Key Strategies and Benefits**

Employment welfare is an essential aspect of sustainable development, focusing on enhancing the quality of life and well-being of employees while fostering a productive work environment. Encouraging employment welfare can be achieved through the following strategies:

##### **Fair Wages and Benefits**

Ensure employees receive competitive and fair wages aligned with industry standards.

Provide benefits such as health insurance, retirement plans, and paid leave.

##### **Safe and Healthy Work Environment**

Maintain workplace safety by adhering to health and safety regulations.

Promote wellness programs focusing on physical and mental health.

##### **Training and Development**

Offer regular skill development programs to enhance employees' expertise.

Provide access to education subsidies and career growth opportunities.

##### **Work-Life Balance**

Implement flexible working hours or remote work options.

Encourage regular breaks and time off to avoid burnout.

##### **Employee Engagement**

Foster an inclusive environment where employees feel heard and valued.

Conduct regular surveys and feedback sessions to improve workplace satisfaction.

##### **Equality and Non-Discrimination**

Promote a culture of diversity and inclusion.

Enforce strict policies against workplace discrimination and harassment.

##### **Social Security and Support**

Provide financial support during emergencies or layoffs.

Establish employee assistance programs for personal and professional challenges.

#### **Benefits of Encouraging Employee Welfare**

**Increased Productivity:** A satisfied and motivated workforce contributes to higher efficiency and innovation.

**Lower Turnover:** Welfare initiatives reduce employee attrition by enhancing job satisfaction.

**Enhanced Reputation:** Companies prioritizing welfare attract better talent and improve their public image.

**Legal Compliance:** Following welfare measures ensures adherence to labor laws and avoids legal complications. By prioritizing employment welfare, organizations not only create a positive work culture but also contribute to the overall growth and sustainability of their business.

#### **Conclusion**

Encouraging fair labour practices, community development, and employment welfare is essential for fostering a just, inclusive, and sustainable society. Fair labour practices ensure that workers are treated with dignity, equity, and respect, creating a positive and productive work environment. Community development initiatives empower individuals and localities, driving social cohesion, economic growth, and enhanced quality of life. Employment welfare measures, such as social security, skill development, and accessible benefits, contribute to the overall well-being of workers and their families. By prioritising these elements, organisations, governments, and communities can collectively build a foundation for long-term societal progress, economic resilience, and human development. Sustainable growth is best achieved when fairness, inclusivity, and welfare are deeply ingrained in policies and practices, promoting shared prosperity for all.

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## **BITCOIN TECHNOLOGY & UNDERSTANDING OF E-COMMERCE**

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*Abstract: The purpose of this research is to identify the development of e-commerce technology in the business world, and the benefits of the application of e-commerce in the online business. The method used in this research was the descriptive method to present a complete overview of the situation related to some variable situations examined. The result of this research is to give clear identification of how far the development of e-commerce technology in the world of online business, as well as the benefits provided by the application of e-commerce in the world of online business. The immutability of blockchain technology also allows for a clear and traceable record of transactions, minimizing the possibility of disputes and enhancing consumer trust in the ecommerce industry. In the end, bitcoin gives mutual connection to expand the business of E-commerce.*

*Keywords: Bitcoin, E-commerce, Business Technology, Cryptocurrency, Transaction*

### **1. INTRODUCTION**

The influence of Bitcoin on e-commerce use of bitcoin as a payment method that is safer, faster, easier and minimal costs can be supported by e-commerce. Because with these things more helpful for consumers in the transaction. The use of Bitcoin that allows consumers to buy without having to worry about paying the payment. This uses you to do business efficiently. Bitcoin is a different currency that does not have significant and open bitcoin. Bitcoin is open-source and peer-to-peer. A study explains that open source means the currency that can be developed by emissions that want it [1].

While Peer-to-peer is a place to transaction on a computer network directly, unlike banks or sellers like other existing payments [1]. Bitcoin is a peer-to-peer based electronic cash system that does not make use of central authority [2]. In the Bitcoin network, each node represents one of potentially many public keys belonging to Bitcoin users and communicates directly with each other node [2]. Bitcoin system is based on cryptocurrency, and the technology used is a peer-to-peer network and cryptography is used to maintain data security [3]. Bitcoins are owned by Bitcoin addresses, which are public keys from a keypair [3]. In order to assign Bitcoins, or some fraction thereof, to a new owner, the current owner must sign the transaction with the private key of the keypair [4]. One of the basic concepts in the bitcoin mining is to be done in examining all transactions monometer which in turn creates bitcoin as a present [5]. Bitcoin has a way of working by sending an address. They will give a unique address to receive and store one-time payments from other senders, rather than using one static address as we do with a bank account [6]. Otherwise, the public can infer how much money each address and how the owners spent

to see the history of the public. With this decentralization, users can register their users, and do it themselves. Fleishman explains even users do not need to give any names [7]. It also does not provide specific names that are needed. One day the user wants a new identity, people can immediately make it, and as many as the user wants [7]. Randel explains that create a new identity, using it only temporarily, if completed, then do not use it anymore [8]. According of one research, it says that customers who tend to curate trust the new payment method that is done online and this is because they believe that they face the risk of fraud/theft, hacking, password theft [9-11]. This study aims to determine how much influence the use of bitcoin for e-commerce. The method used is a case study research method that aims to describe and understand what is being inspected and examine how this can happen.

## **2. METHOD**

The method used was a case study research method that aimed to describe and understand what was being inspected and examine how this can happen. So it could analyse how big the influence of Bitcoin technology in e-commerce.

## **3. Results and Discussion**

Existing technology is emerging and creating an e-commerce sector that has had an impact. The use of bitcoin is done with users from official bitcoin sites. After that, the user must wait to block everyone who can be downloaded. All transactions carried out will be stored in the network block. This bitcoin wallet will later make money that can be spent and also for transactions that are allowed by the user. This is one form of bitcoin that can be issued by the user can be seen this is in Figure 1 of the bitcoin wallet.

Bitcoin is based on public-key cryptography where each transaction is referenced by two keys: a public key that encrypts incoming payments and the private key that decrypts them. These keys are represented by large numbers to establish secure encryption of a rough guess. Although it is possible to use the same account (public key) for all incoming and outgoing transactions, people who want anonymity will generate a unique public key for each transaction.

They will give a unique address to receive and store one-time payments from other senders, rather than using one static address as we do with a bank account. Otherwise, the public can infer how much money each address and how the owners spent to see the history of the public. The public key acts as an actor in the system. The public key can be used to provide a statement by affixing the signature of the owner on it. As in the picture above can be seen that the public key that is owned by the user can be used as this security. Security makes bitcoin system is safe in its use as a medium of payment. In Figure 2 below is the flow of the process of running bitcoin from beginning to end.



Figure 1. Bitcoin wallet

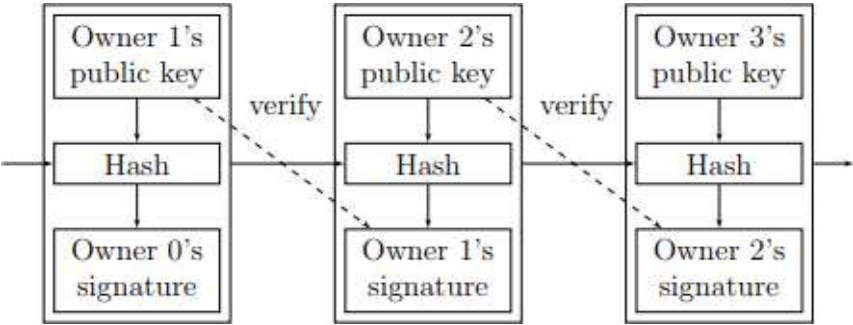


Figure 2.Bitcoin Transaction Chain

Moreover, the payment method using bitcoin is much faster than the payment transfer system because when making a payment system via bank transfer or through a third party the bank will do it. According to a study conducted in Indonesia, using the theory of planned (behaviour TPB) to determine one's intention to do something - trade transactions gave the attitudes, subjective norms and behavioural control are known. Bitcoin transaction system itself is the key exchange and the user's address when the transaction sender and receiver must give the keys first and the address for the exchange of transaction processing if there is no exchange first the transaction will not proceed. With the key exchange system and address on the transaction to give users a sense of security when they want to conduct bitcoin transactions. So with this security, the transaction on bitcoin lies in the key and address of the bitcoin.

By exchanging the valid key and the validity of which has been done between the sender and recipient of the transaction goes well. In Figure 3 below is the flow of the transaction process that occurs in bitcoin from the beginning to the end.



**Figure 3. Transfer Payment**

In the picture above is a presentation of the payment cycle carried out by payment method by transfer or through a third party. From the picture above can be seen that in order to make a purchase or ordering a product, only buyer must through long process. This is not to mention including the length of time the bank needs to verify the transaction process, because in some banks this cannot be done at that time. This means that it less effective and efficient, which means making e-commerce web takes more time to validate the payment process that enters the web. Of course, with a very long path, it is very time- consuming. Also, the seller has yet will perform the process of packaging products to the web validate payment process because this is quite risky for the seller where the buyer may cancel the purchase after product delivered. sometimes this is what makes a consumer reluctant to make the purchase process online.

With this decentralisation, users can register their users, and do it themselves. Even users do not need to give any names. It also does not provide specific names that are needed. If one day the user wants a new identity, you can immediately make it, and as many as the user wants. If the user wants an anonymous identity for a new user, the user can do it. Create a new identity, using it only temporarily, if completed, then do not use it anymore. According of one research, they say that customers who tend to curate trust the new payment method that is done online and this is because they believe that they face the risk of fraud/theft, hacking, password theft [9].

While it still a payment method that is most popular in Indonesia, bank account transfer has several challenges, including security issues - the seller's account is displayed on the Internet can be abused, making it difficult for buyers - consumers will have to confirm the payment, human error as possible - the seller should check the manual for transfer, confirmation, and the nominal transfer and delayed delivery of products process - confirmation of payment from the seller is mostly only done on weekdays. Method of payment by transferring money between banks to process until funds are available in the recipient's account. There is still another process of sending these funds from two different banks, which can take longer. This could hamper the business process by way of payment, bitcoin payments can be completed at that time without the need for a long time.

#### 4. CONCLUSION

Bitcoin is also a separate currency that can be used safely. Although there is no need to fear there is more funding due to third party financing or banks. The use of this bitcoin payment method also makes it easy for transactions with different locations and currencies. This also allows users or less-demanded customers to use this payment method. because they believe that they face the risk of fraud/theft, hacking, password theft. Because users or buyers frequently

purchase cancellations because in a sense the payment process for too long so that the items in the message in a much longer time. It can be concluded that bitcoin has a considerable influence on business development and business expansion which of course has an impact on the e-commerce sector.

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## ARTIFICIAL INTELLIGENCE AND USING MARKETING AUTOMATION

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*Abstract: Feature engineering is the process of selecting, manipulating, and transforming raw data into features that can be used in supervised learning. In order to make machine learning work well on new tasks, it might be necessary to design and train better features. As you may know, a “feature” is any measurable input that can be used in a predictive model — it could be the color of an object or the sound of someone’s voice. Feature engineering, in simple terms, is the act of converting raw observations into desired features using statistical or machine learning approaches. In this paper, uses of cropped images and apply wavelet transform to extract meaning features that can help with image identification. We can use concepts like time vs frequency domain, fourier transform, representing images as frequency etc. Using wavelet transform and a raw pixel image we will create our X and use class labels as Y. These X and Y will be used for model training.*

**Keywords:** Image recognition, Use case diagram, Activity diagram, ML,SVM etc.,

### INTRODUCTION:

Python is designed to be highly readable. Machine learning (ML) is a type of artificial intelligence (AI) that allows software applications to become more accurate at predicting outcomes without being explicitly programmed to do so. Machine learning algorithms use historical data as input to predict new output values. Image recognition is the ability of a computer powered camera to identify and detect objects or features in a digital image or video. It is a method for capturing, processing, examining, and sympathizing images. To identify and detect images, computers use machine vision technology that is powered by an artificial intelligence system. Image classification is the process of categorizing and label groups of pixels or vectors within an image based on specific rules. Although this is usually not a very difficult task for humans, but it has proved an extremely difficult problem for machines. Major resources of difficulty include variable and sometimes uncontrolled imaging conditions, hard-to-describe and complex angles in an image. We used SVM in our project. Support Vector Machine (SVM) is a supervised machine learning algorithm used for both classification and regression. Though we say regression problems as well its best suited for classification. The objective of SVM algorithm is to find a hyperplane in an N-dimensional space that distinctly classifies the data points. Support Vector Machine or SVM is one of the most popular Supervised Learning algorithms, which is used for Classification as well as Regression problems. However,



primarily, it is used for Classification problems in Machine Learning. The goal of the SVM algorithm is to create the best line or decision boundary that can segregate n-dimensional space into classes so that we can easily put the new data point in the correct category in the future. This best decision boundary is called a hyperplane. SVM chooses the extreme points/vectors that help in creating the hyperplane. These extreme cases are called as support vectors, and hence algorithm is termed as Support Vector Machine. A Confusion matrix is an  $N \times N$  matrix used for evaluating the performance of a classification model, where  $N$  is the number of target classes. The matrix compares the actual target values with those predicted by the machine learning model. This gives us a holistic view of how well our classification model is performing and what kinds of errors it is making.

### EXISTING SYSTEM

The traditional face detection method relies mainly on the structural features of the face and the color characteristics of the face. Some traditional face recognition algorithms identify facial features by extracting landmarks, or features, from an image of the subject's face. An algorithm may analyze the relative position, size, and/or shape of the eyes, nose, cheekbones, and jaw. These features are then used to search for other images with matching features. These kinds of algorithms can be complicated, require lots of compute power, hence could be slow in performance. And they can also be inaccurate when the faces show clear emotional expressions, since the size and position of the landmarks can be altered significantly in such circumstance.

### PROPOSED SYSTEM

Now we propose a new method called as Integrated Support Vector Machine algorithm (ISVMA) it may analyse the relative position, size, and/or shape of the eyes, nose, cheekbones, and jaw. This algorithm solve both classification and regression problem. Compare to decision tree algorithm support vector machine algorithm produces more accurate results.

### DATA PRE-PROCESSING

Data preprocessing is a step in the data mining and data analysis process that takes raw data and transforms it into a format that can be understood and analyzed by computers and machine learning.

Raw, real-world data in the form of text, images, video, etc., is messy. Not only may it contain errors and inconsistencies, but it is often incomplete, and doesn't have a regular, uniform design. Machines like to process nice and tidy information – they read data as 1s and 0s. So calculating structured data, like whole numbers and percentages is easy. However, unstructured data, in the form of text and images must first be cleaned and formatted before analysis.

Data pre-processing in our project is divided into two categories,

Data Collection

Data Cleaning

#### **Data Collection:**

Manually download images from google images (Or) Use python and web scrapping to automate downloading images from google

#### **Data Cleaning:**

We have to clean images that we downloaded from google or the images we took in a way that

it is suitable to train our classifier. We identify a person in a photo with a face. Hence, we will use OpenCV and a technique called haar cascades to detect if a face and two eyes are clearly visible or not. If they are then we keep the image otherwise we discard the image.

## **TRAINING A MODEL**

The process of training an ML model involves providing an ML algorithm (that is, the learning algorithm) with training data to learn from. The term ML model refers to the model artifact that is created by the training process. The training data must contain the correct answer, which is known as a target or target attribute. The learning algorithm finds patterns in the training data that map the input data attributes to the target (the answer that you want to predict), and it outputs an ML model that captures these patterns. In our project, Once we have X and Y after applying feature engineering techniques, we can now create simple SVM model to get a feel of how it is going to perform on image classification. We will then use Research and try different models with different hyper parameters to come up with a best model that can give us maximum accuracy. We will use sklearn classification report to check the performance. Once we select best model based on GridSearchCV we can evaluate it on X\_test and Y\_test to get a feel of how it is going to perform in production. Confusion matrix is used with seaborn visualization to get an understanding of classification errors for each of the classes. In the end we export the model to a file using joblib.

## **USE CASE DIAGRAM**

A use case diagram in the Unified Modelling Language (UML) is a type of behavioural diagram defined by and created from a Use-case analysis. Its purpose is to present a graphical overview of the functionality provided by a system in terms of actors, their goals (represented as use cases), and any dependencies between those use cases. The main purpose of a use case diagram is to show what system functions are performed for which actor. Roles of the actors in the system can be depicted. While a use case itself might drill into a lot of detail about every possibility, a use-case diagram can help provide a higher- level view of the system.

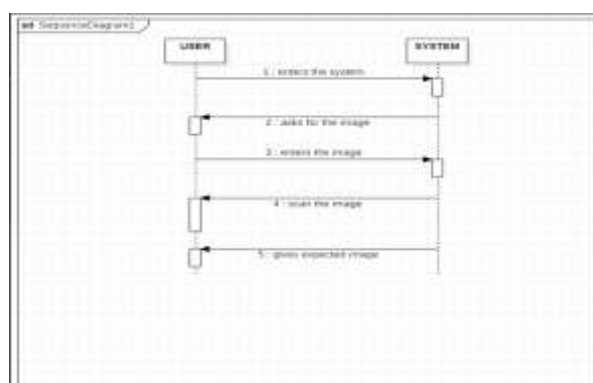
The drawings attempt to mimic the real world and provide a view for the stakeholder to understand how the system is going to be designed. Siau and Lee conducted research to determine if there was a valid situation for use case diagrams at all or if they were unnecessary. What was found was that the use case. Diagrams conveyed the intent of the system in a more simplified manner to stakeholders and that they were "interpreted more completely than class diagrams". The purpose of use case diagram is to capture the dynamic aspect of a system. Additional diagrams and documentation can be used to provide a complete functional and technical view of the system. They provide the simplified and graphical representation of what the system must actually do.



**Figure 4.1: Use Case diagram for the proposed work**

## PROPOSED WORK

A sequence diagram shows object interactions arranged in time sequence. It depicts the objects involved in the scenario and the sequence of messages exchanged between the objects needed to carry out the functionality of the scenario. Sequence diagrams are typically associated with use case realizations in the Logical View of the system under development. Sequence diagrams are sometimes called event diagrams or event scenarios. Messages, written with horizontal arrows with the message name written above them, display interaction. Solid arrow heads represent synchronous calls, open arrow heads represent asynchronous messages, and dashed lines represent reply messages. If a caller sends a synchronous message, it must wait until the message is done, such as invoking a subroutine. If a caller sends an asynchronous message, it can continue processing and doesn't have to wait for a response. Asynchronous calls are present in multithreaded applications, event-driven applications and in message-oriented middleware. Activation boxes, or method-call boxes, are opaque rectangles drawn on top of lifelines to represent that processes are being performed in response to the message (Execution Specifications in UML).



**Figure 4.2: Sequence diagram for the proposed work**

## ACTIVITY DIAGRAM

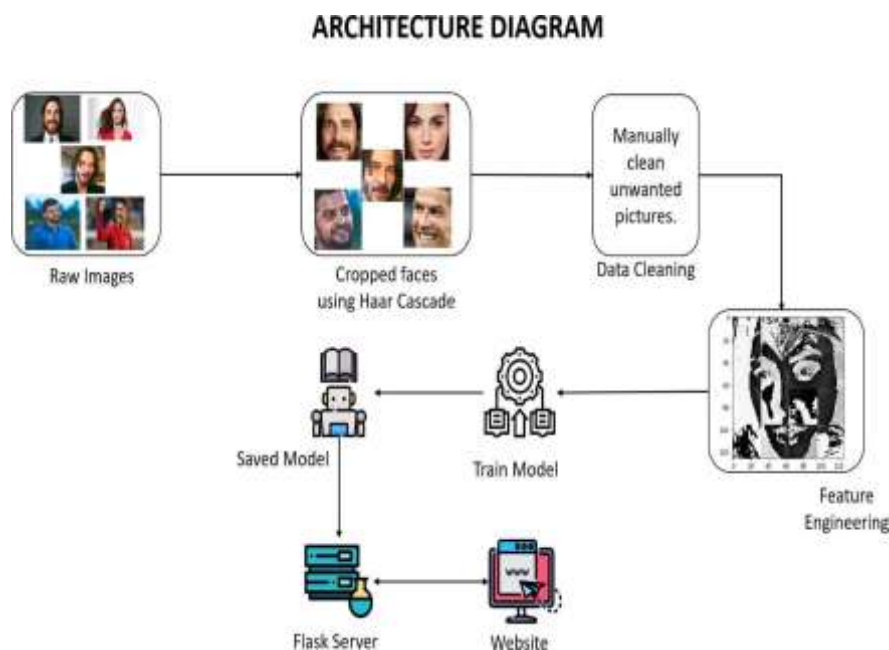
Activity diagram is another important diagram in UML to describe the dynamic aspects of the

system. Activity diagram is basically a flowchart to represent the flow from one activity to another activity. The activity can be described as an operation of the system. The control flow is drawn from one operation to another. This flow can be sequential, branched, or concurrent. Activity diagrams deal with all type of flow control by using different elements such as fork, join, etc.,

Activity diagrams are mainly used as a flowchart that consists of activities performed by the system. Activity diagrams are not exactly flowcharts as they have some additional capabilities. These additional capabilities include branching, parallel flow, swimlane, etc. Before drawing an activity diagram, we must have a clear understanding about the elements used in activity diagram. The main element of an activity diagram is the activity itself. An activity is a function performed by the system. After identifying the activities, we need to understand how they are associated with constraints and conditions. Before drawing an activity diagram, we should identify the following elements

### **ARCHITECTURE DIAGRAM**

An "architecture" can be defined as an abstract description of entities in a system and the relationships between them. It involves a series of decision-making processes. The architecture is a structure and a vision. A "system architecture" is the embodiment of concepts and the distribution of the correspondences between the functions of things or information and formal elements. It defines the relationships among elements as well as between elements and the surrounding environment.



**Figure 4.5: Architecture diagram for the proposed work**

### **IMAGE RECOGNITION**

Image recognition is the ability of a computer powered camera to identify and detect objects or features in a digital image or video. It is a method for capturing, processing, examining, and sympathizing images. To identify and detect images, computers use machine vision technology

that is powered by an artificial intelligence system. So there are different “tasks” that image recognition can perform:

**Classification.** It is the identification of the “class”, i.e. the category to which an image belongs. An image can have only one class.

**Tagging.** It is also a classification task but with a higher degree of accuracy. It can recognize the presence of several concepts or objects within an image. One or more tags can therefore be assigned to a particular image.

**Detection.** This is necessary when you want to locate an object in an image. Once the object is located, a bounding box is placed around the object in question.

**Segmentation.** This is also a detection task. Segmentation can locate an element on an image to the nearest pixel. For some cases, it is necessary to be extremely precise, as for the development of autonomous cars.

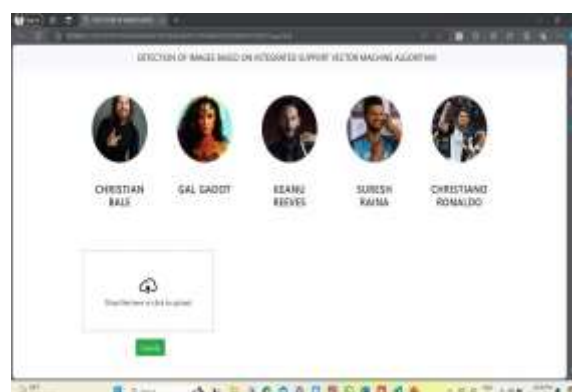
### **CONFUSION MATRIX**

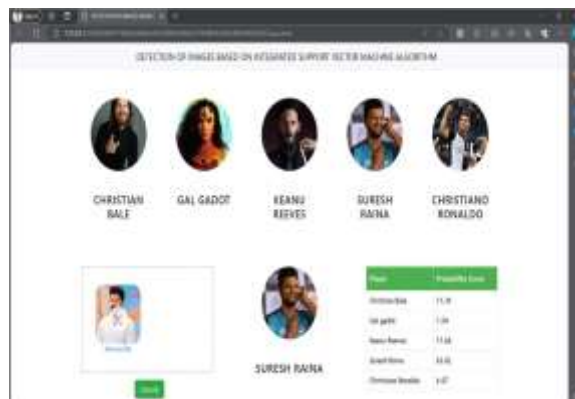
A Confusion matrix is an  $N \times N$  matrix used for evaluating the performance of a classification model, where  $N$  is the number of target classes. The matrix compares the actual target values with those predicted by the machine learning model. This gives us a holistic view of how well our classification model is performing and what kinds of errors it is making. Let's start with an **example confusion matrix for a binary classifier** (though it can easily be extended to the case of more than two classes):

**Table1: confusion matrix for a binary classifier**

n=165	Predicted: NO	Predicted: YES
Actual: NO	50	10
Actual: YES	5	100

### **REPORT OUTPUT FOR IMAGE**





## RECOGNITION:

## FUTURE ENCHANCEMENT:

Techniques utilized in this project have shown improvement in the accuracy of classification thereby yielding positive results. In future, this work can further be extended on the enhancement of techniques. can use deep learning for better accuracy and advancement of the project. We used SVM algorithm in this project, we can try upcoming technologies like CNN(deep learning) to get better accuracy and precision.

## CONCLUSION:

The scope of Machine Learning is not limited to the investment sector. Rather, it is expanding across all fields such as banking and finance, information technology, media & entertainment, gaming, and the automotive industry. As the Machine Learning scope is very high, there are some areas where researchers are working toward revolutionizing the world for the future. Let us discuss them in detail.

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## **DIGITAL HEALTH MAINTENANCE ENHANCING CLINICAL DECISIONS SURVEY**

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*Abstract: Organic products are grown up a system of agriculture without the use of chemicals, fertilizers and pesticides with an natural environment and social responsible. This method of farming that works at grass root level preserving the reproductive and regenerative capacity of the soil. It produces nutritious food rich in vitality which has resistance to diseases in food processing sector. Organic food sector covers fruit, vegetables, spices, meat, poultry, milk, fisheries, plantation, grains, etc., all are consumption from agro-processing industry. Now-a-days it is necessary to avoid the preservatives, additives that are sprayed on the food. Hence to find the harmful preservative is a challenge which can be overcome by using the IOT devices. Therefore in recent years there is a need to improve the awareness of the general public health about organic foods. The health conscious public is that most life style diseases are avoidable. The fear of getting sick is compelling people to start taking precautions and avoid unhealthy food. Contributing towards creating awareness around the implications of having unhealthy food. This article is spreading word about having a healthy lifestyle and guiding people to change their preference to organic diets.*

*Keywords: Organic food, Preservatives, IoT devices, harmful preservatives.*

### **I. Introduction**

Preservation of food products containing chemical food preservatives is usually based on the combined or synergistic activity of several additives, intrinsic product parameters (e.g. composition, acidity, water activity) and extrinsic factors (e.g. processing temperature, storage atmosphere and temperature). The concept of combinations of preservatives and treatments to preserve foods is frequently called the hurdle or barrier concept. Combinations of additives and preservatives systems provide unlimited preservation alternatives for applications in food products to meet consumer demands for healthy and safe foods.

In India we need to make more regulations to set forth what would add up to Organic Food. The need to re-educate farmers is important, especially returning to the old ways of farming in India. The northern part of India has still not fully discovered the Organic Food Industry. Although, Organic food industry is growing and so many new brands are entering the industry. As expected in the coming few years the consumer percentage will increase and will learn more about Organic food. Organic food industry growth will lead to better environmental practices. Environment consciousness is needed to grow with the Organic Food market, guiding people more about Organic food and its benefits to the environment.

## **II. Role of IoT in Food Safety:**

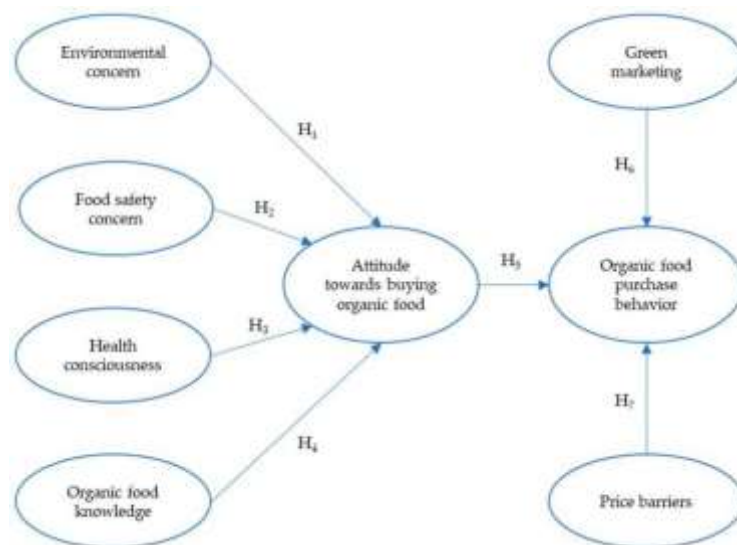
These predictions are based on the growing availability of wireless temperature sensors as well as geolocation devices and pathogen detection scanners. Industrial IoT technology gives food manufacturers and the food service industry real-time data to identify problems, reduce waste and prevent expensive, brand-damaging outbreaks and recalls.

Maintaining a safe temperature range for perishable food from farm to fork remains a technical and logistical challenge, and it's not the only one food producers and handlers contend with. Other areas for potential improvement in food safety are recordkeeping, the scope of monitoring, real-time visibility into systems, human error and cost management. Accurate data, available to managers as the readings are taken, can help with all of these tasks. IoT applications like RFID sensors connected to GPS networks have already begun to improve tracking of food as it moves through the supply chain, boosting efficiency, reducing shrinkage, and better predicting shelf life. Ref[10].



## **III. Organic food purchases in Emerging market**

The consumption of food has a significant impact on the environment, individuals and public health. This study aims to investigate the integrative effects of consumers' personal and situational factors on their attitude and purchase behavior of organic meat. The consumption of this product has been widely regarded as contributing towards sustainable food practices. The study was conducted in an emerging market economy, i.e., in India. Data were collected using a customized and validated survey instrument from a sample of 609 organic meat consumers at four food outlets in our country. The findings suggested that consumers' concerns regarding the environment, health, food safety and their knowledge of organic food, all significantly impacted their attitude towards the purchase behavior of organic meat. Interestingly, their positive attitude did not necessarily translate into their actual purchase of organic meat. Additionally, food stores' green marketing practices significantly enhanced consumers' actual purchase behavior. Conversely, premium prices of organic meat were certainly a deterrent for the actual purchase of organic meat. The findings of this study have several important implications for organic food producers, retailers, policy makers and socio-environmental organizations that seek to develop intervention strategies aimed at increasing organic meat consumption in India.



**Figure.2 Organic food purchase awareness**

According to Dunlap and Jones, environmental concern denotes “the degree to which people are aware of problems regarding the environment and support efforts to solve them or indicate the willingness to contribute personally to their solution” (Figure 2). In general, consumers who are concerned about the environment tend to develop positive environmental attitudes, express willingness to pay more for eco-friendly products and exhibit pro-environmental behavior.

#### **IV. Preservatives in Foods:**

Chemical food preservatives are applied to foods as direct additives during processing, or develop by themselves during processes such as fermentation. Certain preservatives have been used either accidentally or intentionally for centuries, and include sodium chloride (common salt), sugar, acids, alcohols and components of smoke. In addition to preservation, these compounds contribute to the quality and identity of the products, and are applied through processing procedures such as salting, curing, fermentation and smoking.

#### **V. Types of Preservatives**

##### **A. Natural Food Preservatives**

- To preserve the natural characteristics of the food
- To preserve the appearance of the food
- To increase of shelf value of food storage

##### **B. Chemical food preservatives**

- Benzonates
- Nitrites
- Sulphites
- Sorbates

### C. Artificial Preservatives

- Antimicrobial agents
- Antioxidants
- Chelating agent

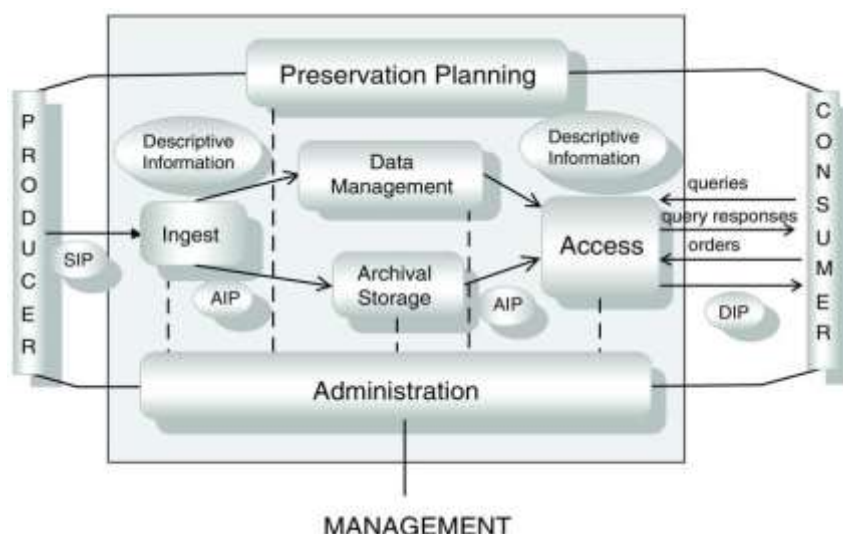
Chemical Affected	Organism(s)	Action	Use in Foods
Sulfites	Insects & Microorganisms	Antioxidant	Dried Fruits, Wine, Juice
Sodium Nitrite	Clostridia	Antimicrobial	Cured Meats
Propionic Acid	Molds	Antimicrobial	Bread, Cakes, Cheeses
Sorbic Acid	Molds	Antimicrobial	Cheeses, Cakes, Salad Dressing
Benzoic Acid	Yeasts & Molds	Antimicrobial	Soft Drinks, Ketchup, Salad Dressings

**Table 1: Common preservatives and their primary activity**

All food products except for the one growing food preservatives in them. Every manufacturer adds food preservative to the food during processing. The purpose is generally to avoid spoilage during the certain time. The above table 1 shows actions in foods.

### VI Preservation Planning

As shown in [Figure 4](#), preservation planning is an important bridge between the data producers and consumers. During the planning stage several questions (some of which are listed below) must be addressed.



**Figure 4. Preservation Planning**

In the past these questions have been the responsibility of biomedical data custodians and curators working in libraries, archives and repositories, who are usually engaged during the latter part of data lifecycle management (during data preservation and access services). We think that importance should be placed on data preservation during the planning of initial activities (e.g. collection, processing, storage), along with the ensuing activities (data analysis, sharing and reuse) ref[14]. In our opinion, developing a community of data stewards for biomedical research programs within institutions is an important step towards long-term preservation of biomedical data . Reference[15][16].

## **VII. Study of IoT in Food Safety**

Researchers and engineers around the globe are proposing different methods and architectures and based on that suggesting a variety of equipment to monitor and fetch the information regarding crop status during different stages, considering numerous crop and field types. Focusing on the market demand, many leading manufactures are providing a range of sensors, unmanned aerial vehicles (UAVs), robots, communication devices, and other heavy machinery to deliver the sensed data. In addition, various commissions, food organizations, and government bodies are developing policies and guidelines to observe and regulate the use of these technologies in order to maintain food and environment safety. There are reasonable efforts that highlight the role of the IoT in the agriculture industry, but most of the published work focuses only on applications. Most of the existing articles either provide no insight or show limited focus on the various IoT-based architectures, prototypes, advanced methods, the use of IoT for food quality, and other future issues. Considering the latest facts and figures. This manuscript examines the trends in IoT-based agriculture research and reveals numerous key issues that must be addressed in order to transform the agriculture industry by utilizing the recent IoT developments. The major contribution of this article is to provide real insight regarding:

- Expectations of the world from the food industry
- Very recent developments in IoT, both scholarly and in industry are highlighted and how these developments are helping to provide solutions to the food industry.
- Role of IoT to cope these limitations and other issues like resources shortage and their precise use, food spoilage, climate changes, environmental pollution, and urbanization.
- Strategies and policies that need to be considered when implementing IoT-based technologies
- Critical issues that are left to solve and possible solutions that are further required, while suggestions are provided considering these challenges. Reference[1...9]

SNO	AUTHOR	FOOD PRESERVATION	IOT DEVICES	USED TECHNIQUES	FUTURE WORK
1.	N. Moonrungee, S. Pancharee, and J.	Food colours	Image Sensors (Camera)	Chlorophyll status, Fruit ripeness , Leaf	Take pictures of any object, focuses lens



	Jakmunee [1]				
2	H. A. A Camacho[2]		Microphone	Machine maintenance, bug detection, to make audio queries.	Detects usual/ unusual sound and convert to electrical signals
3	R. Stiglitz, E. Mikhailova, C. Post, M. Schlautman[7]	Antioxidants	Barometer	Measures the elevation height in hilly agriculture.	Measures air pressure as an altimeter. Mostly used in correcting
4	Y. Yang, X.[6] Wan, J. Cui	Sulphites	Inertial Sensor	Precise distance of plant, leave or any other object is measured from camera.	Uses accelerometer and gyro to determine the object altitude in relation to the inertial system
5.	Z. Kou and C. Wu[9]	fungies	Cleanse and filter	IoT Analytics	detects affecting data,

### **Chemical Food Preservatives**

Food Preservatives	Acceptable Daily intake (mg/Kg body weight)	Used in Organic food Commonly used levels (%) Decreased
Lactic acid	No limit	No limit
Citric acid	No limit	No limit
Acetic acid	No limit	No limit
Sodium Diacetate	15	0.3-0.5
Sodium benzoate	5	0.03-0.2
Sodium propionate	10	0.1-0.3
Potassium sorbate	25	0.05-0.2
Methyl paraben	10	0.05-0.1
Sodium nitrite	0.2	0.01-0.02
Sulphur dioxide	0.7	0.005-0.2

### **VIII. Limitations:**

Role of IoT to cope these limitations and other issues like resource shortage and their precise use, food spoilage, climate changes, environmental pollution, and urbanization. Strategies and policies that need to be considered when implementing IoT-based technologies. Although, Organic food industry is growing and so many new brands are entering the industry. As expected in the coming few years the consumer percentage will increase and will learn more about Organic food ref[11]. Organic food industry growth will lead to better environmental practices.

## **IX . Conclusion and Future work**

The change in the Organic food industry was first noticed in the products such as sugar, maida and other mill products that were developed organically with the label of 'Organic' on them. The first step in the direction of the Organic food Industry was the Jaivik Bharat certification. According to this certification, any brand which claims that they produce their foods or products organically had to be certified, this was a major initiative by the government to organize Organic food market. The current scenario states that the current certified and organized organic market is around Rs2,500 crore and is increasing at a CAGR of 20 percent. In order to make it constant, the industry needs to be examined carefully and controlled by using laws. The main aim is to gain consumer's trust in products and to maintain the superior quality of these products. Reference[12].

Half of the Indian manufactured products are Organic by default due to small and dry land for farming. Foods that easily qualify to be part of Organic Category are backyard poultry, Indian sheep and goat, jackfruit, forest produced and tamarind. In India we need to make more regulations to set forth what would add up to Organic Food. The need to re-educate farmers is important, especially returning to the old ways of farming in India ref[13]. The northern part of India has still not fully discovered the Organic Food Industry. Environment consciousness is needed to grow with the Organic Food market, guiding people more about Organic food and its benefits to the environment.

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## **PROMOTING MENTAL HEALTH AND WORK LIFE BALANCE**

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***Abstract:** The conceptual paper reviews and deals with various ways as an actionable item to promoting mental health in the work life balance. It is a general opinion that establishing a healthy work life balance would prove a lot beneficial in the better the work-related stress which will in turn help in arresting issues of mental illness amongst employees. The healthy work environment being fostered in an organization there still lingers some mental health problems amongst employees which can again be addressed with the support of the workers and colleagues. The paper explored the various aspects of work life balance mental health issues and mental health of female and male managers in different sectors of organization, various factors of stress in the workplace and other place, what are the deadly effects of those affected medically and how an organization jointly with the help of theoretical frameworks and various intervention strategies cope with the same Two surveys were conducted in the years 2022 and 2024 on the quota samples of 300 members of the lowest and middle class: specialists, managers, and entrepreneurs. The recently analysis has indicated the connection between a lower level of WLB and worse mental and physical health. The relationship between WLB and health was stronger in 2014 than in 2024. It can be considered a result of mentality and lifestyle changes and generational renewal for promoting mental health and work life balance.*

***Keywords:** Mental Health, Workplace, Environment. Work-Life Balance,*

### **INTRODUCTION:**

Promoting Mental Health and Work Life Balance can be defined as a considerate of relationship between the social roles fulfilled in variance occupational work and in personal life assessed by group management and individual as being satisfactory, conflict-free, harmonious and enabling efficient process in both private and work areas. In either complex definitions, the following have also been pointed out: the distinction between life balance and conflict that can be treated as separated dimensions as it is possible to incident both of them at the same time; the existence of various aspects in which the balance takes place, e.g., time, behaviour, involvement, satisfaction; direction of conflict: work life conflict takes place when the professional roles interfere with non-professional roles, and life work conflict arises when non-professional roles interfere with the professional roles; the consequences of work and life interplay that can be positive or negative. Promoting mental health different aspects there are two probable factors that cause low work life balance to contribute to worsening health: stress and poor time management. If the job demand and resources theory, employee stress and adverse mental health result from a lack of balance between high job demands and low job resources. Promoting mental health and work life balance in additionally, it can be accompanied by attempts to reduce the high level of strain by unhealthy behaviours such as tobacco smoking or eating sweets or salty snacks. Poor time management can

be a consequence of lack of time for lack of involvement in doing healthy or avoiding unhealthy behaviour. To understand the causes of an imbalance between work and other life domains, research has investigated a wide range of explaining factors. Work life balance may vary by demographic, socio-economic and work-related organizational characteristics.

## **REVIEW OF LITERATURE**

Zeidan, S., & Bishnoi, M.M. (2023), Skill Gap, the paper studies employability readiness of under graduate students pursuing courses other than engineering. The study reported that the current university curriculum is not sufficient for meeting the skill requirements of industry and puts forth suggestions for revamping of curriculum, mandatory internships and project work. Behera, B., & Gaur, D.M. (2021), Skill enhancement, the paper notes that in the post pandemic scenario characterized by technological development, the skill gap issue has become more critical. Chenoy, D., Ghosh, S. M., & Shukla, S. K. (2019), The paper studies the skill enhancement eco system in India and the national programs for skill development. Among the suggestions of the paper are incentives to develop on the job skilling and re skilling in both public and private sectors and introducing industry-oriented curriculum in schools, colleges and universities. Ross & Vasantha, 2017; Jones and Bright, 2011 opined that the issues and effects of work-life balance are almost nearly equal across all states of working professionals but the effect of the imbalance are more severe for professionals at managerial level. The managers did express the fact that the tension to run their organization effectively by keeping all the employees motivated to do their work productively and at the same time managing their duties at home makes it all challenging. With the aggressive advent of new technology like video conferencing modes, high connectivity internet facility, mobile phones and virtual work settings have made them almost available throughout the day either from home or workplace. It is true that technology did help all to become multitasking but has also snatched the freedom and space of personal time at home and with family. This becomes one of the major factors of conflict and imbalance in work life. Mahal, 2016; Rehman and Roomi, 2018, In their research did find that as compared with men, women face a greater conflict in balancing work and family roles as they are associated with maternity, childcares, household works etc. which are not so highly associated with men. All these stages often coincide with their career progression for senior positions in their organization.

## **OBJECTIVES:**

To analysing the problem of discrepancies in skill levels attained and skill level expected by industry and individual development.

To review of the promoting mental health and work life balance current status of skill enhancement training initiatives by HEIs, Government and industry.

To understand the impact of such training on the Quality of Work life of employees and job readiness among students, organization, management role.

- (1) To identify the scope for further research in the area.

## **METHODOLOGY:**

For this research paper, databases such as Google Scholar and Cross Reference were searched to collect journal articles. Primary data collection for totally 150 for male 90 and female 60. A total of 70 papers and reports were reviewed and articles were searched using keywords such as “Skill Enhancement”, “mental health”, “Skill Gap”, “Impact of Training”, “work life balance”, “Quality of Work Life” etc.

### **Work Life Balance: Factors**

1. **Poor relation with Supervisors, Colleagues and Boss:** One of the common reasons for stress in an organization could be poor relations. Those has been seen that dealing with a difficult boss can be a reason for factors. Work life balance politics amongst colleagues against someone can be highly expressway for the targeted one.
2. **Perception:** In the number of employees there will always be one or two working religiously in order to deliver the assigned task and whenever they feel their productivity might get hamper due to distractions in the workplace or in the group. They seclude themselves as much as possible so that they can continue with their continued productivity which is often perceived by others in a negative way as a person who is not social or tagged as changed person. If these behavioural changes by colleagues and superiors do contribute to stress for these employees whose intentions are just to give their 100%.
3. **High demand for performance:** The senior management can be mental health and work life balance still now also remains as one of the most important causes for stress. Major reasons could be extended working hours, pressure of delivering always at peak level. which may be due to various nonproductive activities during the working hours and develop employee's skill to work place.
4. **Job Security:** With change being the only constant and rapid transformations in an organization.

### **Work Life Balance and Mental Health; Adverse Effects**

After an extensive literature review it was the opinion of many authors that to a certain extent mental stress related illness and behavioral health problems are correlated with each other. The claim has been further supported by Goetzel et al, 2002 where in a business case presented by him directed towards investment in mental health programs at the workplace where it was revealed that health care costs are rising at an un-imaginable way surpassing the general inflation rate of a country. All though the data presented by him showed that physical health expenditures far exceeded the mental health payments, more shockingly it has been found that mental disorder related illness tops the charts of being the most burdensome and costly surpassing the expenditures of heart related illness, stroke, cancer and obesity. Further deep-down analysis showed that mental health cost burden is related to loss of productivity, unemployment, disability and lower work performances. Through a research survey it has been further studied and claimed that poor mental health can lead to the development of physical health conditions which can further develop into adverse health outcomes such as cardiovascular disease, diabetes and musculoskeletal- respiratory disorders. Data from insurance companies revealed that the majority of the claims with respect to patients with comorbid mental health and substance use disorders are two-three times higher than that of patients without comorbid conditions. There is a high chance of developing diabetes (29%) and asthma (43%) for those with high prevalence of depression. In fact, depressed persons are more likely to develop coronary artery disease. Luppino et al did find a strong link between depression and obesity where in his study he found out that those with depression had a 53% greater risk of developing obesity than non-depressed individuals. It has been observed that patients when presenting about their problems to doctors often feel reluctant to bring out their mental health related problems due to the social stigma associated with the illness. As a result, the illness does go unattended leading to masking of the illness and may be missed due to the same.



In short if an employee is facing mental health issues, then other dimensions of health are also similarly affected which in turn increases the health care expenditure and diminish individual performance at work.

### **Productivity & Efficiency Vs. Stress and Mental Health:**

It has been evident from various reports that adverse mental health does take a toll on work performance and productivity. Researches have shown that employees in the organization are remaining absent not because of physical illness or injury but because of work related stress and anxiety which has developed at the workplace. The same of which affects the most on those employees whose mental acuity and knowledge are key job requirements. In the 21<sup>st</sup> century it becomes very important to understand the increasing mental illness affecting people for both economic and humanistic reasons. It has been seen in the past that an employee affected with mental illness can cost an organization adversely in a huge way. Through research it could be analyzed that most of the economic losses happen due to loss and decreased productivity resulting in increased absenteeism rates which are all again related to the effects of mental illness. Although there has been evidence that productivity in an organization does get highly affected by mental illness, there remains a major chunk where still researchers an employee's productivity and work performance.

### **SCOPE OF THE STUDY:**

1. The Skill India initiative aims to upgrade skills of the working population. Right kinds and level of skill will enable to reap demographic dividend.
2. Skill upgradation among the workforce is a must for Make in India.
3. An analysis of the impact on Skill Enhancement on Quality of Work Life of graduates benefits all stakeholders.
4. Procurement of talent and ensuring the right skills among employees is a major concern for the industry.
5. An insight into the effectiveness of skill enhancement programmer would enable HEIs to design courses, course content and content delivery in more effective manner and would make students job-ready.

### **FINDINGS AND SUGGESTIONS:**

1. Understanding the various factors which contribute to workplace stress which can be a risk factor for psychiatric disorders and for the people they might affect.
2. Possibly developing screening tools for mental illness and functional impairment in the workplace with a check mechanism of regular timely evaluation and developing a scorecard.
3. Evaluating the various EAP interventions with respect to the impact it is having on stress, burnout and psychiatric disorders.
4. Based on the observations and recommendation of the above possible areas one can develop guidelines for the management of mental illness in the context of the Occupational mental health system.

### **CONCLUSION:**

It is true that almost 50-60% of our life span is spent behind our career and on our job's, so it becomes very crucial that our workplaces become a ground for implementing the initiatives for

our public health which will promote our mental health and behavioral health issues in a positive way. All though it has been agreed that mental health and wellbeing of an employee in a workplace can be attainable but for that there needs to be an effort to maintain the records and the information. Work life balance of effectively disseminating the information through implementation of policies and procedures targeted towards achieving the said objectives.

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## **BLOCKCHAIN AND HUMAN RESOURCE MANAGEMENT INTEGRATION: A SYSTEMATIC REVIEW**

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***Abstract;** The integration of blockchain technology into human resource management (HRM) has emerged as a transformative approach to enhancing efficiency, transparency, and security in organizational processes. This systematic review examines the link between blockchain and HRM by discovering the potential applications, benefits, challenges in future prospects of the integration. Key area focus includes recruitment, employee verification, payroll management, performance appraisal and data security. By analysing existing literature this review highlights blockchains capability to streamline operations, mitigate fraud, and ensure data privacy. The findings highlight the importance of addressing technological, legal, and ethical challenges to realize the full potential of blockchain in HRM. Future research directions are proposed to guide organizations in leveraging blockchain for strategic HRM advancements.*

***Keywords:** blockchain, human resource management, recruitment, employment, integration*

### **INTRODUCTION**

In recent years blockchain technology has gained significant traction across industries due to its decentralized, secure, and transparent framework. Originating as the foundational technology for Cryptocurrencies like Bit coin, blockchain has evolved into a versatile tool capable of transforming various business functions. Within the territory of human resource management (HRM), the integration of blockchain is composed to redefine traditional practices by addressing challenges such as data security, authenticity, and operational inefficiencies. This convergence of blockchain and HRM offers a promising avenue for enhancing organizational performance and employee trust. One of the primary applications of blockchain in HRM lies in recruitment and employee verification processes. Blockchains immutable ledger can securely store and verify candidate credentials, eliminating fraudulent claims and reducing the time spent on background checks. Additionally the technologies potential extends to payroll management and compliance ensuring timely and transparent transactions while reducing administrative overhead. These applications underscore blockchains capability to streamline HRM processes and create a more robust framework for organizational decision-making.

However, the integration of blockchain into HRM is not without its challenges. Issues related to technological adoption, regulatory frameworks and ethical considerations present significant hurdles. While the technology promises enhanced security and efficiency, its implementation

requires substantial investments in infrastructure and expertise. This paper systematically reviews the existing literature to explore the potential of blockchain in HRM, its benefits, limitations and the path forward for successful integration. Originally conceptualized as the underlying framework for Cryptocurrencies blockchain was used for decentralized, secure transparent attributes but now it's being leveraged beyond finance to revolutionize traditional business processes.

Among these Human Resource Management (HRM) stands out as a domain composed to benefit significantly from blockchain integration. HRM as the backbone of organizational success and it also involves critical functions such as recruitment, payroll management, employee verification, and performance evaluation. However, these processes often encounter challenges related to data security, transparency, efficiency, and trustworthiness. Blockchain technology with its ability to provide tamper-proof records, real-time data accessibility and enhanced privacy protection offers solutions to these tireless issues.

## **REVIEW OF LITERATURE**

This systematic review aims to examine the intersection of blockchain technology and HRM, focusing on its potential to streamline HR processes, improve data integrity, and foster a more equitable and efficient workforce ecosystem. By consolidating existing research, the study provides insights into the adoption, challenges and implications of blockchain within HRM practices towards paving the way for innovative approaches in managing human capital. The integration of blockchain in HRM is not without its complexities, including technological, legal and ethical considerations. This review systematically explores the academic and practical literature to highlight the current state of research, identify gaps, and propose future directions for leveraging blockchain to redefine HRM.

**Johnson and Lee (2021)** examined the role of blockchain in safeguarding employee data. The study pointed out that HR departments often handle sensitive information, including personal identification and performance evaluations, which are vulnerable to breaches. Blockchain's decentralized and encrypted framework ensures that employee data remains secure and tamper-proof. The authors emphasized that while blockchain improves data privacy, organizations must navigate regulatory compliance issues, particularly concerning data protection laws such as GDPR. They suggested that integrating blockchain with existing HR systems requires careful planning and collaboration with technology experts.

**Kumar et al. (2020)** analysed the impact of blockchain technology on payroll and compensation management. The researchers highlighted blockchains ability to automate salary disbursements using smart contracts, ensuring accurate and timely payments while minimizing human error. Their findings showed that blockchain enhances transparency and compliance in payroll operations, particularly in organizations with a global workforce. However, the study also noted concerns regarding the initial costs of implementation and the need for robust cyber security measures to prevent unauthorized access.

**Smith and Brown (2019)** explored the application of blockchain technology in recruitment, focusing on its ability to authenticate candidate credentials. Their study emphasized that blockchain's immutable nature significantly reduces fraudulent claims, such as falsified educational

qualifications and work experience. By enabling decentralized and secure data storage, blockchain eliminates the need for third-party verification agencies, thereby streamlining the hiring process and reducing associated costs. The authors concluded that blockchain has the potential to improve the reliability and speed of recruitment, though widespread adoption requires addressing technical and regulatory challenges.

## **RESEARCH OBJECTIVES**

1. To examine the current state of blockchain applications in HRM.
2. To identify the potential benefits and challenges of blockchain integration in HR processes.
3. To explore future opportunities and research gaps for advancing blockchain adoption in HRM practices.

By investigating these dimensions, this study aims to provide a comprehensive understanding of how blockchain can redefine HRM, fostering a more efficient, secure, and employee-centric approach to managing human capital. This study seeks to explore the intersection of blockchain technology and HRM by analysing existing literature and identifying key trends, applications, and obstacles. The review also aims to highlight the implications for practitioners and researchers, offering a roadmap for integrating blockchain in HRM effectively.

## **RESEARCH METHODOLOGY**

This study employs a systematic review approach to explore the integration of blockchain technology into human resource management (HRM). The research is based on secondary data collected from a variety of credible sources, including peer-reviewed journals, industry reports, white papers, conference proceedings and reputable online publications. By synthesizing existing literature, the study aims to provide a comprehensive understanding of the applications, benefits, and challenges of blockchain in HRM.

The data collection process involved a thorough search of academic databases such as Scopus, Web of Science and Google Scholar. The analysis of secondary data was conducted using a thematic approach to identify key trends, recurring themes, and gaps in the literature. The selected studies were critically reviewed to evaluate the potential of blockchain in transforming HRM practices, including recruitment, payroll, performance management, and compliance. Limitations and challenges associated with the technology were also explored. The findings of this systematic review provide valuable insights into the current state of research on blockchain and HRM, laying the groundwork for future investigations and practical implementations in this domain.

## **Potential Applications of Blockchain in HRM**

1. **Recruitment and Talent Acquisition:** Blockchain enables the creation of verifiable digital identities and credentials for candidates. This eliminates the need for repetitive background checks and reduces fraud related to falsified resumes or certifications, thus accelerating the hiring process.
2. **Employee Data Management:** Storing employee records on a blockchain ensures data integrity and privacy. Employees have control over their own data while HR managers

can access reliable and up-to-date information, enhancing trust and reducing administrative burdens.

3. **Payroll and Smart Contracts:** Blockchain-based smart contracts can automate payroll processes particularly for global workforces. Transactions are executed automatically based on predefined conditions, ensuring timely and accurate payments with reduced reliance on intermediaries.
  4. **Performance Management and Rewards:** A blockchain system can record performance metrics transparently, providing employees with confidence in unbiased assessments. Monetary benefits such as incentives, bonuses and promotions can also be managed fairly and efficiently using blockchain.
- **Compliance and Security:** Blockchains immutable nature ensures compliance with labour laws
  - **Streamlining Recruitment Processes:** Blockchain technology has the potential to revolutionize recruitment processes by addressing inefficiencies in traditional systems. Typically, candidates must repeatedly provide their personal information to multiple organizations, making the process lengthy and lead to errors. With the help of blockchain, candidates can create a secure digital identity that is verified through decentralized systems and stored as an immutable record. This not only speeds up recruitment but also reduces errors and enhances reliability. Additionally, blockchain-based systems allow employers to efficiently identify ideal candidates by maintaining precise records of qualifications, work experience, and skills.
  - **Ensuring Data Security:** HR departments handle sensitive data, including employee personal details, salary information, and performance reviews. Protecting this data is critical. Blockchains decentralized storage ensures that information is securely stored in a tamper-proof manner. Once recorded, the data cannot be altered and is accessible only to authorized personnel, significantly reducing the risk of cyber-attacks and data breaches.
  - **Enhancing Employee Engagement:** Blockchain can also play a role in improving employee engagement. Blockchain-based reward systems enable employers to provide incentives and bonuses for achieving milestones, which are securely stored in a blockchain-protected digital wallet. This ensures rewards are both tangible and safe. Additionally, blockchain facilitates transparent and fair performance evaluations by recording metrics and feedback from colleagues and managers on an immutable ledger. This transparency ensures evaluations are based on reliable data, fostering trust among employees.
  - **Facilitating Payroll and Benefits Management:** Blockchain-based payroll systems simplify salary disbursement by eliminating intermediaries, such as banks, which helps reduce errors and delays. Payments are processed quickly and efficiently, ensuring employees receive their salaries and benefits on time. The transparent allocation of benefits enhances trust between employers and employees, promoting fairness and satisfaction.
  - **Smart Contracts:** Blockchain-based smart contracts enable HR departments to automate and streamline contract management processes, minimizing the need for manual intervention and accelerating workflows. Smart contracts are self-executing agreements where the terms between parties are embedded in code. These contracts are stored on a blockchain network and are executed automatically when predefined conditions are met. For instance, they can trigger specific actions such as contract renewals or salary



payments upon satisfying the agreed criteria. This technology is particularly well-suited for HR functions, including employment agreements, non-disclosure agreements, and other legal documents. Additionally, smart contracts enhance transparency and security within HR processes, as all parties involved can view the terms and conditions in real-time. This level of visibility fosters trust and significantly reduces the potential for disputes or fraud.

### **Impact of Blockchain in HR Management**

### **FINDINGS OF THE STUDY**

The findings aim to provide a comprehensive understanding of how blockchain can revolutionize HRM practices and contribute to organizational sustainability in the digital era. The potential of blockchain technology in human resource management is extensive and transformative, offering solutions to minimize errors and fraud while enhancing transparency and operational efficiency. As the business landscape becomes increasingly digital, innovative technologies like blockchain are poised to reshape traditional practices, helping organizations remain competitive. With the growing adoption of blockchain, the field of HR is likely to witness even more ground breaking applications, providing a secure, efficient, and transparent approach to talent management in the digital era. It is crucial for HR professionals and organizations to recognize the value of this technology and harness its potential to drive innovation and success.

### **CONCLUSION**

This study underscores the transformative power of blockchain in addressing longstanding challenges in HRM, including data authenticity, fraud prevention, and operational inefficiencies. Despite its promising applications the adoption of blockchain in HRM faces notable challenges that includes technological barriers, high implementation costs and also regulatory uncertainties. Organizations must carefully evaluate these challenges and invest in infrastructure, training and strategic planning to harness the full potential of blockchain. Collaborative efforts among industry stakeholders, technology providers and policymakers are essential to create a conducive ecosystem for blockchain integration in HRM. As organizations increasingly embrace digital transformation blockchain is offering a robust solution for fostering trust, accountability and innovation in HR processes. However the further research is needed to explore the long-term implications, ethical considerations and scalability of blockchain in HRM. By addressing these areas, businesses can unlock new opportunities for sustainable growth and create a more secure, efficient and equitable future for their workforce.

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## **A STUDY ON CHALLENGES OF HUMAN RESOURCES MANAGEMENT IN CURRENT SCENARIO**

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***Abstract:** This paper examines the challenges that the human resource departments are facing in the current environment. In order to achieve the employer's strategic goals and objectives, human resource management, or HRM, is tailored to the business's operations to maximize employee performance. HRM focuses on managing employees within businesses, placing a strong emphasis on procedures and guidelines. In the modern era, HRM takes on a more crucial and strategic role, addressing these problems and providing quicker solutions to the specific issues affecting the organization and its workers. In the upcoming years, HR departments will have difficulties. Employees are regarded by HR departments as "valuable assets" of the companies. Employees are able to focus entirely on their work, resulting in the full utilization of resources at the lowest cost and maximum profit in the shortest amount of production time.*

**Keywords:** Human Resources Management, HR, Employer, Departments.

### **INTRODUCTION:**

In organizations, human resource management faced many difficulties. In a nutshell, human resource management (HRM) is the process of hiring, choosing, and training staff members as well as giving them the right orientation and induction.

HRM also covers employee evaluation such as performance reviews, enabling appropriate pay and benefits, supporting the upkeep of appropriate labor and trade union relations, and looking out for the safety, welfare, and health of employees by abiding by local, state, and federal labor laws. HRM works to assign tasks to employees in order to maximize output or outcomes. In essence, HRM can be defined as a multidisciplinary endeavor that integrates insights and knowledge from various fields such as economics, psychology, and so on. Results, not regulations, are the primary focus of HRM. Every year, the challenges and functions related to human resources change. The biggest issues facing HR departments today are those related to hiring, selecting, retaining staff, developing leaders, corporate culture, etc.

### **Recent Challenges of Human Resource Management:**

The HR department in today's world is dealing with far too many pressing issues within the company. The Human Resources Department can assist in resolving issues and achieving organizational goals and objectives, as well as competitive goals and objectives, with ease. The human resource management field faces far too many challenges in this day and age. In order to address these issues, the HR Department must meet the following competition requirements, organizational goals, and objectives:

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**Competitive Challenges:** Those brought about by intense competition, globalization, and technological advancements are known as competitive challenges.

Globalizations:

These pertain to the necessity for Human Resource Management to undertake difficult tasks in order to compete and take on demanding roles. The business environment of today is one that is constantly changing to ensure that organizations survive. One of the main functions and activities of Human Resources is to influence the company through competitions in a specialized industry. Technology:

Using new techniques and strategies to reduce waste and maximize resource utilization is referred to as technology. Deals with the development, application, and relationship between technical means and life through technology. However, HR managers will have a new challenge if our rivals implement new technology, so HR departments will have a greater obligation to comprehend it, apply it within their own company, and train staff members on it as well.

Managing Change:

HR managers face similar challenges. A methodical approach to handling an organization's objectives, procedures, or technological advancements is known as "managing change." HR managers are responsible for devising strategies to bring about change, manage it, and support individuals in adapting to it.

Human Capital:

Human capital is defined as an individual's abilities, knowledge, and experience within an organization. In other words, HRM uses people knowledge, skill, and performance to identify and place the right person in the right job.

Responsiveness:

HR managers respond to specific issues that the organizations face promptly.

Cost containment:

Every business seeks to maximize profits at the lowest possible expense while fully utilizing its resources and surpassing all goals set forth by HR departments.

Human Resources:

Human resources refers to viewing people as an organization's most valuable resource.

Planning:

HR departments create plans to determine what human resources are needed now and, in the future, to help organizations reach their objectives.

Recruitment

HRM invites application pools based on job requirements. Individuals searching for work, HR managers choose those candidates and put them on staff;

Staffing

HR departments chose the qualified candidates based on their qualifications, experience, and knowledge.

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#### **Job Design:**

One of HRM's primary functions is job design, which deals with defining the tasks methods, responsibilities, and content in order to meet organizational, technological, and individual needs as well as the social and personal needs of the worker or employee.

#### **Training & Development:**

The subsystem of training and development within an organization focuses on enhancing the performance of both individuals and groups. Training improves one's ability to perform a specific task.

#### **Performance Appraisal:**

Performance appraisals are conducted on a regular basis to evaluate an employee's work performance and productivity in light of predetermined standards and organizational goals.

#### **Compensation:**

HRM protects employees' interests within the company and gives them a regular salary and benefits. The financial benefits that an employee or worker receives in exchange for their services to a company is known as compensation.

#### **Communication:**

Employees receive important information about the organization's goals, mission, vision, and objectives from communication-HR management. It's a procedure for exchanging news, ideas, and information.

#### **Benefits:**

Medical, insurance, housing allowance, paid time off for vacation, sick leave, and other things were included.

#### **Labor Relations:**

Above all, HRM aims to forge solid bonds between employers and employees. Put differently, we can argue that HRM is essential to the relationship between the two sides.

#### **Employee Concerns:**

Human resource management is primarily concerned with people, as it involves hiring, selecting, training, and keeping individuals within the company.

#### **Background Diversity:**

This refers to the shared and unique characteristics of employees with regard to age, gender, race, religion, physical capabilities, and cultural background. Heterogeneity in the workforce is caused by diversity.

#### **Age Distribution:**

HR managers took into account the employee's age, length of service, and educational attainment.

#### **Gender issues:**

In the field of gender studies, gender issues in HRM have not received much attention.

#### **Educational Levels:**

The overarching goal of the human resources management (HRM) function in any educational institution is to draw in, nurture, keep, and inspire staff members in order to fulfill the mission of the institution.

#### **Employee Rights:**

Every employee has fundamental rights at work, such as the freedom from discrimination, the

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right to privacy, and the right to a fair wage.

Privacy Concerns:

The right to privacy of an employee is now a common subject in employment laws.

Work Attributes:

Human resource management will possess a strong educational basis concerning the roles of human resources, multitasking prowess, leadership qualities, and captivating presenting abilities.

Family concerns:

One of the biggest issues Human Resource Management faces is how to keep employees happy by occasionally providing family vacations, medical leaves, and other benefits.

Major Trends of Human Resources Management:

#### **Technology-enabled tools:**

In the modern era, technology has simplified the organizational environment. The new technology was easily understood by human resource management, and as a result, employee performance improved.

Work-life balance:

HRM also pays attention to each employee's work-life balance. Strong bonds were forged as a result between organizations and their workers.

Goodwill toward coworkers:

HR departments view employees as the "valuable assets" of their companies. As a result, workers focus entirely on their work, maximizing profit and minimizing costs while reducing production time.

To get ready to adopt new technologies:

HR departments are always prepared to deal with emerging trends and technologies because they are aware of the goals of the organization.

Gender equality:

Over the past few decades, women's roles in the workplace have changed in society. The percentage of women who are literate has also increased dramatically.

Women Empowerment & Workplace safety for women:

Despite these commendable advancements, women still face many obstacles. Insecurity to discrimination based on pregnancy and gender biases. Although these obstacles lead to personal crises and mental disturbance, HRM focuses on all issues that women face.

Career growth: More than anything else, employees of today want to advance in their careers. They are looking for a position that will support their personal and professional development.

Employees' mental readiness for work:

This indicates that one of the main problems at work is poor mental health. HRM carried good news in the form of awareness and change. To assist HR managers in lowering employee stress levels. For this reason, every company has since established the Stress management.

#### **CONCLUSION:**

The needs of an evolving organizational environment must be reflected in HRM's role. Successful businesses are evolving into ones that are more customer-focused, flexible, and quick to change course. Planning, organizing, leading, and controlling human resources through efficient HR departments is a skill that HR professionals must acquire. Emerging trends in employee



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development and training should be familiar to HR managers. HR managers concentrate on hiring, selecting, training, and developing programs, performance reviewing, and retaining staff members. They also learn how to use staff members to manage human capital, which supports the success of organizations. Stated differently, HR managers serve as a liaison between the management and the employees, fostering a robust working relationship in the process. This study's primary goal is to analyse and highlight the difficulties that human resource management faces and the important role that it plays in organizations. HR directors via HRD programmers. HR managers of the human resource department may face a variety of challenges and issues in the course of carrying out their duties in the modern era. Any competent HR manager would address these problems and obstacles in order to stop organizational actions that are detrimental to businesses. Finally, we arrive at the conclusion that HR managers inspire staff members to give their all for the benefit of the company, the economy, and each individual employee.

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## **DIGITALISATION IN BANKING: CUSTOMER EXPERIENCE ON BANKING SERVICES**

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***Abstract:** Each and every industry is affected by the idea of digitalization, and the banking industry is no exception. Digitization is a critical component of the Indian banking sector and helps to improve customer service. Understanding the availability and affordability of digital banking to customers is the primary goal of this poll. In and around Mangalore, structured questions will be conducted. This study found that insufficient maintenance prevented clients from becoming digitalized, and that technological security was the largest barrier to accessibility. According to this report, banks should make greater investments in dependable and robust systems in order to lower the possibility of errors and transactions occurring at POS terminals, ATMs, and mobile banking.*

***Key words:** Digitalization, Banking Service, Customer Expectation.*

### **INTRODUCTION**

We now consider digitalization to be an essential aspect of life, without which it would be meaningless. Digitalization is a major factor in the globe that is changing quickly. Transforming data into a digital format is called digitization. The banking industry is not an exception to the rule that almost every economic sector depends on digitization for growth. Comparing those that are lagging behind in adopting digitalization, the nations that are adjusting to it with ease are doing very well. Because of the financial support the banking industry gives to other industries, which in turn promotes capital formation, it is referred to as the sector of development for all other sectors. Even Despite being one of the world's fastest-developing nations, India is far behind in the banking sector's digitalization. Due to shifting consumer behavior, rising expectations, and innovation, the banking industry is undergoing significant changes. The aim of this study paper is to examine how customers are experiencing the digitalization of banking and to obtain fresh insights in this domain. The banks offer a range of digital banking services to its clientele, including Interbank Mobile Payment System, Debit and Credit Cards, Real Time Gross Settlement, National Electronic Fund Transfer, and Mobile Banking. Digitalization in the banking industry greatly promotes financial inclusion and accelerates economic growth.

## **Review of literature**

**Joseph et al. (2023)** looked into how transactions were affected by the Internet. Banks will refer to these services using the words of banking services. They have discovered a sizable online trading tool for customers that assesses the level of quality of electronic financial services, including the ability to cut down on paperwork and promptly address client complaints and comments, whether they are made at home or at the workplace.

**According to Web Mols (2022)**, banks are falling behind cutting-edge distribution channels and Internet banking is a marketing association. Compared to the current Internet, innovative distribution channels have less time to wait for other industries to innovate. In contrast to conventional transportation channels, **Brno-Britz (2021)** described a bank with a substantially less expensive construction. While internet banking offers additional benefits, it also raises the bank's running costs and diminishes the primary advantages of e-finance. Online banking has been observed by the global financial industry, according to **Hasan (2020)**. They went on to say that this new technical advancement might lead to customers' contentment, which is an important tactic for banks to draw in and keep business.

## **Objectives of the study**

- To investigate the influence of digital banking for customers experience.
- To assess accessibility and affordability of digital banking.
- To determine adaptability and affordability of digital banking influence customer satisfaction.

## **Research Methodology**

The study was based on primary and Secondary data. Primary data was collected, by means of a structured questionnaire. Closed-ended questions were taken in this research for better tabulation and data interpretation, keeping in view related objectives of the research. The population infinity and enhance, the sample selected was 66 respondents, by convenience sample techniques. A survey method had been used through direct communication with respondent. The data was analyzed with the help of a simple percentage.

## **Characteristics of digital banking**

### **• Open-ended questions:**

The interview questions need to be specifically shaped, e.g. by beginning the questions with —why| or —how,| the respondent won't answer —yes| or —no,| instead giving the respondent the liberty to answer the question in their way.

Semi-structured format:

To keep the interview simple yet efficient, it is significant to pre-plan the key questions in an organized way that will keep the interview. Conversational and easy to follow. However, it is

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great if there is a possibility for it to flow. The question from previous responses.

- Seek understanding and interpretation:

Active listening skills are important to perform an interview, it helps to reflect what the respondent has to offer for information. It helps the interviewer seek further understanding and clarity. Throughout the interview by interpreting what's being said.

- Recording responses:

It is more efficient to record the interviews by audio rather than writing notes. By audio-recording, it helps the interviewer to focus more on the respondents' reflections rather than doing two things at the same time by recording.

#### **Benefits of digitization in banking**

**Convenience:** One of the critical advantages of mobile and online banking solutions is the convenience of banking whenever and wherever you like.

**Features:** Numerous banks provide web and mobile platforms with lots of features.

**Security:** Security is a top issue for financial institutions. Additionally, it includes internet and mobile banking.

**Control:** Another significant advantage of digital banking is the ability to self-serve and control your funds. You can also manage and move money in real-time as you see fit.

**Benefits Beyond Banking:** Consumers can enjoy a variety of significant advantages from digital banking that can simplify their life and help them manage their finances better.

#### **Opportunities for sustainable growth**

- Retail banking will be immensely benefited from the Indian demographic dividend. It is important to note that the middle class population is expected to touch 200 million by 2020 and 475 million by 2027. This would imply mortgages would grow fast and likely to cross Rs 40 trillion by 2020;
- Another segment that will provide huge opportunities will be the financing of affordable housing for growing 'low' & 'middle' class;
- Rapid accumulation of wealth in rich households will drive wealth management to a large size;—The Next Billion consumer segment will emerge as the largest in terms of numbers and will accentuate the demand for low cost banking solutions and innovative operating models, throwing up a big market of small customers;
- Banking will come of age with widespread access to internet on mobile reaping the benefit of the high density in the country;
- Margins will see downward pressure both in retail and corporate banking, spurring banks to generate more fees and improve operating efficiency;
- Banks will discover the importance of the SME segment for profitability and growth and new models to serve.

### **Challenges of digital banking**

- Internet connection and a smart device such as mobile phone, tablet or personal computer is a prerequisite to use these services.
- The digital literacy in India is still very low. According to the Internet and Mobile Association of India Report and digital literacy is almost no-existent among more than 90% of India's population.
- Security of user's information has been a matter of concern since the inception of electronic transactions and the same may hamper their adoption as well.
- Difficulty in understanding the usage of the digital banking services. Senior citizens preferring the traditional banking systems and people who are not tech-savvy are more prone to this difficulty. According to a report on encashing.
- According to the same report, 23% of banked population feel that digital banking services lack transparency in the form of hidden transaction charges.

### **Role of digitalization in Indian banking**

- Improved quality of services.
- Banks and customers save cost and time by using ATMs and other cashless transactions.
- Improved customer experience.
- With more digital data at their disposal, banks can use digital analytics to make dynamic, data-driven decisions.
- Technology is non-discriminatory in its application.
- Everyone is treated equally at the bank.
- With the improvement of banking services, the number of bank consumers will increase.
- Digitization reduces human error.
- No need to handle large amounts of money.
- Simplify data storage and retrieval.
- Digitalization can change the paradigm of financial inclusion and can dramatically change the paradigm of financial inclusion.
- The ease of use of digital banking could lead to mainstream adoption of an unbanked economy.
- However, India's socio-economic situation highlights the need for digitalization.
- Digitalization is a safe way to do business as crime and corruption rates are very high.
- Reduces bank staff's workload and saves time.

### **Data Analysis**

The data collected from the interviews were analyzed using an analytical approach to make the data useful for this study. Interviews conducted were recorded and transcribed using digital tools, manually reviewed in case the digital tools missed important details, and finally summarized to

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identify important employee details facts and statements were displayed.

We also analyzed the data to see how many of the participants had the same perceptions, experiences, and perspectives on the same facts/statements, and also discovered her patterns among participants .A comparison of findings from the literature with the results of his interviews with 4,444 people was performed to identify connections between ideas, specific words, or concepts.

The analysis approach is called content analysis .To obtain valuable data and results, the content collected was based on Collis & Hussey (2013)'s four main step process. Due to the limitations of this study, the final key to the process is reconceptualization, which is not used.

1. Understanding - A comprehensive understanding of the environment, culture, and research topic from interviews before beginning research (how much knowledge a researcher needs to properly understand is debatable) ).
2. Synthesis - different topics and concepts are brought together to form new patterns of synthesis (data is reduced and filtered to obtain general explanations) .
3. Theorizing - Theory gives structure and application to qualitative data by contrasting the data with alternative explanations.

#### **Advantages of digital banking**

Reasonable costs and prices, convenience in offering new products and services, easy collection of bank customer information and reduced operational risks, easy access and uninterrupted service, customer satisfaction, Increased Loyalty, Profitability Digital banking eliminates the need for a physical location to provide banking services, thereby reducing costs and providing a reasonable cost-to-price ratio. The digital environment makes it easier for banks to offer products and his services to the market. Digital Banking collects accurate information about customer demographics and needs by reducing operational risk while providing 24/7 service.

#### **Disadvantages of Digital Banking**

In contrast to the advantages, the disadvantages of digital banking are as follows. Relationship with customers. One of the biggest criticisms of digital banking is the risk of data corruption and identity theft, as the system is easy to use and can be accessed from other online platforms. Failures or deficiencies in the technology infrastructure can reduce the quality of service and reduce customer satisfaction due to reduced customer contact caused by virtual environments.

#### **Limitation**

- This research is good, all research has some problems and limitations.
- The results are culture may have a significant impact on how digitization works
- The researchers of this study are fully aware that the interviews are limited .
- Negative effect on the reliability.
- The interviews can be one-sided because of ethics.
- The participants are volunteers and have the free will to leave.



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### **Recommendations and Conclusion**

To avoid mistakes, banks should pay special attention to reliable systems to avoid accounts, internet banking, and POS terminals. To improve your operations, you need to take advantage of the availability and affordability of digital banking to improve your digital banking. Bank should invest in ICT technology in collaboration with various institutions. Governments should consider developing new software to ensure 100% secure financial transactions. Digitalization of the financial sector is essential to meet rising global expectations as the use of smartphones increases. This reduces human error and increases convenience. However, as threats from the Internet increase, banks need to pay close attention and prepare for cyberattacks.

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## **IMPACT OF DIGITAL TRANSFORMATION AND SUSTAINABLE DEVELOPMENT OF BUSINESS**

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***Abstract:** Digital Transformation Driving Significant advancements in communications technology and wide availability of internet have resulted in what is dubbed as the Digital age, marked by large volumes of a variety of data created at ever increasing speeds. This is creating digital imperatives for transformation, impacting an organization's Supply and Demand, and Operations to sustainable business models. In this review new age of technology revolution, Digital Transformation is the new way of doing business by leveraging Digital technologies such as Cloud, Big Data, Mobile computing, social computing, and Operational Efficiencies and Customer Experiences. If the way business gets done has an Environmental, Social and Economic footprint, Digital Transformation impacts the sustainability aspects of doing business. This is important for organizations since consumers, shareholders and other stakeholders have visibility to business impacts on Brand Value, Revenues and Company Valuation.*

***Keywords:** Digitalization, Digital transmission, Sustainability, Sustainable development.*

### **INTRODUCTION:**

Digital capabilities such as Unified Data, Analytics, and Digital frameworks enable integration of Business and IT, impact Customer Experience, and Operational Processes. This results in increased productivity, higher revenues, and cost reductions. An example is the framework defined by Cap Gemini (2011), on the impact Digital capabilities has on Customer Experience, Operational Processes, and Business models. Many aspects defined in the framework such as streamlined customer processes, cross-channel coherence, self-service, Performance Improvement, worker's being able to work Anywhere Anytime with broader and faster communication, Operational Transparency, transition from physical to digital, and Enterprise Integration, in fact, also impact the Sustainability aspects of doing business. Over the past five decades, Digital and Sustainability have evolved with few touchpoints and little acknowledgement of the influence that one has on the other. Digital Technology journey over the years has seen an evolution in Computer Technologies. Sustainability has evolved from covering just the social aspects to a wider canvas that includes Social, Environmental and Economic aspects.

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The first phase of the Digital Technology journey started about mid of the 20<sup>th</sup> century and lasted till the early 1990's, just about the time when Internet became a major digital driver (Cortada, 2012). The second phase started with the advent of the Internet Age. Though Internet existed in the 1970's, wide spread adoption of this technology started in the 1990's. Three events in the 1980's triggered this, introduction of networking by Cisco, arrival of Personal Computers by IBM and introduction of Desktop Computing Operating System by Microsoft. These events transformed the world by linking computing and network and the evolution of new forms of computing. The computing power got more and more distributed with faster computers. The subsequent phases started with the replacement of micro-computers with powerful Desktops, development of Gaming technology and more recently adoption of the Mobile technology. Technologies enabling Digital Transformation include Cloud Computing, Mobile Computing, Big Data, Data Sciences and Business Analytics, and Social Computing. These are explored further in this section.

### **Cloud Computing:**

Migration to “the Cloud”, implies movement of data from servers that are located on premise to another remote facility that provides shared services of storage (Mahmood, 2013) and computing power, resulting in a drop in storage costs, computing power costs, and providing instant access from anywhere to vast amounts of data via multitude of devices, resulting in global collaboration, and accelerating speeds of doing business. The cloud technology has changed over the years with improved security protocols. This has led to creation of metadata-based frameworks, architecting of scientific data systems in the Cloud, and migration of systems to Private, and Public Cloud. Private refers to hosting the cloud within organizational boundaries, whereas Public refers to cloud infrastructure outside the organizational boundaries. Another form is Hybrid Cloud wherein some systems are hosted on Public and some in Private Cloud settings. Sustainability advantages from Cloud Technologies are Operational flexibility, business scalability, and standardization of technology. It has also enabled multiple “As-a-Service” revenue models such as Software (SaaS), Infrastructure (IaaS), Platform (PaaS), and Integration (IPaaS) as a service, with the user paying only for the services provided.

One of the very popular Cloud applications is Customer Relationship Management (CRM) with enterprise solutions such as Sales Force, and Sugar CRM. Adoption of CRM has transformed the Customer Relationship Management function in organizations through cross- functional integration, collaboration and application of Predictive Analytics.

### **Mobile Computing:**

Mobile computing has proved to be an extremely disruptive technology innovation and has significant Sustainability impacts. In a recent Pew Research Centre release (Smith, 2019), nearly two thirds of Americans now own a smartphone and over 7% of Americans rely heavily on a smartphone for online access. It is the first place for seeking information on breaking news, and for sharing information. Some of the technology aspects of Mobile Computing include Text Messaging, Internet use, Voice / Video calls, email, video, music access, and SNS. Cloud also

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plays a role here by providing internal systems access over multitude of mobile devices. With availability of faster bandwidths, large quantities of data can now be accessed over these devices. Some of the direct Sustainability impacts of this technology are Field-Force Productivity improvements, Workforce Automation, and Enterprise collaboration.

#### **REVIEW OF LITERATURE:**

Abdul-Rashid, S., Sakundarini, N., Raja Ghazilla, R. and Thurasamy, R., 2017, Digitalization is a very broad concept (Hagberg et al., 2016) from both standpoints of technology and business (Denicolai et al., 2021). It covers a wide range from a basic level (such as operating a computer or using the internet) to the adoption of modern technology (such as artificial intelligence, cloud computing, or big data) (Doyle and Cosgrove, 2019). Additionally, digital transformation refers to the “process that aims to improve an entity by triggering significant changes to its properties through combinations of information, computing, communication, and connectivity technologies” (Vial, 2019, p. 118). However, Osarenkhoe and Fjellström (2021) defined digitalization as an approach to integrating digital technology into everyday life, which can create value through existing and new technology.

Berryman, D., 2019, Some crucial drivers pursue SMEs to implement digitalization in their organization, such as “Internal efficiencies, better collaboration, cost reductions, and new product and service offerings” (Jensen et al., 2016, p. 4). Since “digital technology supports intelligence gathering, cost reduction, and audience extension, SMEs could increase their competencies and excel in the digitalized organization environment” (Quinton et al., 2017, p. 427).

North et al. (2019, p. 243) proposed a framework which they named ‘DIGROW’ (figure 1) to fill the gap in “understanding and development of capabilities for digital transformation in the context of SMEs’ business growth. They argued, “digital transformation is a learning process that requires integrating technology, business and learning strategies in an entrepreneurial-oriented organization” (Ibid, p. 245). Derqui, B., 2020. Towards sustainable development: Lack of explicit strategy and lack of proper communication between managers and employees are the most crucial problem in SMEs that ‘DIGROW’ tries to solve (Ibid).

Environment plays a vital role in the firm's sustainability (Lo et al., 2021). New technologies assist the firms in growing fast and extending their business to other markets smoothly (Ibid). Nonetheless, they create many new competitors, making it hard for the firms to effortlessly secure sustainability (Ibid).

#### **OBJECTIVES:**

- Employees are interested in working for digital leaders, seeking the best digital opportunities, thus creating an imperative for businesses to up the digital game for retaining and attracting talent.
- Digitally maturing organizations are more comfortable taking risks than the less digitally

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mature peer organizations.

- Organizations across the board are using Digital to improve Efficiency and Customer Experience, but higher maturity organizations differentiate by using Digital to transform business and moving ahead of competition.
- The pace of change in businesses has been accelerating leading to faster adoption of Digital Transformation, to tackle the “tectonic shifts in industries, growth opportunities.

#### **METHODOLOGY:**

For this research paper, databases such as Google Scholar and Cross Reference were searched to collect journal articles. Primary data collection for totally 150 for male 90 and female 60. A total of 70 papers and reports were reviewed and articles were searched using keywords. Several sources have been used for collating data to establish the link between Digital Transformation and Sustainability. These included Harvard library resources including Hollis and Hollis+, internet sources such as Google Scholar, and an anonymous corporate survey. There are four aspects to the Methods used in the capstone. The first was a review of over 200 digital case studies. This was collated from various sources including book reviews (representative list of books in Box 1), and internet searches (websites of large Consulting companies and others). The second was a survey conducted to get corporate perspectives on Digital Transformation and Sustainability. This was an anonymous survey to middle management and senior management executives from various functional areas of about 150 Fortune organizations. The third aspect covered understanding of typical business situations. For this case scenarios were used as a proxy. A comprehensive study of cases from leading management schools and Consulting companies were considered, resulting in a review of over 400 case scenarios. The fourth aspect was review of Digital frameworks proposed by, among others, various Consulting companies and included research and white papers from Harvard library resources and consulting company websites. Real life case studies on Digital Transformation were studied from websites of various Consulting companies. This was then collated in a table form to study common elements that relate to the Sustainability aspects of business.

#### **SCOPE OF THE STUDY:**

The data collected from the surveys, reference books, and research papers were collated and analyzed to seek common themes between Digital parameters, Business processes and Sustainability.

Digital Transformation rather than the inter-relationship between traditional Information Technology technologies such as Enterprise applications and Business Processes.

impacts of Digital Transformation elements which are Social Computing, Mobile Computing, Analytics, Customer Relationship Management and Cloud Computing, on Business Processes. Business Processes and impact types were then characterized in terms of Sustainability impacts, where applicable.

The survey data was used to validate the findings from research and an analysis of relationships between Digital Transformation factors, Functional areas, and Sustainability elements.

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### **FINDINGS AND SUGGESTIONS:**

Regarding the research limitations, future research could select a specific industry to investigate whether digitalization could directly affect the firm's sustainability in SMEs. Furthermore, future studies should include more SMEs and more countries to be capable of providing more data for creating a valuable paper. Moreover, future research could use other methods such as ethnographic study and quantitative methods. Data and Results, presented in this section, are based on two parts. The first is organizational perceptions about Business Problems. Case problems with elements of Sustainability are considered as a proxy for business situations. The second is the Business Case for Digital Transformation as a driver for Sustainability. Digital Transformation studies, Frameworks and Case Studies are used as a proxy for creating the Business case. Impacts and result areas that had some Sustainability elements were selected from these studies. A survey was conducted, as part of this capstone, in the form of emails sent to Division, Functional and Sustainability heads of about 100 Fortune companies. The companies selected for the study were US and India headquartered and some of the industries covered were: Manufacturing, Agriculture and Mining, Computers and Electronics, Healthcare, Pharmaceutical, Biotech, Retail, Banking, Media, etc. Many of the email responses received indicate that several of the respondents directed the questionnaire to the Sustainability group of their organization, for a response. This is also borne out by the larger proportion of survey participants that are either from Sustainability group or Environmental, Health and Safety groups – 20 of the 50 responses received.

### **CONCLUSION:**

In Responses to the capstone survey were received from multiple functional groups of the responding organizations. Several of these are from the Sustainability group of a company (Sustainability / Environmental Health, and Safety group). Other responses are from Operations, Marketing, Finance, Strategy, Procurement, Supply Chain, Engineering and Research, Public Affairs and Communication. The respondents are from large Fortune companies and represent a cross-section of industries. The Capstone Research findings are somewhat similar to findings from other researches, especially in relation to Digital Transformation. The top four responses to Business benefits from Digital Transformation are Improving Customer Experience, Improving Operational Efficiencies, Building Competitive Advantage, and Cost Savings. Responses along similar lines are seen for Adoption Drivers of CSR. These are Improving Operational Efficiencies, Improving Customer Experience, and Building Competitive Advantage. However, Risk Management, Brand Differentiation take precedence to Cost Savings in case of CSR adoption drivers. One response has been specific to identify Reputation Risk Management as a driver. The above responses are therefore in line with several other studies on Digital Transformation.

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## **THE IMPACT OF LEADERSHIP PRACTICES ON EMPLOYEE WELL-BEING AND ATTRITION**

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***Abstract: Organizational success depends on the retention and well-being of its workforce. A better work atmosphere, increased job satisfaction, and decreased attrition are all significantly impacted by effective leadership. The impact of several leadership philosophies on workers' well-being is examined in this chapter, with a focus on transformational, servant, and supporting leadership. It outlines tactics that managers can use to encourage mental and physical health, increase involvement, and foster a supportive and inspiring work environment. Organizations may increase productivity and reduce turnover by putting employee well-being first, which will ensure long-term sustainability and growth.***

***Key Words: Leadership, Employee Well-Being, Job Satisfaction, Attrition, Organizational Culture, Transformational Leadership, Employee Engagement.***

### **INTRODUCTION**

The retention and well-being of employees have emerged as crucial issues for contemporary businesses. The general physical, mental, and emotional well-being of workers in the workplace is referred to as employee well-being. It includes stress management, work-life balance, job satisfaction, and a positive work atmosphere. The World Health Organisation (WHO) defines well-being as "a state in which an individual realizes their abilities, can cope with normal stresses of life, can work productively, and can contribute to their community."

High attrition rates disrupt workflow and result in significant financial and operational costs for businesses. Leaders who prioritize employee well-being can create a positive workplace culture that enhances job satisfaction, productivity, and loyalty. This chapter explores the crucial connection between leadership, employee well-being, and retention, highlighting how various leadership styles can contribute to a thriving and stable workforce. A supportive and effective leadership approach is crucial in ensuring that employees feel valued, motivated, and engaged in their work environment.

## **EMPLOYEE WELL-BEING**

The general condition of a worker's physical, mental, and emotional well-being at work is referred to as employee well-being. It includes several things, including stress management, work-life balance, job satisfaction, and a positive work atmosphere.

### **Key Components of Employee Well-Being:**

- **Physical Well-Being:** Workplace ergonomics, wellness initiatives, and policies that support a healthy lifestyle must be available to employees. The provision of exercise centers, nutritious food options, and preventative healthcare programs can greatly enhance general well-being.
- **Mental Health:** Stress at work can result in disengagement, burnout, and decreased productivity. Companies should put stress management techniques into place, provide counseling services and other mental health support, and cultivate a psychologically secure environment where staff members can voice their worries.
- **Emotional Well-Being:** Emotional stability is improved by a nurturing workplace that values mutual respect, candid communication, and acknowledgment of accomplishments. Positive emotional climates in the workplace are facilitated by leaders who actively listen and offer support.
- **Social Well-Being:** A sense of belonging is influenced by collaborative efforts and solid working connections. Promoting teamwork, inclusive workplaces, and team-building exercises guarantees that workers feel appreciated and connected to the company.
- **Financial Well-Being:** Stress levels are lower and productivity is higher among employees who feel financially secure. Employees can efficiently manage their financial well-being by receiving resources for financial planning, job stability, and fair compensation.

### **Impact on Organizational Success and Productivity:**

The general performance of the company, employee engagement, and productivity are all closely related to employee well-being. Prioritizing employee well-being has various advantages for organizations:

- **Higher Productivity:** Workers with good physical and mental health typically exhibit improved performance, greater levels of engagement, and effective contributions to the accomplishment of company objectives. An engaged workforce is more productive because they are less distracted and more focused.
- **Reduced Absenteeism:** Stress, illness, and burnout frequently lead to higher absenteeism. Organizations can increase employee attendance and decrease sick leave by supporting mental health support, flexible work arrangements, and wellness initiatives.
- **Increased Job Satisfaction:** Workers are happier when they perceive that their supervisors and the work environment regard, respect, and support them. Workers are more driven and dedicated to their jobs when they find fulfillment and significance in them.
- **Higher Retention Rates:** Companies that make investments in their workers' well-being foster a sense of loyalty and job security in their workforce. Employee turnover rates and

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the related expenses of recruiting and onboarding new staff are decreased when workers believe that their well-being is valued.

- **Better Organisational Reputation:** Employers who promote well-being grow their employer brands and draw in top talent. Businesses with a positive workplace culture provide themselves a competitive edge in the labour market and attract top talent.

## **THE EFFECTS OF LEADERSHIP STYLES ON EMPLOYEE WELL-BEING**

### **Leadership Styles**

Leadership styles are the unique methods and actions that leaders use to persuade, inspire, and direct others toward accomplishing shared objectives. Leaders' distinct communication, decision-making, and team interaction styles are reflected in these styles. Leadership styles significantly impact employee well-being in various ways:

#### **Transformational Leadership:**

To inspire and motivate staff to go above and beyond, transformational leadership seeks to create a strong corporate culture and a common vision. This leadership approach stimulates creativity and innovation, builds employee excitement and trust, and supports professional and personal growth. By emphasizing long-term growth and development over short-term goals, it enables people to make significant contributions to the company's success.

Transformational leaders improve the well-being of their workforce by cultivating a sense of purpose and achievement. Their strategy increases workers' sense of empowerment, involvement, and value, all of which improve job happiness. Increased motivation, greater levels of dedication and trust towards the company, and less stress as a result of ongoing support and direction are all advantages for employees who get transformational leadership.

#### **Servant Leadership (Employee-Centric Approach):**

Employee needs and development are given precedence over hierarchical power under servant leadership, and leaders who embrace this style act as mentors, fostering the personal growth of their team members, encouraging collaboration and teamwork, and placing a strong emphasis on social responsibility and moral decision-making. Through polite and honest communication, servant leadership creates a welcoming work environment that is marked by a strong sense of community, improved employee loyalty, and higher employee well-being and morale.

#### **Supportive Leadership:**

Supportive leaders put their employees' emotional and mental well-being first by showing empathy and offering assistance, recognizing and addressing workplace pressures, making sure that tools for mental wellness are available, and encouraging a positive work-life balance. Promoting work-life balance through flexible work schedules, encouraging staff to take required breaks and time off, and creating a healthy work environment that reduces burnout are all ways that supportive leaders increase employee satisfaction and retention.

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### **Autocratic Leadership:**

Due to the lack of autonomy and ongoing pressure, autocratic leadership can have a detrimental effect on employee well-being by fostering a stressful and anxiety-inducing work environment. Employees' mental health may suffer as a result of this lack of input and control, which can also result in low morale, feelings of helplessness, and lower job satisfaction.

### **Authentic Leadership:**

Employee well-being is greatly impacted by authentic leadership, which is defined by self-awareness, integrity, and an emphasis on follower growth. Genuine leaders raise employee engagement, lower stress levels, and boost general job satisfaction by cultivating trust, forging close bonds with coworkers, and establishing a positive work atmosphere where staff members feel appreciated and respected. An environment where workers can flourish and realize their full potential is fostered by this positive leadership style.

### **Democratic Leadership:**

Democratic leadership has a major positive impact on worker satisfaction. Through open communication, empowerment, and team member participation in decision-making, this approach develops a feeling of purpose and ownership. Increased job satisfaction, higher morale, and a greater sense of team belonging result from this, all of which enhance the productive and encouraging work environment that promotes employee wellbeing.

Employee well-being is greatly impacted by the leadership style used. Inspiration, empowerment, and an emphasis on the development and well-being of employees are hallmarks of transformational and servant leadership styles, which reliably produce favorable results. These approaches promote a happy workplace, boost worker engagement, and enhance job satisfaction and general well-being. Conversely, authoritarian leadership can hurt workers' well-being by increasing stress, decreasing job satisfaction, and possibly harming mental health due to its focus on control and low employee involvement.

Ultimately, effective leadership that prioritizes employee well-being creates a positive and supportive work environment where individuals can thrive and contribute to organizational success. Democratic leadership has a significant impact on employee well-being by encouraging collaboration, empowering employees, and valuing their input.

## **STRATEGIES FOR LEADERS TO ENHANCE EMPLOYEE WELL-BEING**

### **1. Promote Work-Life Balance:**

A multifaceted strategy is needed to prioritize the health and wellness of employees. Employees may easily access services that support their physical health when complete wellness programs are offered, such as on-site exercise centers, healthy meal alternatives in cafeterias or vending machines, and routine health tests. A culture of well-being is promoted by promoting healthy behaviors through programs like wellness challenges, health education seminars, and healthy workplace activities like stress management seminars or walking groups. The most important thing is to create a safe and healthy work atmosphere. Providing ergonomic workstations to prevent injuries, making sure there is enough lighting and ventilation to encourage physical comfort and lessen eye strain, and putting safety procedures

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in place to decrease workplace dangers are all examples of this. A more engaged and healthier workforce, lower absenteeism, and higher productivity can result from companies showing their commitment to their workers' general well-being by making investments in these areas.

#### **2. Foster a Supportive and Inclusive Culture:**

Proactive steps to address diversity and inclusion, encourage open communication, and reduce workplace stress are necessary to cultivate a welcoming and inclusive culture. Proactively addressing diversity and inclusion entails putting in place procedures and policies that provide equal chances for all workers, irrespective of their backgrounds, and fostering an environment where everyone is treated with respect and worth. This includes programs like employee resource groups, diversity recruitment tactics, and training on unconscious bias. Establishing frank and open lines of communication is essential to fostering a sense of community and trust. Regular team meetings, feedback systems, open leadership communication, and establishing a secure environment where staff members may freely express their opinions and concerns can all help achieve this. Reducing stress at work necessitates a multifaceted strategy that includes activities like stress management programs (such as yoga and mindfulness workshops), easily accessible employee support programs (which provide private counseling and support), and conflict resolution training to give staff members the tools they need to handle conflicts in the workplace productively. Organizations may create an encouraging and welcoming workplace where all workers can succeed by proactively tackling these three interrelated issues: stress management, open communication, and diversity and inclusion.

#### **3. Recognize and Reward Employees:**

Employee recognition and rewards necessitate a consistent, multidimensional strategy that extends beyond monetary pay. For employees to grow and develop, constant feedback—both constructive criticism and positive reinforcement—is crucial. This feedback should be immediate, detailed, and encouraging, with an emphasis on impact and behaviors rather than personality. It is essential to provide competitive pay and benefits packages to draw in and keep top people. Along with pay that meets industry norms, this also includes a full range of benefits that cater to the needs of workers, including paid time off, retirement plans, health insurance, and other bonuses. In conclusion, acknowledging and applauding staff accomplishments and milestones, no matter how minor, is essential for raising spirits and cultivating a feeling of success. Team celebrations, company-wide awards, and written and verbal praise are a few examples of this. Employers show their appreciation for their workers' contributions and foster an inspiring and stimulating work environment by regularly giving feedback, rewarding achievement, and offering competitive incentives.

#### **4. Develop Leadership Skills:**

Developing employees' leadership abilities necessitates a culture of ongoing learning, professional growth, and empowerment. Encouraging employees entails assigning them worthwhile tasks and giving them the freedom and tools they need to finish them. This encourages self-assurance, a sense of ownership, and the opportunity to develop new abilities. Offering professional development opportunities is crucial for the advancement and progress



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of employees. Establishing mentorship programs that match seasoned workers with those in need of direction is one way to do this, as is providing a range of training courses, conferences, and workshops pertinent to their positions and career goals. Developing a culture of ongoing learning and development is also essential for long-term success. This entails promoting a culture where learning is respected and encouraged, giving staff members access to online learning tools, and encouraging them to pursue additional education. Investing in these areas helps companies build a workforce that is more talented and flexible while also fostering an environment where workers feel appreciated, challenged, and inspired to realize their full potential.

#### **5. Prioritize Employee Health and Wellness:**

Setting employee health and wellness as a top priority necessitates an all-encompassing approach that takes into account environmental, emotional, and physical aspects. Providing wellness initiatives gives staff members easy access to tools to promote their health. Exercise can be made more convenient with the help of on-site fitness centers or discounted gym subscriptions. Better nutrition and healthier choices during working are supported when cafeterias or vending machines offer nutritious food options. Frequent health tests, such as biometric screenings, flu vaccines, or blood pressure checks, can assist staff in spotting possible health problems early. A culture of well-being is promoted by promoting healthy behaviors through a variety of activities, including outside of official programs. Employees may be inspired to adopt healthier lifestyles via wellness challenges like as step challenges or healthy recipe competitions.

### **THE IMPACT OF LEADERSHIP ON ATTRITION RATES**

Employee attrition rates are significantly influenced by leadership. Poor leadership can push people away, but effective leadership strategies can drastically lower attrition. This link is influenced by multiple factors:

- **Employee Engagement:** Motivating executives help their staff feel more connected to the company and have a feeling of purpose. It is less probable for engaged workers to look for alternative options. Employees who are disengaged, frequently as a result of subpar leadership, are more likely to quit.
- **Job Satisfaction:** Clear instructions, acknowledgment of contributions, and a nice work atmosphere are all factors that lead to greater job satisfaction. Employees who are happy in their positions are less inclined to hunt for other positions. Increased turnover and discontent can result from poor leadership, which is characterized by micromanagement, a lack of acknowledgment, or unfair treatment.
- **Growth Opportunities:** Leaders show their dedication to their staff members' development by offering training, opportunities for growth, and mentorship. This motivates staff members to remain with the company in order to further their careers. When there aren't enough prospects for advancement, which is frequently an indication of bad leadership, workers may go for work elsewhere.

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- **Work-Life Balance:** An environment that is healthier and less stressful is created by leaders who promote work-life balance by providing flexible schedules, fair workloads, and time off. Employees are less prone to burnout and look for other work when they feel encouraged to maintain a healthy work-life balance. Leaders who disregard work-life balance may be a contributing factor to high attrition and burnout.
- **Company Culture:** The culture of the organization is largely shaped by its leaders. Talent is drawn to and retained by an inclusive and upbeat culture that is promoted by capable leadership. High attrition rates might result from a poisonous or unfavorable culture, which frequently results from subpar leadership.
- **Respect and Trust:** Positive and encouraging work environments are produced by leaders who foster respect and trust among their staff. Employees are more inclined to stick with a company when they feel appreciated and respected. On the other hand, a lack of respect and trust, which is frequently a sign of subpar leadership, can alienate workers.

### **CONCLUSION**

The physical, mental, emotional, social, and financial well-being of employees is essential for their happiness as well as the success of the company. Businesses that put employee well-being first see higher retention, lower absenteeism, and increased productivity. Good leadership is essential; transformational, servant, honest, and democratic leadership philosophies promote productive workplaces and increase worker engagement. On the other hand, well-being may be adversely affected by autocratic leadership. Organizations may create a vibrant workforce and achieve long-term success by putting measures into place that support work-life balance, inclusion, health, recognition, and leadership development. Putting money into workers' well-being is not only morally right but also advantageous from a business standpoint.

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## **PROMOTING WORK-LIFE BALANCE IN THE IT SECTOR: INITIATIVES, CHALLENGES, AND FUTURE DIRECTIONS**

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***Abstract:** The IT sector has witnessed significant growth over the past few decades, bringing with it a host of challenges related to work-life balance (WLB). This chapter explores various work-life balance initiatives implemented by leading IT companies and discusses the evolving expectations of employees regarding flexibility, well-being, and career growth. Drawing on examples from companies like Infosys, Tata Consultancy Services (TCS), Wipro, and Cognizant, the chapter sheds light on the strategies employed to foster a healthy work-life balance. Additionally, the chapter discusses challenges faced by employees, especially women, and the future trends that will shape the IT industry's approach to work-life balance.*

***Keywords:** Work-life balance, IT sector, employee well-being, flexible work arrangements, remote work, wellness programs.*

### **1. Introduction**

Work-life balance (WLB) is crucial for maintaining the overall well-being of employees, particularly in the demanding and fast-paced environment of the Information Technology (IT) sector. Work-life balance refers to the equilibrium between personal life and professional responsibilities, allowing individuals to effectively manage both aspects without one overshadowing the other. With long working hours, high expectations, and the constant need for adaptation to new technologies, work-life balance becomes an even more pressing concern. This chapter examines how leading IT companies address WLB and highlights key strategies that contribute to employee satisfaction, retention, and productivity.

Work-life balance initiatives have long been integral to HR policies in many organizations. These initiatives benefit both employers and employees.

Benefits for Employers include:

- Lower staff turnover and increased returns on training
- Reduced absenteeism
- Improved employee morale and commitment
- Reduced stress and improved productivity

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- A more flexible workforce
- Increased ability to attract and recruit staff
- Enhanced corporate image

Benefits for Employees include:

- Ability to manage work and personal commitments
- Improved personal and family relationships
- Flexible working arrangements, reducing work overload
- Increased ability to remain employed
- Increased opportunities for career advancement
- Improved health and well-being
- Increased motivation and job satisfaction

## **2. Work-Life Balance Initiatives in Leading IT Companies**

Several IT companies have recognized the importance of work-life balance and have implemented programs aimed at enhancing employee well-being. These initiatives not only focus on flexible work schedules and remote work options but also emphasize emotional and physical health.

### **2.1 Infosys**

Infosys has been at the forefront of promoting employee well-being through initiatives such as the Health Assessment and Lifestyle Enrichment (HALE) program. This program includes flexible work arrangements, access to professional counseling, yoga and meditation classes, and regular health check-ups. Infosys has also introduced the "iMother" app to support employees returning from maternity leave. The app serves as a comprehensive platform offering insights, blogs, videos, and resources designed to help mothers stay connected and balanced during their transition back to work.

### **2.2 Tata Consultancy Services (TCS)**

Tata Consultancy Services (TCS) prioritizes employee well-being by fostering a culture that values work-life balance and holistic health. The organization has implemented initiatives such as flexible work schedules, work-from-home options, emphasis on regular breaks, and generous vacation policies. Programs like "Fit4Life" encourage employees to adopt healthier lifestyles, while performance reviews help manage workloads effectively. TCS also emphasizes emotional well-being through resources like nudge technology to promote physical activity and one-on-one online counseling for mental health support. By focusing on productivity and quality over long hours, TCS ensures that employee well-being is ingrained in its organizational ethos.

### **2.3 Wipro**

Wipro Chairman Rishad Premji emphasizes the importance of work-life balance, a value that Wipro actively promotes through various initiatives. The company offers flexible work arrangements, including remote work options and flexible hours, along with generous paid time off, parental leave benefits, and a culture that respects personal time. Wipro also focuses on managing workloads and encouraging breaks to ensure employees can maintain a healthy balance. As workplace dynamics evolve, companies are recognizing the growing preference for flexibility, especially among

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younger generations like millennials and Gen Z. To meet these expectations, organizations are introducing expanded benefits, such as remote work options and unlimited vacation policies, to provide a more differentiated and fulfilling employee experience.

#### **2.4 Cognizant**

Cognizant fosters work-life balance through initiatives such as flexible work hours, remote work options, employee wellness programs, and encouragement to take time off. The company emphasizes open communication and support for personal needs, enabling employees to align their work schedules with their personal lives while maintaining productivity. Through its "Be Well" program, Cognizant provides comprehensive physical, mental, and financial support, reinforcing its commitment to holistic well-being and a supportive culture. Associates and managers are encouraged to prioritize well-being, utilize available resources, and make time for personal priorities with benefits like paid time off, leave policies, and flexible work arrangements.

#### **2.5 Accenture**

Accenture embraces flexible work arrangements, offering employees the freedom to choose when, where, and how they work, while fostering meaningful connections to drive innovation and create positive change. In the Philippines, Accenture's "Nanays in IT" program exemplifies this commitment by empowering mothers to build successful careers in technology. Through tailored online courses, mentorship opportunities, and a schedule designed to meet their unique needs, the program helps bridge the gender gap in IT by providing technical expertise and instilling confidence in women for rewarding careers in the tech industry.

#### **2.6 HCL**

HCLTech is committed to unlocking human potential by creating inclusive and sustainable work environments that prioritize individuals at the core of innovation. By integrating a human-centric approach with Generative AI, the company fosters collaboration and engagement while transforming workplaces into dynamic ecosystems that enhance productivity, creativity, well-being, and work-life balance. Employees benefit from initiatives such as flexible work hours, hybrid workspaces combining office and remote options, in-house daycare services, transportation reimbursements, and comprehensive paid time off policies. Additional support includes extended leave for personal or health needs and wellness perks such as gym discounts, health coaching, flu shots, and financial wellness programs, all designed to empower employees and promote holistic well-being.

#### **2.7 Hexaware**

Hexaware emphasizes the importance of employee experience in driving digital transformation, recognizing its impact on engagement, productivity, and retention. By adapting to evolving employee expectations, the company implements flexible and agile workplace strategies that support work-life balance and enhance performance. With a growing focus on remote work and flexible arrangements, Hexaware leverages advanced digital tools to ensure efficient remote operations, prioritize employee well-being, attract and retain top talent, and maintain seamless business continuity.



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### **2.8 IBM**

Traditionally, organizations have focused on perks such as salary raises, bonuses, free food, and outings to enhance employee experience and show appreciation. However, with growing challenges around work-life balance and the need for competitive skillsets in a technology-driven world, the focus is shifting. According to IBM, a positive employee experience delivers key benefits, including improved retention, as happy employees are more likely to stay, reducing turnover costs. It also boosts creativity, with fulfilled and confident employees contributing innovative ideas and thriving in recognition-driven environments. Engaged employees enhance customer satisfaction by improving frontline interactions, reflecting their positive outlook toward the organization. Furthermore, organizations committed to a strong employee experience often see increased productivity and quality of work, leading to better business outcomes and profitability.

### **4. Challenges and Future Trends**

#### **4.1 The Challenges of Work-Life Balance in the IT Sector**

Despite the increasing number of initiatives to support WLB, employees in the IT sector continue to face challenges. These include long working hours, the pressure to meet deadlines, and the difficulty of disconnecting from work in a constantly connected environment. These pressures can lead to stress and burnout, especially for women balancing career and family responsibilities.

#### **4.2 Future Directions: The Role of Flexibility and Technology**

The future of WLB in the IT sector will be shaped by the growing demand for flexible work arrangements. Advances in technology, such as remote work tools and digital collaboration platforms, will continue to support the shift toward flexible work hours. Additionally, organizations will need to invest in well-being programs that cater to the emotional, physical, and mental health of employees.

### **5. Conclusion**

As the IT sector evolves, work-life balance will continue to be a critical factor in employee satisfaction and retention. Companies that prioritize flexibility, well-being, and a supportive work culture are likely to see increased productivity and engagement from their workforce. The future of work in the IT sector will be increasingly shaped by a commitment to fostering balance and supporting employees' needs both inside and outside the workplace.

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## **GREEN HRM PRACTICES IN THE INDIAN IT SECTOR: INTEGRATION OF SUSTAINABILITY IN HUMAN RESOURCE MANAGEMENT**

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**Abstract:** As the world focuses more on sustainability, businesses are using Green Human Resource Management (Green HRM) practices to make their operations more environmentally friendly. Green HRM incorporates eco-friendly policies into human resource functions like recruitment, training, performance management, and employee engagement to promote sustainability. In India, particularly within the IT sector, the integration of Green HRM practices remains an emerging trend with significant potential. This study aims to explore the status, challenges, and adoption of Green HRM practices in Indian IT companies, highlighting the initiatives implemented, their awareness levels, and their effectiveness in promoting sustainable practices within organizations. Through a comprehensive review of literature and case studies of leading IT firms, this paper investigates how Green HRM contributes to organizational sustainability, employee engagement, and competitive advantage in India.

**Keywords:** Green HRM, IT Sector, Sustainable HR Practices, Environmental Responsibility

### **Introduction**

In response to the growing environmental challenges, businesses worldwide are incorporating sustainable practices into their operations. One of the most promising avenues is the integration of Green Human Resource Management (Green HRM) into HR functions. Green HRM refers to the strategies and policies that integrate environmental sustainability with human resource practices. This approach aims to reduce the environmental footprint while fostering a culture of environmental responsibility among employees.

In the Indian context, Green HRM is gradually gaining recognition, particularly within the IT sector, where there is a strong emphasis on digitalization and innovation. Green HRM practices in IT organizations are designed to align business goals with environmental objectives, creating a win-win situation for both the organization and society at large.

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### **Literature Review**

This study explores the concept of Green Human Resource Management (GHRM) and its role in addressing environmental challenges while fostering sustainable development. A review of 70 articles from 2008 to 2020 highlights the importance of green training, teamwork, management support, and a green organizational culture. The findings suggest that GHRM is still evolving, offering valuable insights into current practices and future trends. This research serves as a guide for advancing GHRM and bridging knowledge gaps in the field (Muhammad Hamza Khan, Syaharizatul Noorizwan Muktar 2021). Green HRM (GHRM) practices by Indian IT firms, including green recruitment, training programs, and performance management systems that focus on sustainability. These initiatives aim to foster eco-friendly behaviors and enhance employees' environmental competencies (Ahmed et al. 2023). Organizational sustainability has become an increasingly critical aspect of business operations in the modern era, with companies seeking to balance their financial, social, and environmental obligations and opportunities (Mehta & Chugan, 2015). The Indian IT sector, known for its rapid growth and technological advancements, is no exception to this trend. Integrating sustainability practices into human resource management has emerged as a key strategy for IT firms to enhance their environmental and social impact while maintaining profitability. Green human resource management refers to the integration of sustainability principles into various HR functions, such as recruitment, training, and performance management. (Mehta & Chugan, 2015). By adopting green HRM practices, IT companies in India can foster a culture of environmental awareness among their employees, encouraging them to adopt eco-friendly behaviors both within the workplace and in their personal lives. Organizational culture is recognized as a crucial factor in the shift towards sustainability, as it shapes the values, attitudes, and behaviors of employees. (Raghuwanshi & Acharya, 2020) Sustainability must be embedded into the core of the organization, rather than being treated as an add-on, for it to be truly effective. (Nisar QA, Haider S, Ali F, Jamshed S, Ryu K, Gill SS 2021 ) Green human resource practices improve in-role green behavior by increasing worker capability (acquiring applicable skills and competencies) and motivation (promoting optimistic attitudes and willingness to participate in green environment-related activities).

### **Objectives of the Study**

The primary objectives of this study are:

- To study the Green HRM strategies in the Indian IT sector.
- To evaluate the initiatives adopted by Indian IT companies in promoting environmental sustainability through HR practices.
- To explore the challenges faced by these organizations in implementing Green HRM practices.

### **Research Methodology**

This study employs a theoretical framework supported by secondary data gathered from various academic journals, corporate sustainability reports, and industry publications. The study focuses

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specifically on the IT sector in India, examining Green HRM practices across a range of companies to provide insights into their sustainability initiatives. Case studies from leading Indian IT companies like Infosys, Wipro, TCS, and others are included to offer practical examples of how Green HRM is being integrated into organizational practices.

#### **Overview of Green HRM Practices**

Green HRM is built on several core practices that seek to align human resources with sustainable development goals. These practices are:

**Green Recruitment and Selection:** This involves hiring employees who are not only skilled but also possess environmental awareness and a commitment to sustainability. IT companies increasingly focus on recruiting individuals who understand and embrace eco-friendly practices.

**Green Training and Development:** Organizations provide training programs to educate employees on environmental sustainability, energy conservation, waste reduction, and other green practices. For instance, Wipro's green training initiatives aim to raise awareness about energy efficiency and waste management.

**Green Performance Management:** Performance evaluations in Green HRM go beyond traditional metrics by including sustainability goals, such as the reduction of carbon footprint and the implementation of green initiatives.

**Green Compensation and Rewards:** Incentives and rewards are provided to employees who contribute significantly to environmental sustainability. These can include bonuses for reducing the company's energy consumption or achieving environmental performance targets.

**Green Employee Engagement:** Involves fostering a culture where employees actively participate in sustainability programs, such as tree plantation drives, reducing paper usage, or adopting eco-friendly commuting options.

#### **Green Practices Adopted by Indian IT Companies**

The Indian IT sector has embraced a variety of Green practices aimed at minimizing its environmental footprint and promoting sustainability.

Company	Program Name	Strategy
Infosys	Green Workplace Initiatives	Focuses on reducing energy consumption, waste management, and promoting green commuting options for employees.
Wipro	The Eco Eye	A comprehensive sustainability program targeting water conservation, reducing carbon footprint, and minimizing e-waste.

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Company	Program Name	Strategy
TCS	Green IT	Aims at reducing energy usage by implementing energy-efficient data centers and promoting paperless operations.
Cognizant	Sustainability at Work	Involves employee participation in green activities such as tree plantation, waste management, and resource conservation.
HCL Technologies	Green Business Practices	Focuses on integrating sustainability into business processes and encouraging employees to adopt green behaviors both in and outside the workplace.

**Challenges in Implementing Green HRM in the IT Sector**

Despite the promising benefits, Indian IT companies face several challenges in implementing Green HRM practices. Below are the key challenges:

- **Lack of Awareness and Commitment:** Many employees and leaders in the IT sector are unaware of the importance and benefits of Green HRM. Without sufficient awareness, there is often a lack of commitment to adopting and sustaining eco-friendly practices.
- **Resistance to Change:** Employees and stakeholders may resist transitioning to green policies due to fear of added responsibilities, perceived inconveniences, or a belief that such practices may not bring immediate benefits.
- **High Initial Costs:** Implementing green initiatives such as solar power, energy-efficient technologies, or eco-friendly infrastructure requires significant upfront investment, which may deter organizations, especially small and mid-sized IT firms.
- **Infrastructure Limitations:** Many IT companies operate in leased office spaces, limiting their ability to make structural changes like installing renewable energy systems, improving insulation, or upgrading to energy-efficient equipment.
- **Difficulty in Measuring Green Performance:** Tracking and measuring the impact of green initiatives, such as reduced carbon footprint or energy savings, can be complex. Lack of standardized metrics often hinders the evaluation of Green HRM effectiveness.
- **Employee Engagement Challenges:** Engaging employees in sustainability efforts like recycling, reducing energy consumption, and using eco-friendly commuting options can be difficult. Employees may not prioritize such practices amidst their primary work responsibilities.
- **Limited Supplier and Vendor Support:** IT companies rely on external vendors for hardware, software, and other supplies. Finding suppliers who provide eco-friendly products or follow sustainable practices can be challenging.
- **Increased Energy Demands:** The IT sector relies heavily on data centers, which are significant energy consumers. Implementing energy-efficient practices in data centers, such as virtualization or renewable energy integration, requires expertise and investment.

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- **Balancing Remote Work Sustainability:** While remote work reduces commuting emissions, it shifts the energy consumption burden to employees' homes. Balancing sustainability between the office and remote work setups remains a challenge.
- **Regulatory and Compliance Issues:** Adhering to government regulations and sustainability standards can be challenging, particularly when policies vary across regions. Compliance with these regulations often requires additional administrative effort and resources.
- **Cultural and Organizational Barriers:** Embedding green practices into an organization's culture requires a mindset shift. Aligning these initiatives with organizational goals and ensuring they are seen as integral rather than optional can be difficult.
- **Sustaining Momentum and Innovation:** Green HRM is not a one-time effort; it requires continuous innovation and adaptation to new technologies. Sustaining momentum in green initiatives can be challenging in the face of other business priorities.
- **Lack of Incentives:** Employees often lack motivation to actively participate in green initiatives if organizations do not offer clear incentives or recognition for their efforts.
- **Integration with Core HR Practices:** Integrating green practices into traditional HR functions like recruitment, training, and performance management requires significant rethinking of processes and policies.

### **Addressing the Challenges**

To overcome these challenges, IT companies must:

- **Enhance Awareness:** Conduct training and workshops to educate employees on the importance of GHRM.
- **Leverage Technology:** Use AI and IoT to monitor and optimize energy usage.
- **Leadership Commitment:** Assign sustainability-focused roles to senior executives.
- **Promote Collaboration:** Engage with suppliers and stakeholders to build sustainable ecosystems.
- **Incentivize Participation:** Reward employees for contributing to green initiatives.

By addressing these challenges strategically, IT companies can effectively implement Green HRM, benefiting both the environment and organizational performance.

### **Conclusion**

The growing need for sustainability in business practices has led to the emergence of Green HRM as a vital component of corporate strategy, particularly in the Indian IT sector. While several companies are making significant strides in integrating green practices into their HR functions, challenges related to awareness, costs, and resistance to change remain. However, the potential benefits such as improved environmental performance, enhanced employee engagement, and a stronger corporate reputation make Green HRM an essential element for organizations looking to align with global sustainability trends. By addressing the challenges and continuing to innovate, Indian IT companies can lead the way in fostering a sustainable and environmentally responsible workforce.



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## **INITIATIVES TO INCLUDE UNDER REPRESENTED GROUPS IN THE WORKFORCE**

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**Abstract** Initiatives to promote inclusivity for underrepresented groups in the workforce are examined in this chapter. Key DE&I (Diversity, Equity and Inclusion) terminology are defined, and the business case for diversity is emphasized, with a focus on financial gains and creativity. The chapter looks at useful tactics for every stage of the employee lifecycle, including inclusive onboarding, mentorship, and employee resource groups, as well as targeted recruitment and bias reduction in hiring. It emphasizes succession planning, leadership development, career advancement, and the removal of structural obstacles. Importantly, it places a strong emphasis on creating an inclusive culture via psychological safety, inclusive leadership, and diversity training. The chapter examines the particular difficulties faced by those who have multiple marginalized identities, acknowledging intersectionality. Lastly, it emphasizes accountability, data-driven strategies, and real-world examples to illustrate successful DE&I projects, offering a foundation for creating workplaces that are really inclusive.

**Keywords:** Diversity, Equity, Inclusion, Underrepresented groups, Workforce, Workplace, Inclusive workplace

### **Introduction**

In the perpetually shifting global economy of today, cultivating a diverse and inclusive workforce is not only a social obligation but also a business strategy necessity. Take the example of a tech startup that aims for innovative solutions. A workforce that is homogeneous and largely made up of young, male engineers might not have the variety of viewpoints that are essential for comprehending the demands and preferences of a larger market. This narrow perspective can impair innovation, hinder product development, and ultimately affect the company's capacity to effectively compete. Understanding this, the startup makes a concerted effort to hire people from underrepresented groups, such as women in technology, people of different racial and ethnic backgrounds, and people with disabilities.

### **Chapter 1**

The idea of "underrepresented workers" has gained significant attention from companies and organizations worldwide in the increasingly diverse and connected world of today. Members of underrepresented groups are those who are not fairly represented in the workforce, especially in particular industries or at particular seniority levels. These groups frequently include women, members of racial and ethnic minorities, members of the LGBTQ+ community, veterans, people

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with impairments, and those from lower socioeconomic origins.

It is impossible to exaggerate how important underrepresented workers are to the employment sector. For businesses looking to prosper in the contemporary economy, embracing diversity and inclusion is not only a question of social responsibility but also a strategic need. Here's the reason:

Incorporating underrepresented employees is not only a social duty but also a business strategy requirement. This is why it's crucial:

### **1. Increased Innovation and Creativity:**

Diverse perspectives: Workers who are underrepresented provide special experiences, backgrounds, and points of view. This variety of viewpoints encourages innovation and creativity, which improves problem-solving and results in the creation of fresh concepts, goods, and services.

Fighting groupthink: When members of homogeneous teams don't disagree with one another, it can stifle critical thinking and result in bad conclusions. This is contested by including minority voices, which promotes a range of viewpoints and results in stronger solutions.

### **2. Better Ability to Make Decisions:**

Greater variety of insights: Diverse teams are able to make more well-rounded and educated judgments because they have access to a greater variety of data and insights.

Decreased prejudice: Because diverse viewpoints can assist uncover and question presumptions, diverse teams can aid in reducing bias in decision-making processes.

### **3. Enhanced Retention and Engagement of Employees:**

Sense of belonging: Workers are more likely to be engaged and dedicated to their work when they feel appreciated and included. Morale and productivity can be raised by fostering an inclusive workplace where underrepresented employees feel valued and included.

Decreased turnover: Workers are less likely to quit a company if they feel appreciated and valued. By increasing employee retention rates, including underrepresented individuals can lower training and recruitment expenses.

### **4. Better Business Results:**

Increased market awareness: A diversified workforce is better able to comprehend and cater to a wide range of people. Employing underrepresented personnel can help businesses reach new markets and better understand the demands of their clients.

Profitability gains: Studies have indicated that businesses with a diverse workforce have a higher chance of being successful. Businesses can access a larger talent pool and enhance overall business performance by incorporating underrepresented employees.

### **5. Improved Brand Image and Reputation:**

Social responsibility: Businesses that put diversity and inclusion first are thought to be more socially conscious. This can improve their brand image and reputation, drawing in top personnel and customers.

Competitive advantage: Diversity and inclusion are becoming more and more significant to both employees and customers in the modern world. Businesses can have a competitive edge in the

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marketplace by adopting these ideals.

### **Chapter II**

#### **Barriers to the exclusion**

Eliminating deeply rooted barriers at the individual, interpersonal, and structural level, it is necessary to create a truly inclusive workplace for minority workers. Some of the main barriers to inclusion are as follows:

##### **1. Barriers within the system:**

**Bias and prejudice:** This include overt and covert kinds of prejudice against people on the basis of their gender, sexual orientation, race, handicap, or other identities. It may show up in daily encounters, hiring procedures, decisions on promotions, and training availability.

**Lack of Representation in Leadership:** When one group holds a majority of leadership roles, it can make underrepresented people feel excluded. The viewpoints and priorities taken into account during decision-making processes may also be restricted.

**Unfair Opportunity Access:** Underrepresented employees may encounter obstacles in their pursuit of professional networks, high-quality education, and career development chances, which can impede their ability to progress in their positions.

##### **Barriers between people:**

**Small Scale Violations:** These are imperceptible, frequently inadvertent forms of discrimination that can be equally as damaging as overt ones. These can include things like excluding someone from social contacts, making stereotyped remarks, or assuming anything about their heritage.

**Absence of Sponsorship and Mentorship:** It could be challenging for underrepresented employees to locate sponsors and mentors who can offer advocacy, support, and direction. This may restrict their options and impede their ability to advance in their careers.

**Exclusion from Informal Networks:** Social ties and informal networks are essential for professional growth. These networks might not include underrepresented workers, which would restrict their access to opportunities, information, and assistance.

**Personal Barriers:**

**Implicit Bias:** Everyone has implicit prejudices that can affect how they see the world and behave. Unintentional discrimination and the exclusion of minority personnel may result from these biases.

**Stereotypes:** Prejudice and discrimination in the workplace might result from negative stereotypes about particular groups. People may internalize these prejudices, which could have an impact on their ambitions and sense of self.

**Lack of Awareness:** Some people might not be conscious of their own prejudices or the difficulties faced by employees who are underrepresented. This ignorance can impede attempts to establish a more inclusive workplace and prolong marginalization.

##### **Barriers arising from workplace culture:**

**Lack of Psychological Safety:** Workers must be able to voice their opinions and worries without worrying about facing consequences. If underrepresented employees believe their opinions won't

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be respected or heard, they could be reluctant to speak up.

**Dominant Group Norms:** The norms and ideals of the dominant group are frequently reflected in workplace cultures. Because of this, minority employees may find it challenging to fully engage in workplace activities or to feel like they belong.

**Absence of Inclusive Policies and Practices:** Companies must have inclusive policies and practices that promote diversity. This covers items like regulations about parental leave, flexible work schedules, and accommodations for workers with disabilities.

## **Chapter III**

### **Measures to incorporate underrepresented employees**

A multifaceted strategy is needed to create a workplace that is truly inclusive of minority employees. The following are some important projects that organizations can carry out:

#### **Creating a Talent Pipeline That Is Diverse:**

**Examine and update Job descriptions:** Employ language that is inclusive, emphasizing fundamental abilities and steering clear of jargon that could deter particular groups. Emphasize the dedication of your company to inclusion and diversity.

**Diversify Your Sources of Hiring:** Go beyond conventional job boards. Attend career fairs at women's institutions and HBCUs, collaborate with groups that support underrepresented communities, and use job boards that prioritize diversity.

**Put Blind Resume Screening into Practice:** Remove identifying information from resumes during the initial screening process to avoid unconscious prejudice.

#### **Providing Equitable and Dispassionate Selection Procedures:**

Provide interviewers with the information and resources they need to identify and lessen their unconscious biases during the interview process.

**Establish Structured Interviews:** Create uniform evaluation standards and interview questions to guarantee that every applicant is evaluated equally.

**Put Together Diverse Interview Panels:** To provide a range of viewpoints and lessen prejudice, include members of underrepresented groups on interview panels.

#### **Promoting an Equitable and Inclusive Workplace:**

**Create Employee Resource Groups (ERGs):** Encourage and strengthen ERGs for various marginalized groups. For its members, these organizations can offer advocacy, support, and a feeling of community.

**Establish Mentorship and Sponsorship Programs:** Establish official initiatives that pair minority staff members with sponsors and mentors who may support and encourage their career growth.

**Encourage Pay Equity** To find and fix any racial or gender pay disparities, conduct routine pay audits. Make sure that decisions on pay and promotions are impartial and founded on objective standards.

**Provide Inclusive Benefits:** Offer benefits like flexible work schedules, parental leave guidelines, and accommodations for workers with disabilities that address the varied requirements of your workforce.

**Establish a Culture of Psychological Safety:** Encourage a work atmosphere in which staff members

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can freely share their thoughts, worries, and criticism without worrying about facing consequences. Promote candid communication and attentive listening.

Honor Diversity and Inclusion: Acknowledge and commemorate various holidays and cultural events. Encourage knowledge and comprehension of various viewpoints through workshops and educational initiatives.

#### **Leadership Accountability and Commitment:**

Obtain Executive Sponsorship: Obtain support for diversity and inclusion programs from high leadership.

Make Measurable Objectives: Clearly define your diversity and inclusion objectives, then monitor your progress over time. Make leaders answerable for accomplishing these objectives.

Spend money on training on diversity and inclusion: All staff members should receive continual training on subjects including inclusive communication, microaggressions, and unconscious bias.

#### **Constant Assessment and Development:**

Get Employee Input: Ask staff members about their experiences with inclusion and diversity in the workplace on a regular basis.

Examine metrics and data: Monitor important indicators such as underrepresented groups' representation, retention, and advancement rates. Make use of this data to pinpoint areas that want improvement.

Keep Up to Date and Adjust: Stay abreast of diversity and inclusion best practices and modify your efforts as necessary.

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## **ROLE OF E-COMMERCE IN REDUCING OPERATIONAL COST- A STUDY**

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*Abstract: E-Commerce is the process of conducting business electronically among various entities in order to satisfy an organizational or individual objective. A key ingredient of E-Commerce, sometimes referred to as electronic trading, is the advertisement and procurement of goods and services over the Internet (Rhodes & Carter, 1998)002E The success and volume of E-Commerce on the web has been widely reported. With success in establishing an environment in which E-Commerce can grow and flourish, every computer can become a window open to every business, large and small, around the globe. E-commerce, short for electronic commerce, has revolutionized the way businesses operate and has played a pivotal role in reducing operational costs across various industries. This innovative approach to conducting business transactions online has significantly transformed the traditional business landscape. E-commerce leverages the power of digital technology to streamline processes, enhance efficiency, and ultimately cut operational expenses for businesses of all sizes. In this introduction, we will explore the fundamental role of e-commerce in reducing operational costs, highlighting its impact on various aspects of business operations. From minimizing brick-and-mortar overheads to optimizing inventory management and automating processes, the influence of e-commerce on cost reduction is profound and far-reaching. Understanding these dynamics is crucial for businesses seeking to harness the cost-saving benefits of e-commerce in an increasingly digital and competitive marketplace.*

**Key Words:** E-Commerce, Digital Technology

### **INTRODUCTION**

E-commerce as anything that involves an online transaction. E-commerce provides multiple benefits to the consumers in form of availability of goods at lower cost, wider choice and saves time. The general category of e-commerce can be broken down into two parts: E-merchandise: E-finance. E-commerce involves conducting business using modern communication instruments: telephone, fax, e-payment, money transfer systems, e-data interchange and the Internet. Online businesses like

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financial services, travel, entertainment, and groceries are all likely to grow. Forces influencing the distribution of global e-commerce and its forms include economic factors, political factors, cultural factors and supranational institutions.

Online marketing is a set of powerful tools and methodologies used for promoting products and service through the internet. Online marketing includes a wider range of marketing elements than traditional business marketing due to extra channels and marketing mechanism available on the internet. Online marketing is advertising and marketing the products or services of a business over Internet. Online marketing relies upon websites or emails to reach to the users and it is combined with e-commerce to facilitate the business transactions.

By harnessing the power of digital technology, companies can revolutionize their operations and significantly reduce operate expenses. E-commerce allows businesses to engage directly with suppliers and customers, eliminating the need for intermediaries and reducing associated costs. Additionally, e-commerce enables real- time inventory management, allowing businesses to optimize inventory levels and minimize storage expenses by automating the ordering and fulfillment process, businesses can reduce delivery times, improve order accuracy, and reduce waste.

E commerce offers businesses the opportunity to enhance customer service while reducing support costs. With an online store, customers can easily access product information, compare with other prices, and read reviews. This self-service approach reduces the need for extensive customer support and lowers associated costs.

#### **Advantages of E- Commerce**

- **Global reach:** E-commerce allows businesses to reach a global audience without the need for physical storefronts, enabling them to expand their customer base and market reach.
- **Lower Costs:** E-commerce eliminates the need for traditional brick-and-mortar stores, reducing overhead costs associated with rent, utilities, and staffing. Additionally, digital marketing channels are often more cost-effective than traditional advertising methods.
- **Convenience:** E-commerce offers customers the convenience of shopping anytime, anywhere, without the constraints of store hours or geographical location. This flexibility enhances the overall shopping experience and increases customer satisfaction.
- **Increases sales & revenue:** By reaching a larger audience and providing a seamless shopping experience, e- commerce can lead to increased sales and revenue for businesses.
- **Data Insights:** E-commerce platforms generate valuable data insights on customer behavior, preferences, and purchase history, enabling businesses to personalize marketing efforts, optimize pricing strategies, and improve overall decision-making.
- **Scalability:** E-commerce platforms are highly scalable, allowing businesses to easily expand their operations and accommodate growing demand without significant investments in physical infrastructure.
- **Improved Inventory Management:** E-commerce systems automate inventory management processes, reducing the risk of stock outs and overstocking while optimizing inventory turnover and cash flow.
- **Enhanced customer engagement:** E-commerce platforms offer various tools and features,

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such as product recommendations, reviews, and live chat support that enhance customer engagement and foster loyalty.

- **Accessibility:** E-commerce enables businesses to cater to customers with disabilities or mobility limitations by providing accessible interfaces and alternative payment options.
- **Environmental Sustainability:** E-commerce reduces the need for physical transportation and paper-based transactions, contributing to environmental sustainability by lowering carbon emissions and paper waste.
- **Tracking, Analytics, and Insights:** Track traffic and your customers' buyer journeys and get insights into their behaviour and expectations; you can shape your marketing strategy using these insights as a base. Regardless of the source of the traffic—SEO, PPC, or conventional methods like flyers and newsletters—you can track customer behaviour. Analytics tools are mostly built into e-commerce sites, allowing you to monitor your customer's progress through the sales funnel without fuss. Data like customer preferences and feedback, inventory management, marketing strategy effectiveness, etc. is easily measured and converted into actionable insights.
- **Respond Quickly to Trends and Demands:** Businesses can leverage streamlined logistics to respond rapidly to market trends and customer demands. It also allows businesses to launch campaigns and offers on the go to attract more customers and boost sales. This is a noteworthy point when we are discussing the pros and cons of E-Commerce.
- **Detailed Product Information:** Detailed information can be obtained on products, demo videos, customer reviews, etc. on e-commerce sites; this is not possible in physical stores as there is limited space. This information makes it easier for customers to make a purchase decision.
- **Personalised Messaging:** Businesses can send personalised marketing messages as well as relevant product recommendations to regular customers. Targeted communications have a greater chance of converting visitors.
- **Unrestricted Space:** E-commerce sites can display any number of products to consumers, as they are not limited by physical space. Plus, you can make these available to your customers at any time, allowing you to engage in global expansion.

#### **Four Traditional Types of E-Commerce Business Models**

##### **B2C – Business to Consumer**

B2C businesses sell to their end-user. The B2C model is the most common business model, so there are many unique approaches under this umbrella. Anything you buy in an online store as a consumer- think wardrobe, household supplies, entertainment is done as part of a B2C transaction. The decision-making process for a B2C purchase is much shorter than a business-to- business (B2B) purchase, especially for items that have a lower value.

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### **B2B- Business to Business**

In a B2B business model, a business sells its product or service to another business. Sometimes the buyer is the end user, but often the buyer resells to the consumer. B2B transactions generally have a longer sales cycle, but higher order value and more recurring purchases. Recent B2B innovators have made a place for themselves by replacing catalogs and order sheets with ecommerce storefronts and improved targeting in niche markets.

### **C2B- Consumer to Business**

C2B businesses allow individuals to sell goods and services to companies. In this ecommerce model, a site might allow customers to post the work they want to be completed and have businesses bid for the opportunity. Affiliate marketing services would also be considered C2B.

### **C2C- Consumer To Consumer**

A C2C business also called an online marketplace connects consumers to exchange goods and services and typically make their money by charging transaction or listing fees. Online businesses like Craigslist and eBay pioneered this model in the early days of the internet. C2C businesses benefit from self-propelled growth by motivated buyers and sellers, but face a key challenge in quality control and technology maintenance.

## **Theoretical Background of the study**

### **✓ Economies of Scale**

Theory: Economies of scale suggest that as a business produces or sells more, the average cost per unit decreases. In e-commerce, businesses can often reach a larger customer base without significantly increasing their fixed costs, leading to cost savings.

Application: E-commerce allows companies to expand their reach to a global market without the need for physical store expansions or additional infrastructure. This scalability can lead to cost advantages.

### **✓ Reduced Overhead Cost**

Theory: Overhead costs, such as rent, utilities, and physical space maintenance, can be a significant part of a business's operational expenses. E-Commerce eliminates the need for a physical storefront, resulting in lower overhead costs.

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Application: By operating online, businesses can save on rent, utilities, and maintenance expenses associated with brick-and-mortar stores, allowing them to allocate resources more efficiently.

#### ✓ **Reduced Automation**

Theory: Automation involves using technology to perform tasks with minimal human intervention. E-commerce platforms often include automated processes for inventory management, order processing, and customer support.

Application: Automation reduces the need for manual labor, which can lead to cost savings. For example, automated order processing systems can be more efficient and accurate than manual order entry, reducing labor costs.

#### ✓ **Just-in- Time Inventory**

Theory: The just-in-time (JIT) inventory management theory emphasizes reducing inventory level to the minimum required to meet customer demand. This minimizes storage costs and the risk of inventory obsolescence.

Application: E-commerce businesses can implement JIT inventory practices more effectively, as they can monitor real-time demand and adjust inventory levels accordingly. This reduces storage costs and the need for large warehouses.

#### ✓ **Data-driven decision making**

Theory: Data-driven decision-making is the process of using data and analytics to inform business decisions. E-commerce platforms generate extensive data that can be leveraged to optimize operations and reduce costs.

Application: E-commerce companies can analyze customer behavior, sales patterns, and website traffic to make informed decisions regarding pricing, marketing strategies, and inventory management. This leads to cost-effective strategies and better resource allocation.

#### ✓ **Supplier Relationship**

Theory: Collaborative relationships with suppliers can lead to cost savings through negotiation, bulk purchasing, and reduced lead times.

Application: E-commerce platforms provide businesses with access to a wider range of suppliers. Companies can choose suppliers based on factors like price, quality, and shipping options, which can result in cost reductions.

#### ✓ **Cost Transparency and Comparison Shopping**

Theory: The internet provides transparency in pricing and the ability for consumers to easily compare prices and products. Businesses must remain competitive, often leading to price optimization.

Application: E-commerce businesses must price their products competitively due to the ease with which consumers can compare prices online. This can lead to cost-efficiency as companies seek to attract customers with competitive pricing.

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### **✓ Lean Principles**

Theory: Lean principles aim to minimize waste in processes, reducing costs and improving efficiency.

Application: E-commerce businesses can implement lean principles by streamlining processes, reducing excess inventory, and optimizing resource allocation to minimize waste and lower operational costs. In summary, the theoretical background of e-commerce reducing operational costs is grounded in economic and management theories such as economies of scale, process automation, JIT inventory management, and data-driven decision making. By leveraging these principles, businesses can operate more efficiently and cost effectively in the e-commerce landscape.

### **Tools & Technologies for optimizing E- Commerce Operations And Reduced Costs**

- ✓ **E- Commerce Platforms:** Choose a robust ecommerce platform that offers features such as inventory management, order processing, and payment gateways. Popular options include Shopify, Woo Commerce, and Magento.
- ✓ **Inventory Management Software:** Implement inventory management software that provides realtime visibility into stock levels, automates reorder processes, and integrates with other systems. Examples include Trade Gecko, Fishbowl, and Zoho Inventor.
- ✓ **Customer Relationship Management (CRM) Systems:** CRM systems help businesses manage customer data, track interactions, and automate marketing campaigns. Popular CRM options include Salesforce, HubSpot.
- ✓ **Analytics Tools:** Utilize analytics tools to gain insights into customer behavior, track key performance indicators, and identify areas for improvement. Google Analytics, Kissmetrics, and Mixpanel are popular choices for ecommerce analytics.
- ✓ **Chatbot Platforms:** Explore chatbot platforms that allow businesses to create AI-powered chatbots for customer support and sales. ManyChat, Chatfuel, and Dialogflow are popular choices for chatbot development. By leveraging these tools and technologies, businesses can streamline their e-commerce operations, reduce costs, and improve overall efficiency.
- ✓ **Marketing Automation Software:** Marketing automation software enables businesses to automate repetitive marketing tasks, such as email campaigns, social media posting, and lead nurturing. Popular options include Mailchimp, HubSpot, and Marketo.

### **Objectives of Study**

1. To examine the role of E-commerce in reducing operational costs in the business.
2. To check whether E-Business can help manage operating costs in many areas, thereby reducing the cost of individual transactions.

### **Review of Literature**

1. **Bartell, R.L. Blackwood, N.A. Eggenschwiler, D. Nguyen, M. Schnidrig, C. Yatchman, M.J. (1999):** Electronic commerce (EC) is possibly the most promising application of information technology witnessed in recent years. It is revolutionizing supply-chain management and has enormous potential for manufacturing, retail and service operations. The tremendous importance of EC has prompted us to write this paper. We have attempted



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to define e-commerce and examine major EC elements that link organizational systems. The application of EC in manufacturing, retailing and service operations is examined, and a framework for describing EC components and their role in different areas of an organization is proposed.

2. **Levis, K. (1996):** Adoption of E-Commerce and Electronic Supply Chain Management (E-SCM) by small and medium enterprises (SMEs) has developed a tremendous performance in business process. SMEs in Pakistan are trying to enhance their competences by adopting a new technology to enter into the global market. The survey was aimed to investigate the current status and future direction of the adoption and benefits of E-Commerce and E-SCM by small and medium enterprises in Pakistan. A mailed questionnaire survey was conducted to collect data from 210 SMEs as samples located in Karachi, Gujranwala and Faisalabad.
3. **Eril Brynjolfsson - Published in (1993) :** Brynjolfsson's paper "The Productivity Paradox of information Technology" examines the relationship between information technology investments and productivity in organizations, including the potential cost- saving benefits of e-commerce.
4. **Gary Hamel - Published in (2000):** Hamel's paper "Leading the Revolution" explores how business can embrace e-commerce and other disruptive technologies to drive innovation and reduce operational cost.
5. **Aleksandar Andonov et al. (2021)** stated that E-commerce has emerged as one of the most successful business models that have provided numerous benefits to businesses in the contemporary environment. Some imperative impacts have been the international marketplace, no time constraints, better relationship building with customers and lesser fixed costs.
6. **(Tzavlopoulos et al. (2019)** E-commerce has been regarded as buying and selling products and services using the internet. The business model is designed to provide its offerings online and allow the consumers to select and purchase the desired products. Planning for an E-Commerce business is critical. This allows the firm to consider the related dynamics and implementation of the business model consider the probable adversities and challenges that may arise during the process and functionality.
7. **(Nyagwencha, 2018)** The planning further considers the associated risks and limitations to which the company may be exposed so that an effective contingency plan may be developed through critical planning and considerations. The other aspect is technology selection along with mediums and approaches the firm must select adequate technology to carry out the desired tasks and activities to function online. In this regard, the considerations need to be made according to the nature and type of customers and the capabilities, resources, and kind of business involved in the process. The technology usage may differ for various businesses and their specific target audiences, and critical analysis in this regard could be conducted to ensure optimum results.

#### **Research Methodology**

The research methodology used in this study is mainly designed as an empirical work based on both secondary data and primary data, obtained through pre-tested questionnaire, internet browsing, direct personal interviews of selected persons involved in this sector as well as. The study is conducted on the basis of 128 selected sample and findings are drawn basic on their

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respond.

### **Sampling Technique**

The sampling technique used in the project is Stratified Random Sampling. Stratified random sampling, is the procedure of dividing the population into different strata and choosing one among them for analysis.

### **Findings and Suggestions**

In particular, e-commerce has improved the availability of information, reduced processing errors, reduced response times, lowered costs of services, and has effectively raised customer satisfaction and the level of service that customers expect to receive. The research revealed, that many businesses are making the transition to integrated e-commerce business operations. This is being done with the expectations of lowering operational costs and also significantly improving the level of their service offerings.

- Firstly, businesses can automate routine tasks such as order processing and inventory management by implementing e-commerce platforms, thereby minimizing labor costs and errors.
- Secondly, optimization efforts through e-commerce analytics enable businesses to fine-tune inventory levels, streamline supply chain processes, and reduce carrying costs.
- Thirdly, providing self-service options on e-commerce platforms empowers customers to handle tasks like order tracking and returns management independently, reducing the need for manual intervention and customer support resources. Moreover, data-driven decision-making using e-commerce analytics helps businesses gain insights into customer behavior, market trends, and operational performance, facilitating the identification of cost-saving opportunities. Investing in scalable e-commerce platforms and robust cyber security measures ensures efficient and secure operations. Additionally, strategies focused on customer retention, supplier negotiation, and continuous improvement further contribute to cost reduction efforts. By implementing these strategies, businesses can leverage e-commerce to streamline operations, optimize costs, and enhance profitability.

### **Conclusion**

Showed the results of statistical analysis on the variable costs of storage and distribution that the company is seeking to benefit from the advantages of using e-commerce to reduce the stock of the company and the salaries and wages of employees stores and reduce the costs of traveling to the and lower insurance expenses on stores and expenses stationery and consumption of machinery and equipment used in the stores. It also showed that the company is interested and allow the exchange of experiences and views with customers through the use of electronic commerce and access to any inquiry or consulted by them. It also showed that the company is interested through the use of electronic commerce to meet the needs and requirements of customers and achieve the highest degree of satisfaction to have. It also showed the results of statistical analysis on the variable salary costs that the company studied is seeking through the use of electronic commerce in marketing their products to reduce the costs of salaries and wages and reward staff and employees in the Department of Advertising and reduce the cost of training programs and courses that are held in the Department of Advertising and the rest of the sections.

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**REIMAGINING TALENT MANAGEMENT THROUGH INCLUSIVE  
HRM: A SECTORAL STUDY OF THE INDIAN IT INDUSTRY**

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***Abstract:*** *The Indian Information Technology (IT) sector has become a global powerhouse, contributing significantly to GDP growth and technological innovation. However, despite this success, disparities persist in the distribution of opportunities, especially for marginalized communities. This paper examines how inclusive Human Resource Management (HRM) practices can reimagine talent management strategies to foster equity, diversity, and organizational efficiency. Drawing from both theoretical frameworks and empirical studies, the paper proposes a model for inclusive talent management tailored to the Indian IT context. It highlights the transformational role of inclusive HRM in enhancing innovation, reducing attrition, and supporting sustainable sectoral development.*

***Keywords:*** *Inclusive HRM, talent management, Indian IT sector, diversity, equity, organizational innovation*

## **INTRODUCTION**

India's IT industry, contributing over 7.5% to GDP and employing 4.5 million individuals, stands at the forefront of digital transformation. Yet, the sector is challenged by inequities in access, participation, and advancement. The need to reimagine talent management through inclusive HRM is urgent—not only for social justice but also for strategic sustainability. This paper investigates how inclusive HRM can reshape talent management in the IT sector to better align with the nation's inclusive growth goals.

India's Information Technology (IT) industry has emerged as a cornerstone of economic growth, technological advancement, and global competitiveness. As of recent estimates, the sector contributes over 7.5% to the national GDP, employs more than 4.5 million professionals, and significantly boosts foreign exchange earnings through software exports. The rise of the digital economy, increased adoption of AI and automation, and the global push for IT outsourcing have positioned India as a leader in the global technology services landscape.

However, alongside this economic success lies a growing concern—the uneven distribution of opportunities within the sector. Systemic disparities persist, particularly in terms of gender, caste, regional representation, and socio-economic background. Despite having a vast and diverse talent pool, participation from marginalized and underrepresented groups in the Indian IT workforce remains disproportionately low. Women, people from lower

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socio-economic and caste backgrounds, individuals with disabilities, and professionals from rural or tier-II and III cities often face barriers to entry, retention, and upward mobility. Traditional talent management practices in many Indian IT firms have focused largely on efficiency, cost optimization, and meritocratic ideals—often overlooking the structural inequalities that shape access to opportunity. These approaches, while beneficial in some respects, have failed to fully address the need for inclusion, equity, and social justice within organizational ecosystems.

This paper contends that there is an urgent need to reimagine talent management by integrating Inclusive Human Resource Management (HRM) practices that recognize and actively mitigate systemic barriers. Inclusive HRM refers to the deliberate incorporation of equity, diversity, fairness, and representation into every aspect of the employee lifecycle—from recruitment and onboarding to performance management, career development, and retention. In doing so, this research contributes to both academic literature and practical discourse, advocating for a shift from conventional HR practices toward a more humane, equitable, and sustainable talent management paradigm that not only drives business outcomes but also fosters societal progress.

#### **Literature Review**

Inclusive HRM, as defined by Shore et al. (2011), integrates equity, fairness, and representation into organizational systems. Jayne and Dipboye (2004) argue that strategic diversity initiatives drive innovation and performance. Nishii (2013) expands on this by underscoring the importance of climates of inclusion for psychological safety and engagement. In India, Budhwar and Debrah (2013) caution that HR practices often mirror social hierarchies. Meanwhile, Kundu and Mor (2017) and Rao and Bhatnagar (2016) highlight the strategic advantage of embedding inclusion in HR functions for retention and engagement.

Recent research by Agarwal (2020) demonstrates the effectiveness of mentorship programs in advancing careers for underrepresented groups in IT. Bresciani et al. (2021) link inclusive leadership and HRM with increased innovation. Together, these studies provide a strong foundation for exploring the integration of inclusive HRM into talent management strategies in India's IT sector.

### **Challenges in Talent Management within the Indian IT Sector**

#### **Gender and Caste-Based Underrepresentation**

A persistent issue in Indian IT firms is the **underrepresentation of women, Dalits, Adivasis, and other marginalized communities**, particularly in mid-to-senior-level positions. While entry-level diversity has improved due to campus hiring and inclusive hiring mandates, the **glass ceiling** remains intact for many:

- **Women's participation** in IT drops significantly beyond junior roles due to a lack of mentorship, caregiving responsibilities, gender bias, and inflexible work cultures.



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- **Caste-based discrimination**—though often subtle or institutional—limits access for Dalit and Adivasi candidates, who are often excluded from elite education institutions and professional networks that serve as gateways to IT careers.
- **Intersectionality** intensifies these barriers for those who belong to more than one marginalized group (e.g., women from lower castes or rural areas).

#### **Urban-Centric Opportunities**

India's IT ecosystem is heavily concentrated in a few urban tech hubs like **Bengaluru, Hyderabad, Pune, and Chennai**. This **geographic concentration** creates structural barriers for potential talent from **tier-II and tier-III cities**, rural areas, and economically backward regions:

- Aspirants from non-metro regions often face **limited access to quality training, exposure, and job opportunities**.
- The high cost of living in tech hubs deters many qualified individuals from relocating.
- This results in an **inequitable distribution of employment benefits**, with urban populations reaping disproportionate gains from the IT boom.

#### **Bias in Recruitment, Performance Evaluation, and Promotions**

Many IT firms rely on traditional **merit-based systems**, which can unintentionally disadvantage candidates from marginalized groups. Biases can enter the system at multiple stages:

- **Recruitment** often favors candidates from elite institutions (IITs, NITs, top private colleges), ignoring equally talented individuals from lesser-known colleges.
- **Cultural fit assessments** in interviews may penalize those who do not conform to dominant social norms (e.g., accent, dress, communication style).
- **Performance reviews and promotions** are often influenced by subjective managerial perceptions, which may be biased—consciously or unconsciously—against minority employees.

These practices create a **discriminatory filter**, preventing a truly inclusive and meritocratic talent ecosystem.

#### **Low Retention of Diverse Talent**

Even when diverse candidates are hired, **retention remains a significant challenge**:

- **Non-inclusive work environments**, lack of role models, microaggressions, and cultural alienation often lead to dissatisfaction and disengagement.
- Many women leave mid-career due to **poor maternity support, lack of flexible work options**, and inadequate return-to-work programs.

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- Employees from minority backgrounds may experience **tokenism**, where their presence is symbolic rather than meaningful, leading to a sense of exclusion and lower organizational commitment.

This high attrition of diverse talent results in **lost investments in training**, weakens organizational diversity goals, and contributes to **a homogeneous leadership pipeline**.

#### **Skills Mismatch and Digital Divide**

As the IT industry undergoes rapid digital transformation—embracing technologies like AI, cloud computing, cybersecurity, and data analytics—there is a growing **mismatch between industry demands and the available talent pool**:

- Many candidates from underrepresented backgrounds lack access to **cutting-edge skilling opportunities**, particularly those not fluent in English or lacking digital literacy.
- This **digital divide** exacerbates existing inequalities, limiting who can participate in the emerging digital economy.

#### **Lack of Systemic and Leadership Accountability**

Finally, a major impediment is the **absence of systemic accountability for inclusion**:

- Inclusion efforts are often driven by isolated HR teams or CSR departments rather than being integrated into core business strategies.
- **Leadership buy-in is inconsistent**, and inclusion is rarely linked to key performance indicators (KPIs) or incentive structures.
- Without data-driven monitoring and institutional support, many diversity initiatives become **performative rather than transformative**.

#### **Reimagining Talent Management through Inclusive HRM**

##### **Inclusive Recruitment**

Hiring strategies must prioritize outreach to non-traditional talent pools, such as tier-II/tier-III cities and underrepresented social groups. Skills-based assessments and return-to-work programs for women and caregivers are essential to diversify talent pipelines.

##### **Inclusive Learning and Development**

Customized training, mentorship, and sponsorship schemes can support the professional growth of marginalized groups. Emphasis should be placed on continuous learning pathways aligned with digital skills and leadership roles.

##### **Inclusive Work Culture**

An inclusive organizational culture is fostered through anti-bias training, flexible work policies, and active employee resource groups. Organizational leaders must be trained in

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inclusive leadership practices.

### **Data and Accountability**

The use of HR analytics to monitor inclusion metrics, including recruitment diversity, promotion rates, and attrition by demographic group, ensures transparency and informed decision-making.

### **Implementation Barriers and Opportunities**

- Key barriers include:
- Entrenched societal biases influencing workplace behavior
- Tokenism in diversity initiatives
- Lack of leadership accountability and systemic support
- However, opportunities exist in the form of ESG-linked HRM goals, government support for skilling initiatives, and growing investor interest in inclusive governance.

### **Strategic Implications for the Indian IT Sector**

Inclusive HRM is more than a compliance issue—it's a catalyst for business growth. Research indicates a strong link between diversity and innovation (Bresciani et al., 2021). Talent strategies anchored in inclusion can enhance employee engagement, reduce turnover, and attract a wider talent pool.

### **Recommendations for Policy and Practice**

Institutionalize inclusion across the talent management lifecycle

Leverage digital platforms to widen talent access

Foster inclusive leadership at all management levels

Collaborate with educational and social institutions for inclusive pipeline development

Regularly publish and evaluate inclusion metrics

### **Conclusion**

Reimagining talent management through inclusive HRM is essential for the Indian IT sector's next phase of growth. By integrating equity into core HR practices, firms can harness untapped potential, enhance resilience, and contribute meaningfully to India's inclusive development agenda. Future research should examine sector-specific case studies and longitudinal impacts of inclusive HR interventions.

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## **WORK-LIFE BALANCE - AN OVERVIEW**

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**Abstract:** Work-life balance is a term that makes intuitive sense to many of us but can be elusive to achieve. It is a significant everyday accomplishment and delights in life. Organizations have started presenting different plans to pull in and hold workers and productivity. The majority of employers support the work-life balance concept. Work-life balance may be subject, to expansion in scholastic literature, legislation, and open disclosure. Work-life balance is an overseas concept counting proper prioritizing between ‘Work’ such as career and desire, on the other hand, and ‘Life’ such as well-being, joy, relaxation, family, and otherworldly development. Work-life balance implies, important day-by-day accomplishment and delight in each of the four life quadrants work, family, companion, and self. Work-life balance is around successfully overseeing the juggling act between paid work and other activities that are imperative to us, including spending time with family, taking part in sports and entertainment, volunteering, or undertaking assisted study. Organizations have begun presenting different plans to pull in, hold workers, and increase efficiency. The larger part of employers support the Work-Life adjustment concept. Work-life balance is an aspect of employee well-being related to the employee's ability to manage both personal and professional responsibilities with adequate time for rest and leisure. Each individual may define his or her ideal work-life balance differently.

**Key Words:** Work-Life Balance, Employees, organization and Welfare, etc.,

### **INTRODUCTION**

Work-life balance is a method that helps employees of an organization balance their personal and professional lives. Work-life balance encourages employees to divide their time on the basis of priorities and maintain a balance by devoting time to family, health, vacations, etc. along with making a career, business travel, etc. It is an important concept in the world of business as it helps to motivate the employees and increases their loyalty towards the company. We all know the feeling when demands are piling up on one side of the work-life scale and dominating our days. You may also know the feeling of unfulfilled dreams and desires on the other side of

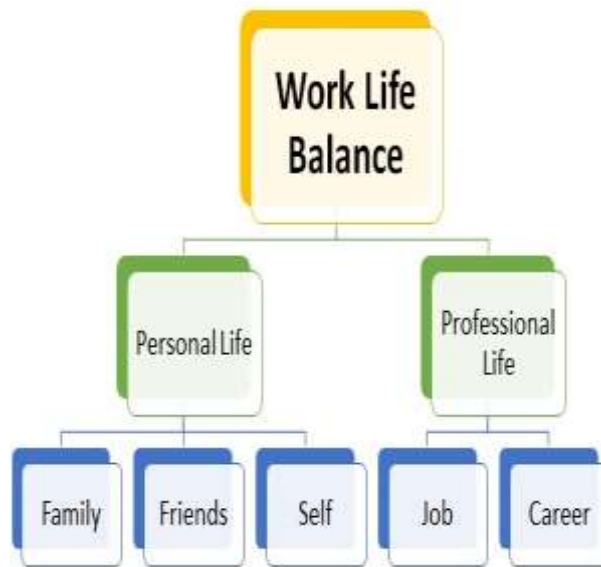
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the scale. Work-life balance is often used to describe a trade-off. You balance the time spent on work projects versus time spent with family, friends, and personal interests.

Today, work-life balance has expanded to include all genders. It's also broader than just families. The idea includes concepts such as Effective time management, Stress management, Burnout prevention. With technology, many professional work cultures and expectations have changed. The result: a more integrated, and fuzzier, relationship between "work" and "personal" time.

#### **Importance of work-life balance**

Working on a job for a company and making a career can be an extremely time-consuming duty for any employee. Employees are busy at their offices throughout the day and sometimes even on weekends. This gives them very little time to interact with their family. This helps to increase productivity at the workplace as the employee is relaxed about his personal commitments. It also allows the employee to spend quality time with family, vacations, leisure time, work on his/her health, etc. Hence work-life balance is extremely important for employees and increases their motivation to work for the company. The below image depicts a work-life balance scenario, where an employee has to balance his/her life between personal (family, friends & self) and professional (job, career) commitments.



#### **Benefits of work life balance**

1. Work life balance increases the motivation of employees and helps them perform better at job
2. It helps people to relieve their stress as they can spend leisure time with their near and dear ones
3. Companies can maximise productivity from an employee who is rejuvenated and refreshed as compared to a over worked employee
4. Healthy lifestyles can be maintained by having a work life balance. This includes a good diet, regular exercises etc.



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5. Employees who are highly motivated can help the business grow as they are more attached to their jobs and careers.

#### **Elements of Work-life Balance**

1. Self-management  
Taking care of personal needs, such as eating, sleeping, and exercising, plays a significant role in your work-life balance. If you don't sleep well, for instance, you're tired, and that impacts your work, too.
2. Time management  
Deciding on priorities and how you'll manage your time throughout the day can be challenging. Davidson suggests setting goals and distinguishing between urgent and important tasks. Learning how to prioritize your tasks is also the essence of the Eisenhower matrix technique, which can improve your time management skills.
3. Stress management  
Dealing with distractions in the workplace can cause stress which may lead to a lack of productivity. So, to decrease your stress levels, you need to find a way to adapt to an environment that is full of distractions. Also, Davidson points out that you should avoid multitasking because switching between projects and tasks can be stressful, too.
4. Managing change  
No matter where you work and what you do, it's likely that your job requires you to get used to frequent changes. To manage these changes better, you need to ensure that the volume of the change does not overwhelm you. This applies to any modifications in your private life, too.
5. Managing technology  
The technology you use should make your life easier — not more complicated. Remember that you rule technology, not the other way around. Therefore, opt for apps and software that are intuitive and user-friendly.

#### **Causes of poor work-life balance**

1. Increased expenses without an increase in salary. 1/3 of employees cited this as their top challenge to maintaining a work-life balance.
2. Increased responsibilities at work. About half of the millennials and Gen X participants cited additional work responsibilities as a leading cause of poor work-life balance.
3. Increased responsibility at home. More than 40% of millennials and Gen X participants said more responsibility at home, such as caring for children and aging relatives, made it more challenging to balance work and personal life.
4. Working longer hours. Almost half (46%) of managers work more than 40 hours each week, and 40% say their hours have increased over the past five years.
5. Having children. Over a quarter (26%) of millennials said they are working more after having a child. 50% of women and 22% of men took a career break after having a child.

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Steps to improve work-life balance

:Creating a work leisure plan

Where an individual has to schedule his tasks and divide time appropriately so that he has allocated appropriate time to his work and his career development goals and at the same time allotted time for leisure and personal development. Employees also use a compressed workweek plan to build a balance.

### **1. Leaving out activities that waste time and energy**

An individual should judiciously avoid wasteful activities that demand a large time and energy and in return not produces output for either the work life or the leisure life. Effective time management can help an employee be less stressed. Now that you know what your priorities are—whether that's spending more time at work to aim for a promotion or cutting back on after-hours emails by establishing boundaries—it's important to figure out how to better manage your time.

### **2. Outsourcing and Delegating work**

Delegate or outsource time-consuming work to other individuals. It serves two purposes, first the work gets done and the other is a person can focus on other things that may align more with skills and knowledge and may be less stressful.

### **3. Set enough time for relaxation**

Relaxation provides a better work-life balance and tends to improve productivity on the professional or the work front along with providing ample scope to develop the life part of the balance.

### **4. Prioritizing work**

Often employees do not give priority to work and end up doing a lot of work at the last minute. Better planning can help employees save unnecessary time delays, which can be utilized by employees for personal work.

Unhealthy work-life balance

Constant overwork: Regularly working long hours, including weekends and holidays, without sufficient time for rest, relaxation, or personal activities

Neglected personal life: Sacrificing personal relationships, hobbies, and leisure activities due to excessive work demands

Burnout: Experiencing physical, mental, and emotional exhaustion due to chronic stress and work-related pressure

Lack of self-care: Failing to prioritize self-care activities, such as exercise, adequate sleep, and leisure time results in deteriorating physical and mental health

Strained relationships: Experiencing difficulties in maintaining healthy relationships with family, friends, and loved ones due to work-related commitments

## **Harms of an Imbalanced Life**

Improper balance in your work commitments and personal responsibilities, more often than not, causes tremendous stress between both the different sides of a person's life. A person can easily

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lose focus and direction if his priorities are not well-set and his life oscillates dangerously between his family responsibilities and those at the office. When the approach is so negative and confusing, it will come as little surprise that people who have unhealthy work-style and negligent lifestyles tend to lose productivity with the passing of time.

It has been observed that both these situations lead to a complete collapse of productivity in the long run. People who sacrifice their personal life to achieve professional success end up neglecting their health and healthy habits like eating healthy food, proper rest, peaceful sleep and engaging in relationships. As a result of this, their health deteriorates and productivity dips significantly.

### **Conclusion**

In conclusion, prioritizing work-life balance is essential for employee well-being and productivity. By creating a work environment that supports work-life balance, employers can improve job satisfaction, reduce stress, and attract and retain top talent. These days many companies and people prioritize work-life balance. Some of the examples through which this is happening is Working from Home, flexible work timings, sufficient leave for vacation, and family care. Also, sabbatical leaves are offered these days. Another example is offering people the option to move in a different career path which aligns more with their skills and aspirations. Work-life balance is an aspect of employee well-being related to the employee's ability to manage both personal and professional responsibilities with adequate time for rest and leisure. Taking time out to understand how the various parts of your life are impacting one another is a necessary step in developing a new work-life integration that serves your needs. Pause and consider your current work-life situation.

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## **ASSESSING THE IMPACT OF GREEN HUMAN RESOURCE STRATEGIES ON WORKFORCE RETENTION AND SUSTAINABLE ENVIRONMENTAL PRACTICES**

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***Abstract:** This chapter endeavours to elucidate the concept of Green HRM, or Green Human Resources Management, highlighting its foundational principles, significance, practical applications, and the outcomes it engenders within the dynamic business environment. Rationale for the investigation: The growing focus on environmental sustainability poses a substantial challenge for HR professionals concerning the effective integration of eco-friendly practices into human resource strategies. This manuscript reflects upon the benefits and ramifications of embracing Green HRM, while simultaneously emphasizing the increasing necessity of incorporating environmental considerations into HRM procedures. The chapter scrutinizes the theoretical foundations and impacts of Green HRM through a thorough examination of the extant literature. The topic under discussion—the effect of environmentally sustainable HRM practices on work-related attitudes, productivity, resource efficiency, waste reduction, work-life balance, cost savings, as well as employee performance and retention—is analysed employing a qualitative research methodology. The results indicate that the adoption of Green HRM exerts a favourable influence on numerous facets of organizational performance. In addition to promoting resource efficiency and reducing waste, it improves employee attitudes, productivity, and retention rates. Moreover, Green HRM aids in the development of workplaces that are both socially responsible and environmentally sustainable. Practical implications: This study provides significant insights for HR practitioners by clarifying the crucial components of Green HRM that enhance conventional HRM practices. By integrating eco-friendly initiatives into HR strategies, organizations can foster sustainable work environments that are congruent with environmental goals while concurrently improving overall performance and employee well-being.*

***Key Words:** Green HRM, Sustainable HRM, Workforce Retention, Sustainable Practices*

### **Introduction**

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Green Human Resource Management is rapidly gaining prominence on a global scale as enterprises increasingly acknowledge the significance of environmental sustainability. Although the concept may be interpreted in multiple dimensions, it predominantly revolves around enhancing energy efficiency and mitigating pollution arising from industrial operations and quotidian practices. The principal aim of GHRM is to diminish the adverse repercussions of energy consumption and pollution on the ecological system. The incorporation of green technology into a corporation's strategic framework can facilitate success in the contemporary landscape. Organizations are destined to assume a crucial position in the fight against climate change. With the endorsement of both management and personnel, HRM can actualize a corporation's dedication to environmentally friendly practices. Green HRM can serve as a catalyst for sustainability objectives, ultimately aiding the organization in realizing its goals (Raghuwanshi & Acharya, 2020; Uddin & Islam, 2016). In essence, Green HRM entails the alignment of HR practices with ecological considerations to promote a sustainable work environment and contribute to overarching environmental aspirations (al., 2019; Green HRM, 2025). Moreover, it can augment a corporation's Corporate Social Responsibility (Green Human Resource Management (GHRM) and Why Is It Important? 2024). Green HRM facilitates organizations in reducing expenditures while retaining essential personnel. It diminishes operational costs by advocating for the efficient utilization of resources such as electricity, water, and materials. This methodology enhances employee satisfaction and commitment, culminating in increased productivity, and fosters a culture that prioritizes the welfare of all staff members. Even small enterprises can decrease their energy expenses through the adoption of energy-efficient technologies. Green Human Resource Management has emerged as a crucial domain, interweaving environmental sustainability with conventional HRM practices, thereby transforming the manner in which organizations manage their workforce while curtailing their ecological impact. This integration signifies an escalating global cognizance of ecological challenges and a proactive transition towards sustainable business practices (Martins et al., 2021). GHRM incorporates an array of practices, ranging from environmentally conscious recruitment and selection to training and development, performance management, and employee involvement, all aimed at nurturing an environmentally aware workforce and promoting sustainable initiatives within the organization (Lawter & Garnjost, 2025). The primary objective is to develop a workforce that not only recognizes the significance of environmental sustainability but is also actively engaged in executing green initiatives, thereby enhancing the overall environmental performance of the organization (Gill et al., 2021). GHRM ensures the recruitment of individuals who are fervently committed to environmental conservation and synchronizes HRM policies to advocate for sustainable resource utilization and prevent ecological degradation within business operations (Mwita & Mwakasangula, 2020). The integration of ecological considerations into HRM practices is intended to address substantial environmental challenges on a broader scale, reflecting a commitment to environmental stewardship (Tran, 2023). Green HRM practices are instrumental in bolstering organizational sustainability outcomes, contributing to a competitive advantage by emphasizing environmental impact and aligning with economic and social objectives (Chowdhury et al., 2023).

#### **Review of Literature**

The evolution of Green Human Resource Management (GHRM) has garnered increasing academic and practical interest due to its potential in aligning human resource practices with environmental



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sustainability. Various scholars have explored the strategic integration of green practices within HRM to foster both organizational and ecological performance.

**Uddin and Islam (2016)** provide foundational insights by proposing a conceptual model suggesting that GHRM can enhance environmental awareness and performance through structured processes. Their literature-based approach underscores the role of HR in promoting environmental sustainability by embedding green principles into traditional HR functions. **Wang and Makhbul (2024)** expand this discourse by emphasizing that GHRM acts as a catalyst for sustainable performance when combined with green innovations. Though specific methodological details are limited, the study highlights that integrating environmental considerations into HRM practices significantly reduces ecological footprints and encourages sustainable use of resources. **Jam and Jamal (2020)** conducted an empirical investigation that validates the positive impact of GHRM practices on organizational sustainability and employee retention. Their findings reveal that environmentally oriented HR policies not only enhance sustainable development and resource optimization but also actively engage employees in environmental initiatives. **Benevene and Buonomo (2020)** conducted a systematic literature review to develop a comprehensive model illustrating the influence of GHRM on organizational sustainability. Their work links GHRM to enhanced employee green behaviours, which collectively support environmental, social, and economic dimensions of sustainability. **Murillo-Ramos et al. (2023)** further contextualize GHRM by analysing its antecedents and outcomes. Their literature review posits that fostering sustainable psychological capital within employees through GHRM is vital for organizational transitions toward corporate sustainability, especially amidst dynamic environmental challenges. **Lawter and Garnjost (2025)**, in their systematic review, focus on the organizational performance outcomes of GHRM. They highlight green recruitment and selection as critical levers, enabling firms to attract environmentally conscious candidates and achieve environmental performance targets. **Ong et al. (2022)** identify research gaps within GHRM studies and offer a structured framework for future investigations. Their review emphasizes the strategic importance of GHRM in gaining competitive advantage and recommends pathways for empirical validation. **Dimitrov (2021)** consolidates key GHRM practices by analysing existing literature, identifying functions such as green recruitment, training, performance appraisal, and reward systems. His review demonstrates how these integrated practices contribute to sustainable business development.

### **THEORETICAL BACKGROUND**

The direct relationship between green HRM practices and green behaviour:

The theoretical framework connecting Green Human Resource Management (GHRM) practices to green behaviour emphasizes the mediating roles of green values and organizational culture. GHRM practices, such as green training, recruitment, and performance management, are designed to foster pro-environmental behaviours among employees, ultimately enhancing organizational sustainability. This framework integrates various theories, including Self-Determination Theory and the Ability-Motivation-Opportunity model, to elucidate how GHRM practices influence employee behaviour.

#### **The mediating role of employee engagement with environmental initiatives:**

Employee engagement with environmental initiatives functions as a significant mediating mechanism that connects Green Human Resource Management (GHRM) practices to employee

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green behaviour. According to Social Exchange Theory (SET), when organizations implement green HRM practices—such as eco-centric training, green rewards, and environmentally supportive leadership—employees perceive this as an indication of organizational support. Consequently, they are more inclined to engage both emotionally and behaviourally in environmental initiatives as a reciprocal reaction. This engagement cultivates a sense of purpose and ownership, thereby encouraging employees to voluntarily partake in sustainable behaviours that extend beyond their formal job responsibilities. Therefore, employee engagement serves as a conduit, enhancing the efficacy of green HRM strategies in fostering enduring green behaviour within organizations. The mediating effect underscores that it is not solely the policies but also the degree of employee involvement that dictates the success of green transformations within the workplace.

#### **The moderation role of personality attributes:**

Personality attributes assume a pivotal moderating role in the relationship between Green Human Resource Management (GHRM) practices and employee green behaviour, particularly through the intermediary pathway of employee engagement with environmental initiatives. Characteristics such as responsibility, willingness to explore, and being proactive can greatly shape employees' attitudes and reactions toward sustainability efforts. For instance, individuals exhibiting high levels of conscientiousness are more likely to align with organizational sustainability objectives and demonstrate green behaviours when GHRM practices are implemented. Likewise, individuals possessing a proactive personality tend to engage voluntarily in eco-friendly actions, even in the absence of external reinforcement. As a moderator, personality does not exert a direct influence on green behaviour; rather, it amplifies or diminishes the impact of engagement or GHRM practices on behaviour. This suggests that the effectiveness of green HRM and employee engagement strategies may differ based on individual variances in personality. Comprehending this interaction is essential for customizing HR policies that cater to diverse workforce profiles and ensuring the efficacy of environmental programs across different personality spectrums.

#### **Sustainable HRM Approaches for Green Practices:**

The initiatives associated with green HRM are articulated as innovations, policies, and procedures that organizations enact to counteract detrimental environmental consequences while concurrently fostering advantageous environmental effects (Arulrajah et al., 2016; Kim et al., 2019). To put it another way, green HRM initiatives concentrate on preparing staff with the essential skills to engage in eco-friendly actions that aid in the sustainable advancement of their companies. Consequently, various actions contribute to the formation of an organization's human capital, including the recruitment of candidates with environmentally friendly attitudes, training, green empowerment, and reward systems (Arulrajah et al., 2016; Irani et al., 2020). Green HRM practices are considered crucial elements for organizations aiming to embrace environmentally sustainable strategies that promote employee motivation (Ren et al., 2018).

#### **Green Process Innovation (GPI)**

Green innovation is characterized as a systematic approach for developing environmentally sustainable products and services through actions that mitigate environmental degradation by substituting conventional procedures with more sustainable raw materials and renewable energy sources (Agyabeng-Mensah et al., 2020; Albort-Morant et al., 2018). Numerous studies have underscored that organizations exhibiting a heightened level of innovation in green activities tend to achieve superior overall performance compared to their competitors, consequently securing

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competitive advantages (Albort-Morant et al., 2016; Allameh & Khalilakbar, 2018; Rahimizhian & Irani, 2020). Green innovation is intrinsically linked to the organization's strategic framework for environmental sustainability. Moreover, green innovation enhances environmental performance (EP), as advancements in greener products and processes not only mitigate the organization's detrimental environmental impacts but also augment the social and economic dimensions of the organization by minimizing waste and costs (Agyabeng-Mensah et al., 2020; Luu, 2019; Weng et al., 2015).

#### **Environmental Performance (EP)**

Environmental performance encompasses organizational programs aimed at meeting and exceeding public environmental standards in a manner that transcends mere compliance with existing laws and regulations (Arda et al., 2019). It incorporates the environmental impacts in accordance with legislative environmental requirements (Dubey et al., 2015). Previous research indicates that environmental performance is contingent upon the Caliber of green products, advancements in green technologies, and their integration into corporate activities and sustainable product development (Darnall et al., 2008; Pham et al., 2020). Environmental performance is defined as the commitment to environmental protection (Paillé et al., 2014; Roscoe et al., 2019) through organizational dedication that underscores the significance of conserving natural resources (Dubey et al., 2015).

#### **Green HRM Practices and EP**

The human resource department plays a pivotal role in maximizing organizational benefits by implementing effective environmental management policies, which can reduce expenses and increase profits, aligning with core environmental business objectives (Malik et al., 2020). Green HRM practices are instrumental in enhancing an organization's environmental efficiency, offering a robust framework for minimizing its ecological footprint (Jam & Jamal, 2020). These practices not only promote environmental sustainability but also enhance operational efficiencies, reduce costs, and foster stronger employee engagement and retention (al., 2019). Green HRM practices focused on fostering engagement positively influence an organization's innovative capacity, while strategic green HRM practices enhance the organization's overall performance by shaping its structure (Raghuwanshi & Acharya, 2020). Despite the increasing recognition of HRM's role in fostering innovation, there remains a notable gap in comprehensive research on the interplay between green HRM practices and innovation in green processes within organizations. Green HRM practices significantly influence green process innovation and environmental performance by fostering a culture of environmental stewardship and driving sustainable initiatives (Sobaih et al., 2020). These practices, including green recruitment, training, and performance management, play a crucial role in integrating environmental considerations into every facet of an organization's operations (Mwita & Mwakasangula, 2020).

#### **Objectives:**

- **To examine the influence of Green HRM practices on employee work-related attitudes**
- **To assess the impact of Green HRM on employee productivity**
- **To analyse the role of Green HRM in promoting resource efficiency**

#### **Methodology**

The study is primarily based upon the secondary data. For this extant literature related to the topic

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from different databases, websites and other available sources were collected. A systematic review of collected literature was done in detail.

#### **Findings**

Green HRM involves undertaking environment-friendly HR initiatives resulting in greater efficiency, lower costs and better employee engagement and retention, which in turn, help organizations to reduce employee carbon footprints by electronic filing, car sharing, job sharing, teleconferencing, and virtual interviews, recycling, telecommuting, online recruitment and training, energy-efficient office spaces, etc. The Green Human Resource Management plays an important role in the industry to promote the environment-related issues. Organizations must formulate HR policies and practices, train people to increase awareness about the environment, and implement laws related to environmental protection. The Green HRM may also help the employers, manufacturers in building brand image and reputation. Organizations need to conduct an environmental audit, thus changing the organizational culture, thinking about waste management, pollution, and helping the society and its people, those are getting affected by pollution. It will also make employees and society members aware of the utilization of natural resources more economically and encourage eco-friendly products.

#### **Conclusion**

Green HRM practices are more powerful tools in making organizations and their operations green. The green performance, green behaviours, green attitude, and green competencies of human resources can be shaped and reshaped through adaptation of green HRM practices. The green human resource management has the responsibility to create green awareness among the new talent and the existing employee working for the organization, encourage their employees for helping the organization to reduce the causes of environmental degradation through green movement, green programs, and practices, retain the resources for future generation. Green HRM can develop inspiration, willingness, and commitment to employees to contribute their ideas and efforts for the awareness and implementation of the Green HRM practices in their organization. The green HRM efforts result in increased efficiencies, sustainable use of resources, less wastage, improved Job-Related Attitude, Improved Work/Private life, lower costs, Improved employee performance, and retention which help the organization to reduce employee carbon footprints by the mean of Green HRM. This effort ultimately leads to the better environmental performance of the organization. To create, practice and maintain environmental related innovative behaviours of employees coupled with the right attitude of greening, green HRM practices are critical. Employees are willing to work in an organization only when they feel it adds to their value profile (Dechant and Altman, 1994). The study conducted by Hewitt Associates in 2009 elaborated that: "86% of employees at organizations with high engagement agreed that they worked for an organization that was socially and environmentally responsible" Same 2009 Study also found out that: "Green HR practices contribute to positive organizational reputation, higher or sustained employee engagement and eliminating waste/reducing their impact on the environment".

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## **YOUNG CONSUMERS' INTENTIONS TOWARDS GREEN PRODUCTS: EXTENDING THE THEORY OF PLANNED BEHAVIOUR**

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**Abstract:** In recent years, Consumers, particularly the younger ones, are becoming increasingly interested in green products as an outcome of the substantial rise in environmental sustainability awareness and concern among society. With regard to understanding young consumers' intentions toward eco-friendly products, this study attempts to investigate and expand upon the Theory of Planned behavior (TPB). Considering the goal of expanding the well-established Theory of Planned behavior (TPB) framework to fully capture the complex influences impacting young consumers' purchase decisions, this study explores their intentions toward environmentally friendly products. This study aims to ascertain the correlation and influence between the following variables: Behavioural intention, Environmental Concern, Perceived Behavioral Control, Attitude, and Subjective Norms. Employing a quantitative methodology, structured questionnaires were used to gather data from a representative sample of Chennai college students. and is analysed using weighted mean, correlation and regression.

**Keywords:** Green product, Environment, Theory of planned behaviour (TPB), Society, Consumers.

### **INTRODUCTION**

The adoption of "green" or eco-friendly products by young consumers is an essential field for research in the fields of psychology of consumers and behavior, offered the growing concern across the environment. Green products are actually gaining popularity in the market as a result of consumers' increased awareness of their health and how their behavior affects their decision to purchase green products. Potential customers' beliefs and behaviors are connected by the theory of planned behavior, which was developed from the theory of reasoned action. In terms of their intentions to buy or use green products, young consumers' attitudes, subjective norms (influence from peers, society, etc.), and perceived behavioral control (perceived ability to perform the



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behavior) are likely to align or diverge, depending on the research. To improve the TPB's applicability in forecasting young consumers' green consumption behavior, the study may also add new factors. Understanding consumer attitudes is crucial for producers, entrepreneurs, and policymakers to understand consumer behavior (**Park and Ha 2012**). In terms of buying or using eco-friendly products, this refers to the preferences or plans of younger consumers. Comprehending their reasons, viewpoints, and plans regarding these items is essential to the research. Therefore, the purpose of this study is to expand and apply the TPB to the explanation of Chennai's youths' intentions to make green purchases.

## **REVIEW OF LITERATURE**

**Franky Varah (2019)**, in their research paper, "**Exploring young consumers' intention toward green products: applying an extended theory of planned behavior**" stated that the study rendered use of a broader version of the theory of planned behavior (TPB) that takes environmental concern and willingness to cover high into account. Survey data from 316 respondents in India was used to test the study empirically. SPSS and STATA software were used to analyze the data. The empirical findings indicated that the extended TPB had an impact on young consumers' intentions regarding green products. Furthermore, every theory was validated, and there is a strong relationship among the five variables that have been examined in connection with buying environmentally friendly products.

**Athapol Ruangkanjanases (2020)**, in their study "**Elucidating the Effect of Antecedents on Consumers' Green Purchase Intention: An Extension of the Theory of Planned Behavior**," asserted that the theory of planned behavior can be broadened by the creation and assessment of antecedents that influence consumers' intentions to purchase green products. Data for the study came from Taiwanese consumers, and the theory of planned behavior was used to examine how they saw social responsibility in an empirical manner. The findings suggested that the voluntary participation component of the environmental wave is far more important than the necessary social pressure that goes along with it, as all remaining factors—aside from consumer subjective norms—showed significant positive relationships with the planned behavior..

**Rambalak Yadav and Govind Swaroop Pathak (2016)** in their research paper, "Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior" stated that the study recognizes the need of young consumers in India, a developing country, to purchase environmentally friendly products. The study's theoretical foundation was the Theory of Planned Behavior (TPB), which it attempted to expand upon by adding the concepts of environmental concern and environmental knowledge. Data collected through a self-administered questionnaire survey was analyzed using structured equation modeling (SEM). The research revealed that TPB is a useful predictor of young consumers' propensity to buy environmentally friendly goods. Given that the predictive utility of the suggested model increased (from 27.1% to 37.7%), the result demonstrated the applicability of adding more constructs to TPB.

**Matthew Tingchi Liu and Yongdan Liu (2019)** in their research paper, "**Moral norm is the key**

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**An extension of the theory of planned behaviour (TPB) on Chinese consumers' green purchase intention"** stated that the study looked at one consumer response (Purchase intention) and four components (subjective norms, perceived behavior control, moral norms, and attitude). Data was collected from the questionnaire survey of 485 Chinese consumers and was analysed using structural equation modeling. The results showed that the morally expanded TPB framework outperforms the original TPB model in predicting the green purchase intentions of Chinese consumers. Purchase intentions are primarily predicted by attitude, and the relationship between the original construct of subjective norms and purchase intentions is found to be mediated by moral norms. The results also showed that the fundamental mechanism underlying the association between attitude and subjective norms is moral norms

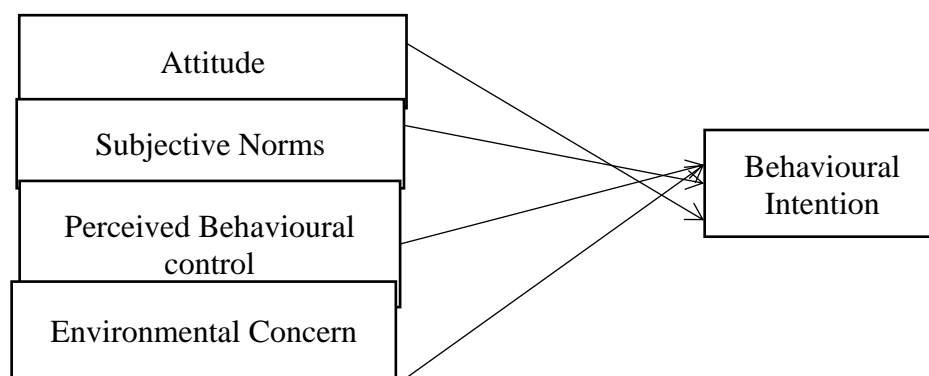
**NEED FOR THE STUDY**

Environmental sustainability has led to the concept of "Green products" to become increasingly prevalent throughout the world. The Theory of Planned Behavior (TPB) continues to be a key conceptual framework for understanding behavioral intentions in the context of this changing environment. However, this well-established theoretical model needs to be enhanced and improved due to the particular complexities present in the decision-making processes of young consumers with regard to green products. This study aims to examine the relationship between the following factors: environmental concern, perceived behavioral control, attitude, subjective norms, and behavioral intention with regard to purchasing green products. The researchers might adopt a more thorough approach to understanding how buyers view green products in general.

**OBJECTIVES OF THE STUDY**

- To examine the various factors of theory of planned behavior and behavioral intention towards green products
- To determine how factors of the theory of planned behavior relate to behavioral intention
- To determine how factors of the theory of planned behavior impact the behavioral intention

**RESEARCH MODEL:**



**Theory of Planned Behaviour (TPA)**

**Source:** Franky Varah (2019)

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### **RESEARCH METHODOLOGY**

The first phase of this study involved finding out about green products by looking through various periodicals and journals. The approach to research is both analytical and empirical. A sample of 110 residents in Chennai who buy green products was chosen from the list using the Purposive Sampling Technique. We gave the surveys through Google Forms. To assess the factors, participants were asked to rate them on a Likert scale from 1 (Strongly Disagree) to 5 (Strongly Agree). SPSS was used with regression analysis, weighted mean and Karl Pearson correlation. Both the validity and reliability tests were done and their results were as expected. The result from the Cronbach's Alpha Reliability Test suggested the questionnaire had a reliability of 0.919.

### **ANALYZING AND INTERPRETING DATA**

A demographic profile is an in-depth summary or examination of the traits of a particular population segment or group of people. It entails gathering and analyzing data on numerous demographic characteristics that characterize and classify people within a specific group. Table No. 1 below lists the respondents' classification according to the different demographic variable categories.

**Table 1**

**The respondents' overall demographic profile**

<b>Demographic variables</b>	<b>Category</b>	<b>Frequency (N=110)</b>	<b>Percentage (100%)</b>
Gender	Male	45	40.1%
	Female	65	59.9%
Age	17-20 years	81	73.6%
	21-24 years	29	26.4%
Educational qualifications	Undergraduate	72	65.5%
	Post graduate	26	23.6%
	Others	12	10.9%
Income	Lessthan Rs.30000	41	37.3%
	Rs.30000-	35	31.8%
	Rs.50000	23	20.9%
	Rs.50000-	11	10%
	Rs.100000		
	Above Rs. 100000		

### **Source: Primary Data**

The following is followed by the information about the respondents' demographic profile as shown in Table No. 1 above. It can be concluded that, in terms of gender, the majority of respondents (59.9%) are female and the minority of respondents (40.1%) are male. Regarding age, it can be noticed that the majority of respondents (73.6%) are between the ages of 17 -20 years, while 26.4%

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are between the ages of 21-24 years. Regarding educational background, it can be established that while 23.6% of respondents fall into the post-graduate category, the majority of respondents (65.5%) are undergrads. 10.9% of those surveyed fall into the Others (Diploma..) category. Based on the data, it can be deduced that the majority of respondents (37.3%) earn less than Rs. 30,000 per month. 31.8% of the participants earn between Rs. 30,000 and Rs. 50,000 per month. Twenty.9% of the respondents make between Rs. 50,000 and Rs. 100,000 per month. Ten percent of the participants earn more than Rs. 100,000 per month.

The analysis's next section uses a weighted mean to identify the factors of green products. Every statement is rated on a five-point Likert scale that goes from "Strongly Agree" (five) to "Strongly Disagree" (one). The weighted mean score for each statement is computed and is displayed in Table No. 2 as follows.

**Table 2**

**Factors of Theory of Planned Behaviour and Behavioural Intention**

S.No	Factors	Weighted mean
1	Attitude	<b>4.25</b>
2	Subjective Norms	3.84
3	Perceived Behavioural control	3,80
4	Environmental Concern	4.03
5	Behavioural Intention	3.98

#### **Source: Primary Data**

The weighted mean scores for attitude, subjective norms, perceived behavioral control, environmental concern, and behavioral intention are displayed in the above table. It reveals that the environmental concern and attitude weighted mean scores are higher than 4. This suggests that the respondents believe that these factors have had an effect on consumers' behavioral intention to purchase Green products. This suggests that there is a significant tendency for the population under study to have positive attitudes and to be more environmentally conscious.

Additionally, it shows that the weighted mean scores for perceived behavioral control and subjective norms are higher than 3. It is evident from this that the respondents have agreed to a moderate extent that these factors emphasize the importance of social influences, the perception of having control over behavior, and the intention to engage in the specified behavior within this category.

The analysis that follows employs correlation analysis to examine the relationships between the components of green products.

#### **CORRELATION**

Relationship amongst the Factors of the Study, the Hypotheses framed and tested include:

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Relationship between Factors of Green products and Behavioral Intention

**Hypothesis H1:** There is a significant relationship between Attitude and Behavioral Intention

**Hypothesis H2:** There is a significant relationship between Subjective Norms and Behavioral Intention

**Hypothesis H3:** There is a significant relationship between Perceived Behavioral control and Behavioral Intention

**Hypothesis H4:** There is a significant relationship between Environmental Concern and Behavioral Intention

**Table 3**

**Relationship between Factors of Green products and Behavioural Intention**

Factors of Green products	“r value”
Attitude	.604**
Subjective Norms	.613**
Perceived Behavioural control	.742**
Environmental Concern	.691**

**Sources: Primary data**

Note: \*\*Correlation is significant at the 0.01 level ( 2-tailed)

At the 1% significance level since  $p < 0.01$ , the analysis presented in the above table demonstrates a strong and statistically significant positive relationship between Attitude, Subjective Norms, Perceived Behavioral Control, Environmental Concern, and Behavioral Intention. As a result, the hypotheses (H1, H2, H3, and H4) have been accepted. This indicates that it emphasizes the importance of this relationship and the interdependence and mutual impact that these factors have on one another. The results corroborate the claim that within the sample population, a positive attitude, subjective norms, perceived control, increased environmental concern, and strong behavioral intention are closely related.

The analysis's next section uses regression analysis to ascertain how the variables pertaining to green products affect attitudes and purchase intentions.

## **REGRESSION**

**Impact of Factors of Green products on Behavioural Intention**

**Hypothesis H5-H8):** There is a significant impact of the factors of Green products (Attitude, Subjective Norms, Perceived Behavioural control, Environmental Concern) on Behavioural Intention

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**Table 4**

**Impact of Factors of Factors of Green products and Behavioural Intention- Regression**

Model	Unstandardized Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.044	.279		1.595	.114
ATT	.162	.089	.149	1.829	.070
SN	.100	.069	.123	1.463	.147
PBC	.364	.076	.405	4.781	.000**
EC	.269	.075	.288	3.579	.001**
<b>R Value</b>	0.815				
<b>R<sup>2</sup> value</b>	0.665				
<b>F value</b>	51.508				
<b>P value</b>	0.000				

**Source: Primary data**

Dependant variable: **Behavioural Intention**

Note: \*\*denotes significant at 1% level

Based on Table 4, it is clear that there is a strong positive relationship between the factors of green products and behavioral intention, as indicated by the multiple correlation coefficient (Multiple R) of 0.815.

With an R<sup>2</sup> value of 0.665, the components of green products account for somewhat 66.5% of the variation in behavioral intention.



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**The Regression Equation is Y, Behavioural Intention** = 0.364 (Perceived Behavioural control), 0.269(Environmental Concern), 0.162(Attitude), 0.100(Subjective Norms), 0.044(Constant)

Because  $p < 0.01$  indicates a significant positive impact at the 1% level of significance, it can be concluded that perceived behavioral control and environmental concern had a positive impact on behavioral intention. As a result, the hypothesis is accepted. These results highlight the critical roles that environmental concern and perceived behavioral control play in forming and influencing behavioral intention when it comes to purchasing environmentally friendly products. It also suggests that addressing these factors through interventions could result in significant improvements in the surveyed demographic's willingness to engage in the desired behavior.

Subjective norms and attitude were not significant factors. The empirical results did not support a significant relationship between these factors and the intended behavior, despite their theoretical relevance. This indicates that attitudes and subjective norms may not have a major influence on the behavioural intentions of young people in the population surveyed.

### **LIMITATIONS AND SCOPE FOR FURTHER STUDY:**

- The questionnaire's limitations are relevant to the objective of the study.
- Environmental Knowledge, a predictor of the Extended Theory of Planned Behavior, can be the subject of further research.
- The elements of Reasoned action toward buying environmentally friendly goods can be taken into account.
- More research can be done to look at how people's purchasing power and standard of living are affected by the high price of green products.

### **CONCLUSION**

According to the study's findings, the majority of respondents are female, between the ages of 17 and 20, pursuing undergraduate degrees, and having an income of less than Rs. 30000. A significant tendency towards positive attitudes and increased environmental consciousness among the surveyed population is indicated by the weighted mean scores for both environmental concern and attitude that are higher than the 4-point threshold. A somewhat positive trend can be seen in the surveyed population if the weighted mean scores for Subjective Norms, Perceived Behavioral Control, and Behavioral Intention are greater than 3. At the 1% significance level, the results of the analysis show a strong and statistically significant positive relationship between Attitude, Subjective Norms, Perceived Behavioral Control, Environmental Concern, and Behavioral Intention. The aforementioned finding highlights the significant influence of environmental concern and perceived behavioral control on behavioral intention, emphasizing the role that these factors play in shaping the intended behavior. This conclusion emphasizes the need for more research or consideration of alternative influential factors in understanding and shaping behavioral intentions within the surveyed population, while also acknowledging the lack of significance in the relationship between Attitude, Subjective Norms, and Behavioral Intention. The planned behavior model theory will enhance consumers' intentions to purchase environmentally friendly products.

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## **A STUDY ON IMPACT OF AI POWERED PERSONALISATION ON CONSUMER ENGAGEMENT IN PURCHASE DECISION THROUGH DIGITAL MARKETING**

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*Abstract; This study examines how customers view AI-powered marketing and how they affect their online buying habits. Retailers must comprehend how consumers view AI-driven marketing tactics in order to improve engagement and boost sales as these technologies have a growing impact on the digital marketing industry. This study includes 80 respondents in order to assess their opinions regarding AI marketing, including dynamic pricing strategies, targeted ads, and personalised recommendations. According to the results, customers generally see AI-driven marketing as relevant and convenient, which increases their trust in online merchants. Acceptance is still somewhat hampered by worries about data privacy and the openness of AI systems. The study finds a positive relationship between enhanced online shopping habits and good consumer impressions of AI-driven promotions, indicating that efficient use of AI can lead to greater average order values and more frequent purchases.*

*Keywords: Artificial Intelligence, Chatbot, Internet of Things(IoT), data analytics*

### **1. INTRODUCTION**

Artificial Intelligence (AI) has transformed various sectors by facilitating enhanced processes, data-driven decision-making, and creative solutions. Across various sectors, including healthcare and finance, the potential of AI encompassing machine learning, natural language processing, and predictive analytics has been utilised to revolutionise conventional methods<sup>i</sup>. In digital marketing, AI has brought about remarkable advancements in personalisation, enabling businesses to customise their strategies according to the unique behaviours and preferences of individual consumers.

Digital marketing provides an engaging experience for clients through the use of AI in advertising on social media and digital platforms<sup>ii</sup>. These platforms meticulously evaluate users' information prior to guiding them towards offers that align with their preferences. AI plays a crucial role in

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helping marketers identify and predict trends. It safeguards the organisation against excessive expenditure on digital advertising and guarantees that the funds are utilised effectively. Personalised marketing utilises advanced algorithms to scrutinise extensive datasets, providing tailored content, offers, and customer interactions<sup>iii</sup>. Artificial intelligence (AI) solutions in digital marketing can evaluate enormous volumes of web data and derive the precise insights required for objectives. The development of AI has streamlined the creation of client profiles and enhanced the understanding of the customer journey process. This allows marketers to effectively provide valuable personalised content customised for various customer profiles at each point of the marketing funnel and across all platforms<sup>iv</sup>. By leveraging previous data, AI systems in digital marketing may discern the content most likely to re-engage clients with the site.

AI improves customer satisfaction and increases engagement and loyalty, which are essential in the current competitive market environment. Small and Medium-sized Enterprises (SMEs)<sup>v</sup> are essential to the global economy, making substantial contributions to both employment and GDP. Nonetheless, small and medium-sized enterprises frequently encounter distinct obstacles, including restricted resources, financial limitations, and insufficient technical know-how, which can impede their capacity to compete with larger companies. In the realm of marketing, these obstacles can hinder small and medium-sized enterprises from executing advanced strategies that necessitate significant investment in technology and specialised knowledge<sup>vi</sup>. In light of these challenges, the integration of AI for tailored marketing automation offers a significant opportunity for SMEs to improve customer experience and boost sales, ultimately creating a more equitable competitive landscape<sup>vii</sup>. This will outline the optimal price for maximising conversions, identify the ideal posting times, and determine which subject lines capture the most attention, among other insights. It streamlines tasks and fosters greater creativity and innovative thinking. This also enhances the value for the customers who gain from it.

### ***Relevance of AI in Digital Marketing:***

Artificial intelligence (AI) is significantly influencing the digital marketing sector, transforming marketing strategies and analyses of consumer behaviour. Through the utilisation of artificial intelligence, organisations are able to implement marketing plans that are driven by data, target specific consumer segments, and personalise marketing messages<sup>viii</sup>. Artificial intelligence in digital marketing has significantly transformed the digital world. This has allowed marketing professionals to examine extensive data sets, yielding significant insights into consumer behaviour and preferences. AI has progressively grown essential in digital media, assisting firms in formulating successful marketing plans and enhancing brand awareness. AI applications in digital marketing have enhanced marketing communication and created networking chances with industry experts, promoting growth marketing tactics in the corporate sector<sup>ix</sup>. The influence of AI on digital marketing includes the transformation of social media analytics, the formulation of global marketing management strategies, and the reconfiguration of content marketing. It functions as a strategic management instrument for leading corporations, establishing significant relationships while transforming digital media applications<sup>x</sup>. These advancements demonstrate how AI is revolutionising corporate marketing strategy by delivering insights and optimising methodologies

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that were once unattainable. Utilising AI in digital marketing is vital for maintaining a competitive edge, rendering it an indispensable approach for global enterprises.

Among the applications of artificial intelligence in digital marketing include marketing communication, marketing through email, marketing through social media, and marketing through content. Professionals who want to make a meaningful impact in this rapidly evolving field absolutely need to have a solid understanding of the function that artificial intelligence plays in digital marketing.

#### ***Significance of Personalisation in Digital Marketing :***

In the swiftly changing landscape of modern business, personalised marketing has become a fundamental approach, transforming how organisations interact with their audiences. In an information-rich environment, the capacity to customise messages, goods, and experiences to individual tastes is not merely beneficial but imperative. Here are essential arguments underscoring the significance of personalised marketing in the contemporary corporate landscape

Augmented Customer Interaction

Enhanced Customer Satisfaction

Enhanced Conversion Rates

Enhanced Marketing Expenditure

Analytical Decision-Making Strategic

Edge Opportunities for Cross-Selling and Upselling

Adjustment to Consumer Anticipations

#### ***Key Applications of AI in Digital Marketing***

Artificial intelligence significantly impacts digital marketing. Marketers may utilise AI to comprehend consumer behaviour, activities, and indicators. Consequently, they may accurately direct the appropriate strategy to the suitable people promptly and efficiently. Marketers can employ AI in marketing to rapidly analyse extensive volumes of data from social media, emails, and the internet. It can be utilised alongside marketing automation to facilitate the conversion of data into decisions, significant interactions, and a positive impact on business results. AI marketing facilitates data collecting, consumer insight acquisition, customer behaviour prediction, and automated marketing decision-making.

***Integrate business processes:*** AI leverages information technologies to integrate comprehensive business operations and deliver a seamless experience. Marketers who leverage AI's capabilities demonstrate superior performance in marketing outcomes within organisations. AI applications in marketing empower marketers to devise and execute innovative tactics that are more tailored and human-centric<sup>xi</sup>. These approaches frequently excite customers and transform them into fervent brand advocates. Interaction designs may become more attractive with technologies such as AI, enabling consumers to exert control over micro-moments. The increasing advantages of AI empower organisations and transform marketing for an enhanced experience.

***Examine vast volumes of market data:*** Artificial Intelligence can assess extensive volumes of market data and forecast the subsequent actions a user is likely to undertake<sup>xii</sup>. It encompasses billions of search queries and aids in assessing a user's proximity to making a purchase. AI facilitates the comprehension of deficiencies and the implementation of corrective measures. The

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influence of AI and ML transcends the mere provision of basic tools. It profoundly transforms the execution of our business processes. It affects businesses to the extent that it practically triples their efficiency.

***Provide essential information:*** AI technologies facilitate processes by analysing each new data point and providing clients with more pertinent information based on their preferences. It should be considered a mechanism for directing marketing initiatives towards elevated goals. AI will certainly aid marketers in integrating advanced technology with human creativity to analyse, understand, and engage with contemporary consumers on a personal level through hyper-personalized, pertinent, and timely communication<sup>xiii</sup>. Algorithms effectively evaluate a website visitor's behaviour to tailor and promptly provide personalised advertising content. Data is continuously gathered and employed to inform future advertising content adjustments. By utilising personal and behavioural data, AI will enable sellers to concentrate more on results and support their clients. Psychographics will yield more in-depth insights into the objectives, aspirations, and buying behaviours that affect customers' decisions to select a product or service through AI.

***Facilitate accessible client assistance:*** AI facilitates the provision of intelligent, straightforward, and convenient customer care to clients at every stage of their journey. It is essential for a smooth and optimal user experience. Marketing automation strategies focus on the automation of repetitive marketing tasks and activities<sup>xiv</sup>. AI applications in marketing are particularly significant for marketing automation. AI acquires and analyses customer data instantaneously through machine learning and implements those insights on a large scale. Artificial intelligence facilitates the segregation, categorisation, and prioritisation of this data. AI-driven marketing automation solutions are transforming marketing automation strategies. Next-generation platforms are expected to enhance marketing strategies by catering to dynamic requirements, including hyper-personalized products for clients.

***Prioritise customer-centric decisions:*** The insights that AI offers to organisations are great resources for understanding their consumers more effectively and making customer-centric decisions. AI delivers external market insights by assessing extensive web content from social media platforms, blogs, and several other sources<sup>xv</sup>. Marketers can swiftly generate consumer profiles utilising billions of data points derived by AI technologies. They include on-site encounters, area promotions, purchasing behaviours, previous interactions/communications, referral sources, and other factors.

***Customer Shopping Processes:*** Artificial Intelligence can create simulation models and customise retail operations by offering recommendations derived from machine learning technology and interacting with virtual assistants. A multitude of companies are utilising AI to engage with their customers. Amazon use artificial intelligence to suggest products based on prior purchases, views, and searches<sup>xvi</sup>. These advanced technologies are continually evolving and are nearing the capability to surpass human performance in specific domains. AI supersedes human capability in identifying marketing trends due to its superior knowledge, data analysis, and input. These can analyse data to precisely forecast target consumers' purchase behaviours and decisions, hence enhancing user experience to meet the audience's authentic demands.



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### ***Digital Advertising:***

Artificial intelligence is commonly utilised in digital advertising to optimise effectiveness. Advertisements are customised by analysing user data, encompassing gender, age, interests, and additional factors. Marketers can employ AI technology to identify microtrends and predict trends. They will subsequently be capable of making strategic assessments. Thus, organisations may minimise digital advertising inefficiencies and guarantee that their investments provide optimal returns<sup>xvii</sup>. Artificial intelligence shapes the future of digital marketing by harnessing the capabilities of the Internet of Things and interconnected gadgets.

***Enhanced client satisfaction and revenue:*** Artificial intelligence can be utilised in numerous applications within marketing. Each application possesses benefits, including diminished danger, enhanced speed, elevated customer satisfaction, and greater revenue, among others. AI solutions can rapidly determine budget allocation across various channels, guaranteeing consistent client engagement and maximising campaign value. Artificial intelligence can facilitate the delivery of customised messaging to customers at optimal moments in their lives<sup>xviii</sup>. This technology may assist marketers in identifying at-risk clients and supplying information to encourage them return to the business. AI-driven dashboards provide comprehensive insights into effective strategies, enabling replication across channels and optimal allocation of resources.

## **2. OBJECTIVES OF THE STUDY**

RO1: To study the impact of AI- powered personalization on customer engagement in purchase decision through digital marketing.

RO2: To study the relation between the emotional persuasion towards consumer engagement in shaping purchase decisions.

RO3: To comprehend the importance of artificial intelligence in digital marketing.

## **3. REVIEW OF RELATED LITERATURE**

**Maria Nascimento Cunha (2024)<sup>xix</sup>** Within the tourism and hospitality industries, the purpose of this article is to investigate and shed light on the significant impacts that Artificial Intelligence (AI) and Machine Learning (ML) have had on marketing strategies and the level of engagement that customers have with those strategies. This article makes use of a quantitative methodology, specifically cluster analysis, in order to efficiently categorise and comprehend complex multivariate data. This research highlights the considerable impact that Artificial Intelligence (AI) and Machine Learning (ML) have had on the tourism and hospitality industries, particularly with regard to the transformation of marketing strategies and the enhancement of consumer interaction. Several noteworthy outcomes have been brought about as a consequence of the utilisation of cluster analysis, specifically the k-means method, which has made it possible to gain a more profound comprehension of the patterns of customer behaviour.

**Ravi Teja Potla and Vamsi Krishna Potla (2024)<sup>xx</sup>** The idea of incorporating machine learning and artificial intelligence with Salesforce CRM to offer highly customised customer experiences and improve customer engagement was presented in this paper. The research's thorough examination of case studies and actual empirical data shows that, immediately following the implementation of AI-driven personalisation strategies in Salesforce, there were significant gains

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in the main metrics measuring customer engagement, including click-through rates, conversion rates, and customer satisfaction scores. It also discusses ethical issues, the need for openness in AI decision-making processes, and some of the difficulties and debates surrounding the use of AI in a CRM setting with relation to protecting customer data.

**Sodiq Odetunde Babatunde, et.al., (2024)<sup>xxi</sup>** This study investigates the transformative capacity of Artificial Intelligence (AI) in the customisation of marketing strategies. The research investigates the theoretical underpinnings of customer engagement and analyses the implementation of AI in developing targeted and pertinent marketing experiences. Artificial intelligence can tailor messages according to consumer behaviour and demographic data, thereby optimising the communication pathway and enhancing engagement. The findings of the study states that artificial intelligence can customise gamified marketing experiences by aligning rewards and challenges with individual consumer preferences, thereby enhancing engagement. It further states that enhanced conversion rates result from personalised marketing campaigns that are highly targeted and effective, thereby increasing conversions and sales.

**Nitin Liladhar Rane (2023)<sup>xxii</sup>** this study investigates the application of advanced technologies, including Artificial Intelligence (AI), Internet of Things (IoT), and Big Data, to strengthen customer loyalty through improved satisfaction, engagement, relationships, and experiences. This analysis offers an in-depth assessment of the synergistic integration of these technologies, emphasising their unique roles in improving different aspects of customer loyalty. The analysis highlights the significant impact of Big Data technology in allowing organisations to derive actionable insights from large datasets, thus supporting the creation of targeted strategies aimed at enhancing customer satisfaction and loyalty. This study presents a thorough examination of the collaborative dynamics among AI, IoT, and Big Data, delivering essential insights for businesses aiming to utilise data-driven technologies to enhance customer loyalty, satisfaction, engagement, relationships, and overall experiences. The initial section examines the significance of IoT technology, highlighting its influence on collecting real-time customer data and enabling tailored experiences.

**Abid Haleem (2022)<sup>xxiii</sup>** this paper reviews the role of AI in marketing. This study examines the specific applications of AI across various marketing segments and their transformative effects on marketing sectors. The report suggests that marketers may leverage AI to provide customised customer experiences and improve marketing analytics methods to discover prospective customers in the future. Every interaction that a prospect or consumer has with a product or solution can be recorded and leveraged to improve the product or service in future versions. Marketers will have an opportune moment to begin experimenting with AI strategies to facilitate the creation of highly personalised customer experiences.

## **METHODOLOGY**

### ***Sampling***

Convenience sampling was utilised to select the participants for the study. Participants were selected because on their accessibility and willingness to participate, facilitating a swift and efficient data collection process. The sample size for the study is restricted to 80

### ***4.2. Data Collection***

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A structured questionnaire featuring closed-ended questions were developed to gather quantitative data. This questionnaire addresses subjects related to AI-driven personalisation, customer purchasing decisions, and demographic information. A thorough examination of relevant prior research and literature were undertaken to gain deeper insights into consumer perspectives and experiences related to personalised marketing.

#### **4.3. Data Analysis**

##### **SIMPLE PERCENTAGE METHOD**

##### **4.3.1. Overall Reliability**

Cronbach's Alpha	N of items
0.7	80

The responder received the surveys in order to collect data. Scale Alpha Coefficients, a measure of overall dependability, revealed strong support for construct validity. Since the study's total Cronbach alpha score is 0.7, it is thought to have higher overall reliability.

#### **LIMITATIONS OF THE STUDY**

Convenience sampling has the potential to create bias, limiting the generalisability of the findings. In addition, there is a possibility of response bias in data that is self-reported. Furthermore, the size of the sample may restrict the scope of the study in terms of providing an accurate representation of the entire complexity of consumer behaviour in the context of the online media landscape. The researcher had made an attempt to maximise the validity and reliability of the conclusions of the research by employing acceptable procedures and triangulating the data.

#### **DATA ANALYSIS AND INTERPRETATION**

**Table 6.1 Descriptive Statistics**

Variable	Mean	Median	Minimum	Maximum
Age(Years)	28.5	25	18	65
Daily Social Media Use (hours)	4.3	4	1	10
Number of Social Media Accounts	3.6	3	1	5
Number of Posts Shared per Week	9.2	9	1	25
Engagement Rate (%)	14.7	14	3	30
Purchase Intentions (1-5 scale)	3.9	4	1	5
Overall Shopping Behavior Score	18.5	18	5	25

*(Source: Computed)*

A number of intriguing patterns about the demographic characteristics of the respondents as well

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as their actions in relation to the use of social media and online shopping are revealed by the descriptive statistics for the eighty individuals who expressed their opinions. Considering that the average age of the people who responded to the survey is 28.5 years, it can be concluded that the population is relatively young. There is a significant amount of interaction with social media platforms, as evidenced by the fact that the respondents spend a median of four hours each day on social media. The average amount of time that respondents spend on social media each day is 4.3 hours. There is a significant number of responders who are active across many platforms, which may have an impact on the exposure they receive to various marketing initiatives. The average number of social media accounts that respondents have is 3.6, which indicates that many of them are engaged across numerous platforms. There is a high level of activity in content sharing, as evidenced by the fact that the respondents share an average of 9.2 posts every week. This behaviour, which displays active participation, is likely to enhance engagement with their followers since it demonstrates active participation. When it comes to the content that is shared, the emotional appeal rating suggests that respondents have a moderate response to the content that is shared, while the average engagement rate of 14.7% indicates that there is a moderate amount of connection with the material that is shared.

Furthermore, the average score for purchase intention is 3.9, which suggests that respondents are often encouraged to contemplate purchasing products when emotionally resonant advertising is displayed to them. This is because the score indicates that the respondents are interested in making a purchase. Lastly, but certainly not least, a good propensity towards shopping conduct is indicated by a total score of 18.5 for shopping behaviour. It was clear from the fact that the scores ranged from a minimum of five to a maximum of twenty-five that the individuals who took part in the survey had a wide range of purchasing approaches. When the context of AI-driven marketing is taken into consideration, these data offer a fundamental understanding of the ways in which demographics and engagement levels may influence the behaviour of consumers.

**TABLE 6.2 CORRELATION ANALYSIS OF EMOTIONAL PERSUASION AND CONSUMER ENGAGEMENT**

Variable	Emotional Persuasion	Consumer Engagement (%)
Emotional Persuasion	1.00	0.68**
Consumer Engagement (%)	0.68**	1.00

*(Source: Computed)*

Table 6.2 indicates a significant positive correlation between the emotional persuasion of AI-driven personalisation and consumer engagement. At a statistical significance level of  $p < 0.01$ , the correlation coefficient between the Emotional Persuasion Rating and the Engagement Rate (%) is 0.68. This signifies that the outcome is statistically significant. This indicates that as the emotional persuasion of personalisation intensifies, there is a corresponding rise in consumer involvement levels. This link is important as it demonstrates that emotionally resonant content is more likely to capture client attention, resulting in heightened engagement rates with promotional material. This discovery supports the notion that emotional persuasion is a crucial element in influencing client involvement with an artificial intelligence-driven marketing approach. Armed with this newfound information, marketers may enhance their advertising strategies by focusing on creating content

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that provokes strong emotional responses from consumers. This may result in heightened consumer engagement and a shift in purchasing behaviour. The results of this correlation analysis substantiate the assertion that a robust positive relationship exists between emotional persuasion and consumer engagement in online purchasing activities.

## **RESULTS AND DISCUSSION**

The analysis offers a thorough examination of the data, the clustering methodology, and the interpretation of the resultant clusters. It proficiently conveys the essential facts and insights extracted from the dataset. Regarding outcomes and discourse. Table 6.1 classifies respondents according to their typical daily internet usage, weekly post sharing, number of accounts, presenting minimum, maximum, and mean values for each category. The analysis of categories indicates clear patterns of internet usage among respondents, varying from low one-hour usage to constant online engagement. The data is predominantly categorised, and the mean values within each category provide insights into standard internet usage patterns.

The study's findings also demonstrate the significance of emotional appeal in AI-driven advertisements and its impact on consumer purchase decision. Consumers are more likely to interact with promotional content that elicits intense emotions, evidenced by the positive correlation of 0.68 between the Emotional Persuasion Rating and the Engagement Rate (%). This aligns with existing research indicating that consumers' emotional responses significantly influence their behaviours and decisions in online digital marketing.

## **8. CONCLUSION**

Artificial intelligence is an emerging technology in digital marketing that has the capacity to enhance its influence on consumer purchase decision. AI marketing represents an innovative marketing strategy that enables firms to transition from marketing automation to marketing personalisation with greater efficacy. The influence of AI on digital marketing has intensified in recent years, enabling marketers to tailor sales and marketing initiatives beyond anticipated levels. Due to the extensive data accessible, marketers have tailored their sales and marketing strategies, surpassing customer expectations beyond their imagination. AI engineering possesses the capacity to transform the delivery of services and products to consumers. In conclusion, digital marketing automation is increasingly dynamic, and data for assessing consumer behaviour yields highly predictive outcomes. The integration of AI assists firms in identifying target clients on digital marketing platforms, comprehending customer demands and preferences, and enhancing transparency. AI tools in digital marketing platforms are incorporated into live chat through chatbots that interact with consumers by swiftly addressing enquiries inside an intuitive interface. By integrating artificial digital marketing intelligence technology with human-generated data, firms may foster trust in digital platforms and enhance positive, personalised client experiences through comprehensive analysis

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