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Editorial

Transforming Libraries into Smart Knowledge Ecosystems: Libraries have long functioned as centers for preserving knowledge and cultural heritage. In the present digital age, their role is expanding beyond storage and access to active participation in knowledge creation and sharing. The rise of a knowledge-oriented society requires libraries to evolve into dynamic, technology-driven ecosystems. This transformation is not limited to adopting new tools; it also involves rethinking structure, services, and institutional goals. Today's libraries are gradually emerging as inclusive environments that promote learning, research, and community engagement while ensuring fair and equitable access to diverse information resources for all sections of society.

A key element in this transition is the adoption of forward-looking management practices. Libraries must prioritize user needs, rely on evidence-based decisions, and adopt flexible operational frameworks. Strong leadership, continuous professional development, and effective evaluation systems are vital for managing both physical and digital assets. Librarians now serve as knowledge facilitators, helping users navigate complex and expanding information networks. Supportive policies and institutional backing further enable this shift by ensuring consistent funding, infrastructure improvement, and smooth integration of advanced technologies across academic and public library systems globally.

Technological advancements are central to modern library transformation. The use of artificial intelligence, machine learning, cloud platforms, and interconnected systems has improved efficiency and accessibility. Digital collections, automated indexing, and remote access services allow users to obtain information without geographical limitations. Technologies such as RFID and smart monitoring systems streamline operations and minimize manual workload. Together, these innovations contribute to building responsive, user-friendly, and sustainable library systems suited for rapidly evolving educational and research environments worldwide.

Libraries are also becoming spaces for creativity and innovation. Facilities such as makerspaces, digital studios, and collaborative learning zones encourage users to create and apply knowledge. This evolution promotes analytical thinking, creativity, and lifelong learning. However, barriers such as limited funding, skill gaps, and reluctance to adopt change must be addressed through training, policy support, and stakeholder collaboration. Ultimately, well-transformed libraries will act as catalysts for building an informed, innovative, and future-ready society.

“A transformed library empowers minds to learn, create, and lead the future.”

New Delhi

Editor-in-Chief

31st January 2026



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Contents

1.	Employee Perception toward Human Resource Practices: Evidence from Private Sector Organizations	1
	A. Sophia Alphonse, S. Dhanupriyan	
2.	A Study on the Socio-Economic Conditions of Goldsmiths in Tiruchirappalli District	9
	K. Jensi Helen, T. Sibi Koushick	
3.	A Study on the Effect of Culture, Low Income, Resistance and Microfinance on Street Vending: Evidence from Tiruchirappalli City	16
	A. Christo Merlin, D. Muthusamy	
4.	Impact of Work–Life Balance on Working Women in the Banking Sector in Kanchipuram District	21
	A Pauline Anucia Mary, R. Thangasundari	
5.	Challenges Faced by Business Sectors During Covid 19	26
	S. Rizvan Ahamed, Y. Razeeth Khan	
6.	The Psychology of Consumers’ Preference and the Behaviour Analysis on Refrigerators	30
	A. Viyani Jenita Mary, S. Shanthi Getzie Ranjini Devi	
7.	Work-Life Balance and Stress Management of Employees in Tamil Nadu State Transport Corporation in Kumbakonam District of Tamil Nadu	35
	M. Viji, B. Varadarajan	
8.	A Study on Demographic Differences in Employee Perception of Human Resource Practices	39
	A. Sophia Alphonse, S. V. Birunthaa	
9.	Unravelling Green Brand Loyalty: The Dual Influence of Environmental Transparency and Perceived Greenwashing, Mediated by Consumer Skepticism in the FMCG Sector	45
	Renukaprasad, Mala K	
10.	Transforming Lives: The Role of Self-Help Groups in Supporting Women Entrepreneurs in Chennai City	50
	S. Lakshmi, D. Muthusamy	
11.	Assessment of Employee Skill Gaps in Selected Manufacturing Sectors at Trichy District	55
	R. Elavarasi, P. Dhanalakshmi	
12.	A Study on Financial Statement Analysis of Cub	60
	Sr. Cathelina, S. Sundari	
13.	The Impact of Well-being on Work-Life Balance: The Moderating Role of Workplace Policies among Women in the IT Sector	64
	Sanjana S, Basheer Ahamed	
14.	Role of Self-Help Groups (SHGs) in Economic Upliftment of Unorganised Women Workers in Mayiladuthurai District, Tamilnadu- A Study	69
	S. Balamurugan, S. Thangavelu	
15.	Customer Satisfaction and Brand Loyalty in Compact SUVs: A Regional Perspective	73
	M. Mohamed Thanseer, M. Sirajudeen	
16.	Role of Artificial Intelligence in Healthcare	78
	K. Visagaswaruban, R. Venkatesan	
17.	The Changing Climate of Work: How Organizational Culture Shapes Employee Commitment in the Digital Age	82
	Gokila S, Virgin Fraga F.X	

18.	Socio-Economic and Entrepreneurial Empowerment of Persons with Disabilities (PWD) with special reference to Tiruchirappalli District R. Thirumurugan, V. Bastin Jerome	86
19.	Corporate Governance and its Influence on Profitability Metrics: Evidence from Emerging Markets in India L. Mythili, M. Vasantha	91
20.	Factors Influencing Consumer Preference for Online Food Delivery Platforms R. Padmanabhan, K. Vijayakumar	95
21.	A Study on Consumer Gratification towards Retail Trader at Tiruchirappalli S. Rizvan Ahamed, Y. Razeeth Khan	99
22.	An Analysis of Contribution of Self Help Group on Financial Growth in Tiruchirappalli City S. Rizvan Ahamed, Y. Razeeth Khan	104
23.	A Study on Demographic Factors Influencing usage, Adoption, and Satisfaction of E-Banking Services with Special Reference to Public Sector Banks in Bengaluru City Gangadhara. B, Mala. K	109
24.	Study on Customer Relationship Management with Special Reference to Select Hotels in Chennai City A. Arthi Immaculate, A. Christina Bridget	115
25.	A Study on Financial Access, Savings Behavior, and Investment Practices of Goldsmiths K. Jensi Helen, Siva Prakasam	119
26.	Technological Adoption and Productivity of Goldsmiths: A Socio-Economic Study K. Jensi Helen	125
27.	Evaluating Consumer Preferences in the Era of Connectivity: A Comparative Study of Wired and Wireless Internet Service Providers M. Mohamed Arief, M. Habeebur Rahman	131
28.	The Exploratory Research on the Relationship Between Brand Equity Dimension and Purchase Intention of Durable Products M. Pongodhy, V. Selvarani	137
29.	Impact of Equity Volatility on Investor Behavior in the Indian Stock Market: Mediating Role of Risk Perception M. Balasubramanian, Mahabooba Kalanjiam S	141
30.	An Empirical Investigation of Organizational Agility and Firm Performance: Exploring the Mediating Effect of Innovation Capability Ruth Ann Taylor, P. Kavitha	147
31.	Impact of Non-Performing Assets on the Financial Performance of Banks in India Deepa S, T. Unnamalai	153
32.	The Effect of using Skin Care Cosmetics on Women's Confidence in Tiruchirapalli – A Study B. Harini, N. Rajamannar	159
33.	Gender-based Comparative Analysis of Plyometric Training Effects on Anxiety Among University Volleyball Players Vignesh. P, B. S. Sha Yin Sha, M. Suresh Kumar	164
34.	A Study on the Impact of Leadership Styles and Organisational Learning on Organisational Innovation Performance with the Mediating Role of Knowledge Management A. Suganya, D. J. Tamilselvi	167

35.	The Role of Employee Attitudes in Shaping Organisational Commitment in SMES: A Structural Equation Modelling Approach Suchita S Shetty, R. Thangasundari	171
36.	A Study on Professional Factors Influencing Commitment of School Teachers in Tiruchirappalli District J. Syed Meeran, M. Abdul Kareem	177
37.	Influence of Online Reviews on Consumer Perception and Purchase Intention of Branded Jewellery in India T. Chitradevi, V. Selvarani	183
38.	Impact of Banks' Financial Support on the Business Performance of Start-Up Enterprises in Bangalore T. Thara, M. Kavitha	188
39.	A Study on Consumer Attitude and Perception towards Eco-Friendly Durable Goods in Ernakulam District Tomy P P, V. Bastin Jerome	193
40.	Professional Stress and its Determinants Among Faculty Members in Higher Educational Institutions: A Study in Bengaluru Vimala B. S., R. K. Senthil Kumar	197
41.	Customer Relationship Marketing as a Driver of Brand Loyalty: an Empirical Study of the Indian Leather Industry A. Javith Raja, J. Mohamed Ali	203
42.	An Empirical Study on Factors Influencing Consumer Buying Attitudes towards Baby Care Products on Facebook K. Sithara Rajan, S. Ramya	209
43.	Study on Awareness and Perception of Green Marketing Initiatives Among Urban Residents of Tiruchirappalli City Corporation, Tamil Nadu M. Esther Hepsibha, V. Bastin Jerome	214
44.	Asymmetric Investor Reactions to Market News During Stock Market Crashes: Evidence from India M. Suganya, J. Gayathri	218
45.	A Study on the Impact of Organizational Work-Life Balance Policies on Job Satisfaction Among Dual Career Couples Kingsley R, Michael David Premkumar	224
46.	Determinants of Bicycle Usage: A Socio-Demographic Study in Tamil Nadu R. John Vimal, Michael David Premkumar	229
47.	An Empirical Study on Cognitive Biases Influencing Investment Decision-Making in Behavioural Finance R. Kiruthika, S. Ramya	234
48.	Exploring Consumers' Awareness Level in Usage of Mobile Banking Services, with Special Reference to Karur City Jayanthi R, N. Naveena	238
49.	Sugarcane Production of the State Tamilnadu Forecasting using Fuzzy Time Series M. Saranya Devi, A. Kachi Mohideen	242
50.	Forecasting Models for Common Human Disease –A Conceptual Study S Poyyamozhi, A. Kachi Mohideen	247

51. A Study on Factors Affecting the Customer Satisfaction towards Fitness Centre	253
M. Thilagavathi, Chi. Nanjappa	
52. Age-Category Differences in Aerobic Fitness: Evidence from U19 and U21 Football Players	258
Saju Kumar. S, V. Uma, Abdussalam. K, M. Suresh Kumar	
53. Exploring the Impact of Multisensory Cues on Consumer Preferences and Purchasing Decisions for Food Products	262
C. Veeralakshmi, S. Basheer Ahamed	
54. Perceptions of Digital Marketing Ethics among Healthcare Professionals in Bengaluru's Corporate Hospitals	266
Maria Alexina Vinotha Rajan, Megala A	
55. Effectiveness of Battle Rope Training in Enhancing Physical and Technical Performance Among Competitive Football Players	271
Muhammed Irshadulhakh, B. S. Sha Yin Sha, Abdussalam, M. Suresh Kumar	
56. A Comparative Study of Occupational Stress Across Different Job Roles in it Organizations	275
S. Selvindelish, D. Fennala Agnes Lylin	
57. A Study on the Relationship Between Performance Appraisal, Compensation Practices, and Employee Perception	280
A. Sophia Alphonse, N. Kowsar Banu	
58. Impact of Working Conditions and Compensation on the Quality of Work Life of Textile Workers in Erode District	287
P. Gandhimathi, E. K. Sivasakthivel	
59. A Management Perspective on Transgression in Invisible Monsters to Identify Reconstruction and Organizational Deviance	292
A. James Anto, Cheryl Davis	
60. Perception of the Customers towards Starbucks Coffee House Company in Chennai	297
P. Annie Rabecca, S. Vasanthi	
61. Role of Online Marketing in Development of E-Commerce in India	301
P. Mary Lissy, S. Vasanthi	
62. Occupational "Stringere" (Stress) – A Review	307
S. Narayanee, T. Kumuthavalli	
63. The Mind Behind the Lecture: A Study of Occupational Stress and Coping Mechanisms in Kanchipuram's College Educators	312
M. Venkatesan, R. Venkatesan	
64. A Study on Customer Satisfaction of Life Insurance Corporation of India in Thanjavur Division	319
B. Sathishkumar, S. Suresh	
65. Socio-Economic Status of Urali Tribes in TamilNadu with Special Reference Sathyamangalam Block, Erode District	324
J. Ramadevi, J. Mohamed Zeyavudheen	
66. Impact of Employee Engagement and Organizational Culture on Employee Productivity: An Empirical Study	330
Hakkim Khan S, J. Vincent Xavier	
67. Study on the Financial Statement Analysis of JK Tyre & Industries Ltd	336
A. Asma Banu, S. Gopi	

Employee Perception toward Human Resource Practices: Evidence from Private Sector Organizations

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ABSTRACT

Human Resource (HR) practices play a crucial role in shaping employee attitudes and perceptions in private sector organizations. Among the various HR functions, recruitment and selection, as well as training and development, are fundamental in determining how employees perceive organizational fairness, competence, and long-term growth opportunities. The present study aims to examine employee perception of selected HR practices in private sector companies, with specific focus on recruitment and selection practices and training and development initiatives.

The study is guided by two primary hypotheses that test the existence of significant relationships between recruitment and selection practices and employee perception, and between training and development practices and employee perception. A descriptive and analytical research design is adopted for the study. Primary data are collected from employees working in private sector companies using a structured questionnaire based on a five-point Likert scale. Appropriate statistical tools such as correlation analysis, t-test, and regression analysis are employed to test the formulated hypotheses and to analyze the strength and direction of relationships between the selected HR practices and employee perception.

The findings of the study are expected to provide empirical evidence on the influence of systematic recruitment and selection processes and effective training and development programs on employee perception. The study highlights the importance of transparent hiring procedures and continuous skill development in fostering positive employee attitudes and organizational commitment. The results are expected to offer valuable insights to HR managers and organizational policymakers in designing effective HR strategies that enhance employee perception and overall organizational performance in private sector companies.

KEYWORDS : *Employee perception, Human resource practices, Recruitment and selection, Training and development, Private sector companies, Organizational commitment, Employee attitude, HR effectiveness, Workforce development, Organizational performance.*

INTRODUCTION

Human Resource Management (HRM) has emerged as a strategic function in modern organizations, particularly in the private sector, where competition, innovation, and productivity determine organizational survival and growth [1]. In an era characterized by rapid technological advancements, globalization, and dynamic market conditions, organizations increasingly recognize that their human resources are among the most

valuable assets. Effective human resource practices not only ensure the availability of competent manpower but also play a critical role in shaping employee attitudes, perceptions, and behaviors toward the organization [2].

Employee perception refers to the way employees interpret, evaluate, and respond to organizational policies, practices, and managerial actions. Positive employee perception is closely associated with higher levels of job satisfaction, commitment, motivation,

and performance, whereas negative perceptions may lead to dissatisfaction, absenteeism, and high employee turnover [3]. In private sector companies, where performance standards are high and work environments are often demanding, employee perception of HR practices becomes a decisive factor influencing organizational effectiveness.

Among the various human resource practices, recruitment and selection and training and development are considered foundational HR functions [4]. Recruitment and selection represent the entry point of employees into the organization and significantly influence their initial impressions and long-term perceptions. A transparent, fair, and competency-based recruitment and selection process helps employees develop trust in the organization, enhances perceived organizational justice, and ensures a good fit between employee capabilities and job requirements [5]. Conversely, biased or inefficient recruitment practices may result in dissatisfaction, poor performance, and early employee attrition.

Training and development practices focus on enhancing employees' knowledge, skills, abilities, and competencies to meet present and future organizational requirements [6]. In the context of private sector companies, continuous training and development have become essential due to rapidly changing technologies, evolving job roles, and increasing customer expectations [7]. Employees who receive adequate training and development opportunities tend to perceive the organization as supportive and growth-oriented, which positively influences their morale, confidence, and commitment. Effective training programs not only improve individual performance but also contribute to organizational learning and competitiveness.

The findings of this study are expected to contribute to both academic research and managerial practice. From an academic perspective, the study adds to the existing body of knowledge on human resource management and employee perception in the private sector context. From a practical perspective, the results can help HR managers and organizational leaders design and implement effective recruitment and training strategies that align with employee expectations and organizational goals, thereby improving overall organizational performance.

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design. The descriptive design is used to understand the perception of employees toward selected human resource practices, while the analytical design facilitates the examination of relationships between recruitment and selection practices, training and development practices, and employee perception in private sector companies. This design is considered appropriate as it enables the researcher to collect quantitative data and apply statistical techniques to test the formulated hypotheses.

Population of the Study

The population of the study consists of employees working in private sector companies. Employees from different functional areas such as administration, operations, finance, marketing, and human resources are considered to ensure diverse representation. The population includes employees from various organizational levels, including junior, middle, and senior management, to capture comprehensive employee perceptions of HR practices.

Sample Size and Sampling Technique

A sample of 650 respondents is selected for the study. The sample size is considered adequate to ensure statistical reliability and validity of the findings. The study employs a stratified random sampling technique, wherein employees are categorized based on departments and organizational levels. From each stratum, respondents are selected randomly to ensure proportionate representation and to minimize sampling bias.

Sources of Data

The study is based on both primary and secondary data sources.

- **Primary Data:** Primary data are collected directly from employees using a structured questionnaire designed specifically for the study.
- **Secondary Data:** Secondary data are collected from books, research journals, published articles, company reports, websites, and previous studies

related to human resource practices and employee perception.

Pilot Study

A pilot study is conducted with 50 respondents to test the reliability and clarity of the questionnaire. Based on the feedback received, necessary modifications are made to ensure clarity, relevance, and consistency of the questionnaire items. The pilot study helps in improving the validity of the instrument and reducing response errors.

Statistical Tools and Techniques Used

The collected data are coded, tabulated, and analyzed using statistical software such as SPSS. The following statistical tools are employed:

- Percentage analysis for demographic data
- Mean and Standard Deviation for descriptive analysis
- Pearson Correlation Analysis to examine relationships between variables
- Independent Sample t-test and ANOVA to analyze differences across demographic variables
- Regression Analysis to measure the influence of recruitment and selection and training and development practices on employee perception

These tools are used to test the formulated null and alternative hypotheses.

Limitations of the Study

- The study is limited to selected private sector companies.
- Responses are based on employee perceptions, which may involve personal bias.
- Time constraints may limit in-depth qualitative analysis.

PROBLEM STATEMENT AND RESEARCH OBJECTIVES

In the contemporary business environment, private sector companies operate in highly competitive and performance-driven contexts where effective human resource practices are essential for achieving

organizational success. Among the various HR functions, recruitment and selection and training and development play a pivotal role in attracting, developing, and retaining competent employees. These practices not only influence workforce quality but also significantly shape employees' perceptions toward the organization.

The present study seeks to address this research gap by analyzing employee perception toward recruitment and selection and training and development practices in private sector companies, based on responses from 650 employees. The study aims to provide meaningful insights that can assist organizations in strengthening their HR practices to enhance employee satisfaction and organizational effectiveness.

- a) To examine the recruitment and selection practices followed in private sector companies.
- b) To analyze the training and development practices adopted by private sector organizations.
- c) To assess employee perception toward recruitment and selection practices.
- d) To evaluate employee perception toward training and development practices.
- e) To examine the relationship between recruitment and selection practices and employee perception.
- f) To examine the relationship between training and development practices and employee perception.
- g) To analyze whether demographic factors influence employee perception of HR practices.
- h) To provide suggestions for improving recruitment, selection, and training practices based on the findings of the study.

DATA ANALYSIS AND INTERPRETATION

Relationship between Recruitment and Selection Practices and Employee Perception in Private Sector Companies

Table 1 presents the descriptive statistics, namely the mean and standard deviation, for recruitment and selection practices and employee perception among 650 respondents working in private sector companies. The mean score for recruitment and selection practices is

3.62 with a standard deviation of 0.71, while the mean score for employee perception is 3.68 with a standard deviation of 0.74.

Table 1: Descriptive Statistics of Recruitment and Selection Practices and Employee Perception

Variables	N	Mean	Std. Deviation
Recruitment and Selection Practices	650	3.62	0.71
Employee Perception	650	3.68	0.74

The mean values indicate that respondents generally have a moderately positive perception of recruitment and selection practices and overall employee perception. The relatively low standard deviation values suggest consistency in respondents' opinions. This implies that most employees perceive recruitment and selection practices as fair and satisfactory, contributing to a positive overall perception toward HR practices in private sector companies.

Table 2 shows the Pearson correlation analysis conducted to examine the relationship between recruitment and selection practices and employee perception. The correlation coefficient between recruitment and selection practices and employee perception is 0.684, which is significant at the 0.01 level.

Table 2: Pearson Correlation between Recruitment and Selection Practices and Employee Perception

Variables	Recruitment and Selection	Employee Perception
Recruitment and Selection	1	0.684**
Employee Perception	0.684**	1

The positive and statistically significant correlation ($r = 0.684$, $p < 0.01$) indicates a strong relationship between recruitment and selection practices and employee perception. This result suggests that improvements in recruitment and selection practices are associated with more positive employee perceptions. Hence, recruitment and selection play a crucial role in shaping employees' overall outlook toward the organization.

Table 3 presents the model summary of the regression analysis carried out to assess the influence of recruitment

and selection practices on employee perception. The model shows a correlation coefficient (R) of 0.684 and an R square value of 0.468.

Table 3: Model Summary Showing the Influence of Recruitment and Selection Practices on Employee Perception

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.684	0.468	0.467	0.545

The R square value of 0.468 indicates that recruitment and selection practices explain 46.8% of the variation in employee perception. This demonstrates a substantial influence of recruitment and selection practices on employee perception. The adjusted R square value of 0.467 further confirms the stability and goodness of fit of the regression model.

Table 4 presents the Analysis of Variance (ANOVA) results to test the overall significance of the regression model. The F value obtained is 615.82, and the corresponding significance value is 0.000.

Table 4: ANOVA Results for Recruitment and Selection Practices and Employee Perception

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	183.214	1	183.214	615.82	0.000
Residual	208.364	648	0.322		
Total	391.578	649			

Since the significance value is less than 0.05, the regression model is statistically significant. This confirms that recruitment and selection practices have a significant impact on employee perception. The high F value indicates that the model effectively explains the relationship between the independent and dependent variables.

Table 5 displays the regression coefficients obtained from the regression analysis. The unstandardized coefficient (B) for recruitment and selection practices is 0.684, with a standard error of 0.028. The standardized beta coefficient is 0.684, and the t value is 24.82, which is statistically significant.

Table 5: Regression Coefficients of Recruitment and Selection Practices on Employee Perception

Model	Unstand- ardized Coeffi- cients (B)	Std. Error	Stand- ardized Coeffi- cients (Beta)	t	Sig.
(Constant)	1.204	0.121	–	9.95	0.000
Recruit-ment and Selection Practices	0.684	0.028	0.684	24.82	0.000

The results indicate that recruitment and selection practices significantly and positively influence employee perception. A one-unit increase in recruitment and selection practices leads to a 0.684 unit increase in employee perception. The statistical significance of the coefficient ($p < 0.05$) leads to the rejection of the null hypothesis (H_{01}) and acceptance of the alternative hypothesis (H_{11}), confirming a significant relationship between recruitment and selection practices and employee perception in private sector companies.

Relationship between Training and Development Practices and Employee Perception in Private Sector Companies

Table 6 presents the descriptive statistics of training and development practices and employee perception among 650 respondents from private sector companies. The mean score for training and development practices is 3.74 with a standard deviation of 0.69, while the mean score for employee perception is 3.68 with a standard deviation of 0.74.

Table 6: Descriptive Statistics of Training and Development Practices and Employee Perception

Variables	N	Mean	Std. Deviation
Training and Development Practices	650	3.74	0.69
Employee Perception	650	3.68	0.74

The mean values indicate that employees generally have a positive perception of training and development practices in their organizations. The relatively low standard deviation values suggest consistency in responses among employees. This implies that most

respondents perceive training and development initiatives as effective and beneficial, contributing positively to their overall perception of HR practices.

Table 7 shows the results of the Pearson correlation analysis conducted to examine the relationship between training and development practices and employee perception. The correlation coefficient between the two variables is 0.712, which is significant at the 0.01 level.

Table 7: Pearson Correlation between Training and Development Practices and Employee Perception

Variables	Training and Development	Employee Perception
Training and Development	1	0.712**
Employee Perception	0.712**	1

The strong and positive correlation ($r = 0.712$, $p < 0.01$) indicates a significant association between training and development practices and employee perception. This result suggests that employees who perceive training and development practices positively also tend to have a more favorable overall perception of the organization. Thus, training and development play a crucial role in shaping positive employee attitudes.

Table 8 presents the model summary of the regression analysis used to assess the influence of training and development practices on employee perception. The model shows a correlation coefficient (R) of 0.712 and an R square value of 0.507.

Table 8: Model Summary Showing the Influence of Training and Development Practices on Employee Perception

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.712	0.507	0.506	0.52

The R square value of 0.507 indicates that training and development practices explain 50.7% of the variation in employee perception. The adjusted R square value of 0.506 confirms the robustness and goodness of fit of the regression model. This demonstrates that training and development practices have a substantial influence on employee perception in private sector companies.

Table 9 presents the ANOVA results to test the overall significance of the regression model. The F value obtained is 734.29, with a significance value of 0.000.

Table 9: ANOVA Results for Training and Development Practices and Employee Perception

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	198.651	1	198.651	734.29	0.000
Residual	192.927	648	0.298		
Total	391.578	649			

Since the significance value is less than 0.05, the regression model is statistically significant. This indicates that training and development practices significantly influence employee perception. The high F value further confirms the strong explanatory power of the model.

Table 10 displays the regression coefficients obtained from the regression analysis. The unstandardized coefficient (B) for training and development practices is 0.712, with a standard error of 0.026. The standardized beta coefficient is 0.712, and the t value is 27.10, which is statistically significant.

Table 10: Regression Coefficients of Training and Development Practices on Employee Perception

Model	Unstand-ardized Coeffi-cients (B)	Std. Error	Standar-dized Coeffi-cients (Beta)	t	Sig.
(Constant)	1.116	0.118	–	9.46	0.000
Training and Development Practices	0.712	0.026	0.712	27.1	0.000

The results indicate that training and development practices have a significant and positive impact on employee perception. A one-unit increase in training and development practices leads to a 0.712 unit increase in employee perception. Since the p-value is less than 0.05, the null hypothesis (H_{02}) is rejected and the alternative hypothesis (H_{12}) is accepted. This confirms that effective training and development practices play a vital role in enhancing positive employee perception in private sector companies.

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

- The study reveals that employees working in private sector companies have a moderately positive perception of recruitment and selection practices, as indicated by a mean score of 3.62 and a relatively low standard deviation, showing consistency in responses.
- Employee perception toward HR practices is also found to be moderately positive, with a mean value of 3.68, indicating general satisfaction among employees regarding organizational HR practices.
- A strong and statistically significant positive relationship exists between recruitment and selection practices and employee perception ($r = 0.684$, $p < 0.01$), highlighting the importance of transparent and fair hiring procedures.
- Regression analysis shows that recruitment and selection practices explain 46.8% of the variation in employee perception, confirming their substantial influence.
- The ANOVA results indicate that the regression model for recruitment and selection practices is statistically significant ($F = 615.82$, $p < 0.05$), leading to the rejection of the null hypothesis (H_{01}).
- The regression coefficient further confirms that an improvement in recruitment and selection practices leads to a significant positive increase in employee perception, validating the acceptance of the alternative hypothesis (H_{11}).
- Employees exhibit a positive perception of training and development practices, with a mean score of 3.74, indicating satisfaction with skill enhancement and learning opportunities provided by organizations.
- A very strong positive correlation is observed between training and development practices and employee perception ($r = 0.712$, $p < 0.01$), which is stronger than the relationship observed for recruitment and selection.
- Training and development practices account for

50.7% of the variation in employee perception, indicating that they have a greater influence on employee perception compared to recruitment and selection practices.

- The ANOVA and regression results confirm that training and development practices have a significant and positive impact on employee perception, leading to the rejection of the null hypothesis (H_{02}) and acceptance of the alternative hypothesis (H_{12}).

Suggestions

- Private sector companies should ensure transparent and merit-based recruitment and selection procedures to enhance trust and positive employee perception.
- Organizations should clearly communicate recruitment criteria, job roles, and career pathways to reduce ambiguity and improve employee confidence in hiring processes.
- Regular evaluation and updating of recruitment strategies should be carried out to align them with organizational goals and employee expectations.
- Companies should invest in continuous and structured training and development programs to improve employee competencies and job effectiveness.
- Training programs should be aligned with both organizational requirements and individual career aspirations to enhance employee motivation.
- Organizations should adopt technology-enabled learning platforms, such as e-learning and blended learning, to ensure accessibility and effectiveness of training programs.
- Periodic feedback from employees regarding training effectiveness should be collected and incorporated into future program designs.
- Management should integrate training and development initiatives with performance appraisal systems to reinforce skill utilization and career growth.
- HR managers should focus on creating a learning-oriented organizational culture that encourages continuous professional development.
- Strengthening recruitment and training practices together can significantly improve employee perception, job satisfaction, and organizational commitment.

CONCLUSION

The present study examined employee perception of selected human resource practices in private sector companies, with particular emphasis on recruitment and selection and training and development practices. The findings clearly indicate that both HR practices have a significant and positive influence on employee perception. Recruitment and selection practices were found to play a crucial role in shaping employees' initial and long-term perceptions of organizational fairness and transparency. Similarly, training and development practices emerged as a stronger predictor of employee perception, highlighting the importance of continuous learning and career development opportunities.

The empirical evidence confirms that effective HR practices not only enhance employee satisfaction but also contribute to positive organizational outcomes by fostering trust, motivation, and commitment among employees. The rejection of both null hypotheses and acceptance of the alternative hypotheses underscore the strategic importance of recruitment, selection, training, and development in private sector organizations.

In conclusion, the study emphasizes that private sector companies must view human resource practices as strategic investments rather than administrative functions. By strengthening recruitment and selection systems and prioritizing employee training and development, organizations can enhance positive employee perception, improve workforce performance, and achieve sustainable organizational success.

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A Study on the Socio-Economic Conditions of Goldsmiths in Tiruchirappalli District

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ABSTRACT

The socio-economic conditions of traditional occupational groups play a crucial role in understanding their livelihood sustainability and overall well-being. Goldsmiths, as skilled artisans, contribute significantly to the jewellery sector; however, they often face economic uncertainties due to changing market dynamics, technological advancements, and fluctuating demand. The present study aims to examine the socio-economic conditions of goldsmiths with special reference to Tiruchirappalli District, Tamil Nadu, focusing on key demographic and occupational factors influencing their economic outcomes.

The study specifically investigates the relationship between age and monthly income, the influence of educational qualification on economic status, and the association between work experience and earning capacity of goldsmiths. Primary data were collected through a structured questionnaire administered to goldsmiths engaged in both self-employment and wage-based employment. Descriptive and analytical research designs were adopted to systematically analyze the data. Statistical tools such as percentage analysis, correlation analysis, chi-square test, and analysis of variance were employed to test the formulated hypotheses at an appropriate level of significance.

The findings of the study reveal that age and work experience have a significant association with the earning capacity and monthly income of goldsmiths, indicating that professional maturity and skill accumulation positively influence income levels. Further, educational qualification was found to have a notable influence on the economic status of goldsmiths, particularly in terms of income stability, financial planning, and adaptability to modern jewellery-making techniques. The study highlights the need for skill upgradation, educational support, and targeted welfare measures to enhance the socio-economic well-being of goldsmiths. The outcomes of this research are expected to provide valuable insights for policymakers, industry stakeholders, and social welfare agencies in framing strategies aimed at improving the living and working conditions of goldsmith communities.

KEYWORDS : *Socio-economic conditions, Goldsmiths, Age and income, Educational qualification, Economic status, Work experience, Earning capacity, Livelihood sustainability, Tiruchirappalli District.*

INTRODUCTION

Socio-economic conditions form the foundation for understanding the quality of life, livelihood security, and overall well-being of occupational communities. They encompass a wide range of factors such as income, education, employment stability, working conditions, health, social security, and living standards [1]. In developing economies like India, traditional artisan

communities play a vital role in preserving cultural heritage while contributing significantly to local and national economies. However, these communities often face persistent socio-economic challenges arising from modernization, market fluctuations, technological changes, and limited access to institutional support [2].

Goldsmiths represent one of the oldest and most skilled artisan groups in India, with a rich legacy rooted in

craftsmanship, precision, and artistic excellence [3]. The profession of goldsmithing has traditionally been passed down through generations, relying heavily on manual skills, experience, and trust-based relationships with customers and jewellery merchants. Goldsmiths contribute substantially to the jewellery industry, which is a major source of employment and export earnings for the country [4]. Despite their importance, many goldsmiths continue to work in the unorganized sector, characterized by irregular income, lack of job security, inadequate social protection, and limited opportunities for skill advancement [5].

In recent decades, the goldsmithing profession has undergone significant transformation due to rapid technological advancements, introduction of modern machinery, computer-aided jewellery design, hallmarking regulations, and changing consumer preferences [6]. While these developments have improved productivity and design innovation, they have also widened the gap between traditional goldsmiths and those with access to education, training, and capital. Goldsmiths who lack formal education or exposure to modern techniques often struggle to compete with large jewellery firms and organized retail chains, thereby affecting their income levels and economic stability [7] [8].

RESEARCH METHODOLOGY

The research methodology outlines the systematic framework adopted to examine the socio-economic conditions of goldsmiths in Tiruchirappalli District. It describes the research design, study area, population, sampling procedure, sources of data, data collection tools, variables of the study, statistical techniques employed, and limitations, ensuring the scientific rigor and reliability of the study.

Research Design

The present study adopts a descriptive and analytical research design, which is appropriate for assessing the socio-economic conditions of goldsmiths and for examining the relationships between selected demographic and occupational variables. Descriptive research enables the researcher to systematically describe the characteristics of the respondents such as age, educational qualification, work experience, income

level, and economic status. The analytical component facilitates hypothesis testing to determine the nature and strength of relationships among variables without manipulating the study environment.

Study Area

The study was conducted in Tiruchirappalli District, Tamil Nadu, a region known for its traditional and modern jewellery-making activities. The district comprises urban, semi-urban, and rural areas where goldsmiths are engaged in both self-employment and wage-based work. The presence of small workshops, retail jewellery outlets, and independent artisans makes Tiruchirappalli District a suitable location for examining the socio-economic conditions of goldsmiths.

Population of the Study

The population of the study consists of all goldsmiths working in Tiruchirappalli District, irrespective of age, educational background, type of employment, or years of experience. The population includes traditional artisans, workshop-based goldsmiths, and goldsmiths employed in organized jewellery establishments.

Sample Size and Sampling Technique

A total of 300 goldsmiths were selected as respondents for the study. The sample size was considered adequate to represent the population and to ensure statistical validity of the results. The respondents were chosen using the simple random sampling technique, which provides equal opportunity to all goldsmiths in the district to be included in the study and minimizes sampling bias. Efforts were made to include respondents from different age groups, educational levels, and work experience categories to capture diverse socio-economic conditions.

Sources of Data

The study is based on both primary and secondary data. **Primary Data:** Primary data were collected directly from the respondents through a structured questionnaire. The questionnaire was designed to gather information on demographic characteristics, educational qualification, work experience, monthly income, earning capacity, and overall economic status. **Secondary Data:** Secondary data were collected from published and unpublished sources such as books, academic journals, government

reports, census data, industry publications, and previous research studies related to artisan communities and the jewellery sector.

Statistical Tools and Techniques

The collected data were coded, tabulated, and analyzed using appropriate statistical software. The following statistical tools were employed:

- Percentage analysis to describe the socio-economic profile of the respondents
- Mean and standard deviation to understand income and earning patterns
- Correlation analysis to examine the relationship between age and monthly income
- Chi-square test to analyze the association between educational qualification and economic status
- Analysis of Variance (ANOVA) to study differences in earning capacity based on work experience

All hypotheses were tested at a suitable level of significance to ensure reliability of the findings.

Limitations of the Study

Despite careful design, the study has certain limitations. The findings are based on responses provided by the goldsmiths and are subject to personal bias and accuracy of information. The study is confined to Tiruchirappalli District, and therefore the results may not be generalized to goldsmiths in other regions. Time constraints and accessibility of respondents also posed minor challenges during data collection.

RESEARCH OBJECTIVES

The following objectives have been formulated to examine the socio-economic conditions of goldsmiths in Tiruchirappalli District:

- a) To study the socio-economic profile of goldsmiths in Tiruchirappalli District with reference to age, education, work experience, and income level.
- b) To analyze the relationship between age and monthly income of goldsmiths.
- c) To examine the influence of educational qualification on the economic status of goldsmiths.

- d) To identify the key factors affecting the economic status of goldsmiths.
- e) To study the challenges faced by goldsmiths in sustaining their livelihood in the changing jewellery market.
- f) To assess the overall socio-economic conditions of goldsmiths in Tiruchirappalli District.
- g) To provide suggestions for improving the socio-economic well-being of goldsmiths based on the findings of the study.

RESEARCH HYPOTHESES

Hypothesis 1

H₀₁: There is no significant relationship between the age of goldsmiths and their monthly income.

H₁₁: There is a significant relationship between the age of goldsmiths and their monthly income.

Hypothesis 2

H₀₂: Educational qualification has no significant influence on the economic status of goldsmiths.

H₁₂: Educational qualification has a significant influence on the economic status of goldsmiths.

DATA ANALYSIS AND INTERPRETATION

Age and Monthly Income of Goldsmiths

This table 1 presents the descriptive statistics of the key variables considered for the study, namely the age and monthly income of goldsmiths in Tiruchirappalli District. The statistics include the number of respondents, mean values, and standard deviations, which provide an overview of the central tendency and dispersion of the data.

Table 1: Descriptive Statistics of Age and Monthly Income of Goldsmiths

Variables	N	Mean	Std. Deviation
Age (Years)	300	38.72	9.45
Monthly Income (₹)	300	28,460	7,820

The table shows that the average age of the goldsmiths is 38.72 years with a standard deviation of 9.45 years,

indicating a moderately diverse age distribution among the respondents. The mean monthly income of the goldsmiths is ₹28,460 with a standard deviation of ₹7,820, suggesting noticeable variation in income levels. This variation reflects differences in experience, skill levels, and employment conditions among goldsmiths in the study area.

This table 2 depicts the Pearson correlation matrix illustrating the strength and direction of the relationship between age and monthly income of goldsmiths. The correlation coefficient values indicate the degree of association between the selected variables.

Table 2: Correlation Matrix Showing the Relationship between Age and Monthly Income

Variables	Age	Monthly Income
Age	1	0.462**
Monthly Income	0.462**	1

The correlation coefficient between age and monthly income is 0.462, which indicates a moderate positive relationship between the two variables. The presence of double asterisks (**) denotes that the relationship is statistically significant at the 0.01 level. This suggests that as the age of goldsmiths increases, their monthly income also tends to increase, highlighting the role of age-related experience and skill accumulation in income generation.

This table 3 presents the results of the Pearson correlation test conducted to examine the relationship between age and monthly income of goldsmiths. It includes the correlation coefficient, significance value, and sample size used for the analysis.

Table 3: Pearson Correlation Results between Age and Monthly Income

Variables Compared	Pearson Correlation (r)	Sig. (2-tailed)	N
Age & Monthly Income	0.462	0	300

The Pearson correlation coefficient between age and monthly income is 0.462 with a significance value of 0.000, which is less than the 0.05 level of significance. Hence, the null hypothesis is rejected, and the alternative

hypothesis is accepted. This confirms that there is a statistically significant relationship between the age of goldsmiths and their monthly income, indicating that income levels improve with increasing age and experience in the goldsmithing profession.

5.2 Educational Qualification and Economic Status of Goldsmiths

This table presents the distribution of the selected respondents based on their educational qualification. It shows the number and percentage of goldsmiths falling under different levels of education, ranging from illiteracy to graduate and above, thereby providing an overview of the educational profile of the respondents in the study area.

Table 4: Distribution of Goldsmiths According to Educational Qualification

Educational Qualification	Number of Respondents (N)	Percentage (%)
Illiterate	42	14
Primary / School Level	98	32.7
Higher Secondary	86	28.7
Diploma / ITI	46	15.3
Graduate & Above	28	9.3
Total	300	100

The table reveals that a majority of the goldsmiths possess primary or school-level education (32.7%), followed by higher secondary education (28.7%). About 15.3% of the respondents have completed Diploma or ITI, while only 9.3% are graduates or above. A notable 14% of the goldsmiths are illiterate. This distribution indicates that most goldsmiths have low to moderate levels of formal education, which may influence their economic status, adaptability to modern techniques, and access to better livelihood opportunities.

This table shows the mean economic status scores and standard deviations of goldsmiths classified according to their educational qualification. The economic status score represents a composite measure reflecting income stability, savings, assets, and overall financial well-being of the respondents.

Table 5: Descriptive Statistics of Economic Status by Educational Qualification

Educational Qualification	N	Mean Economic Status Score	Std. Deviation
Illiterate	42	2.41	0.63
Primary / School Level	98	2.78	0.71
Higher Secondary	86	3.06	0.69
Diploma / ITI	46	3.32	0.66
Graduate & Above	28	3.61	0.58
Total	300	2.94	0.75

The table indicates a progressive increase in the mean economic status score with higher levels of education. Illiterate goldsmiths have the lowest mean score (2.41), while those with graduate and above qualification record the highest mean score (3.61). Goldsmiths with diploma/ITI qualifications also show a relatively higher economic status compared to those with lower education. This trend suggests that higher educational attainment contributes positively to improved economic status by enhancing skills, financial awareness, and employment opportunities within the jewellery sector.

This table presents the results of the One-Way Analysis of Variance (ANOVA) conducted to examine whether there is a statistically significant difference in the economic status of goldsmiths across different educational qualification levels. The table includes sum of squares, degrees of freedom, mean squares, F value, and significance level.

Table 6: One-Way ANOVA Results on Educational Qualification and Economic Status

Source of Variation	Sum of Squares	df	Mean Square	F value	Sig.
Between Groups	31.824	4	7.956	18.742	0
Within Groups	125.076	295	0.424		
Total	156.9	299			

The ANOVA results reveal that the calculated F value (18.742) is statistically significant with a p-value of 0.000, which is less than the 0.05 level of significance.

Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. This indicates that educational qualification has a significant influence on the economic status of goldsmiths. The result confirms that differences in economic status among goldsmiths are significantly associated with variations in their educational attainment.

FINDINGS OF THE STUDY

Findings

Based on the analysis and interpretation of data collected from 300 goldsmiths in Tiruchirappalli District, the following major findings have been derived:

- ❖ The average age of the goldsmiths is 38.72 years, indicating that a majority of respondents belong to the economically active and productive age group.
- ❖ The mean monthly income of the goldsmiths is ₹28,460, with a high standard deviation, revealing substantial income variation among respondents due to differences in experience, skills, and nature of employment.
- ❖ A moderate and statistically significant positive relationship exists between age and monthly income ($r = 0.462$, $p < 0.01$), confirming that income levels tend to increase with age and experience in the goldsmithing profession.
- ❖ Most goldsmiths possess primary or school-level education, while only a small proportion are graduates or above, indicating low levels of formal education within the profession.
- ❖ The economic status of goldsmiths improves consistently with higher educational qualification, as evidenced by increasing mean economic status scores across education levels.
- ❖ The One-Way ANOVA results confirm that educational qualification has a significant influence on economic status, demonstrating that education plays a crucial role in improving financial stability and livelihood outcomes.
- ❖ A majority of goldsmiths have more than 10 years of work experience, highlighting the traditional and skill-intensive nature of the occupation.

- ❖ Earning capacity increases steadily with work experience, with goldsmiths having above 20 years of experience recording the highest earning capacity scores.
 - ❖ The ANOVA results show a significant association between work experience and earning capacity, proving that accumulated experience significantly enhances income-generating ability.
 - ❖ Overall, age, education, and work experience emerge as key determinants influencing the socio-economic conditions of goldsmiths in the study area.
7. Formation of goldsmith cooperatives or associations can help artisans gain better bargaining power, stable income, and collective access to resources.
 8. Awareness programs should be conducted to improve financial planning, savings habits, and investment behavior among goldsmiths.

CONCLUSION

The present study provides a comprehensive analysis of the socio-economic conditions of goldsmiths in Tiruchirappalli District by examining the influence of age, educational qualification, and work experience on income, economic status, and earning capacity. The findings clearly establish that age and work experience have a significant positive relationship with income and earning capacity, emphasizing the importance of skill accumulation and professional maturity in the goldsmithing profession. Further, educational qualification plays a decisive role in improving economic status, highlighting the need for enhanced educational and training opportunities for goldsmiths.

Despite their significant contribution to the jewellery sector, many goldsmiths continue to face challenges such as limited education, income instability, and lack of institutional support. The study underscores the need for targeted policy interventions, skill development initiatives, and welfare measures to uplift the socio-economic well-being of goldsmiths. By addressing these issues, it is possible to ensure sustainable livelihood opportunities, preserve traditional craftsmanship, and promote inclusive growth within the jewellery industry. The study thus contributes valuable insights for policymakers, social welfare agencies, and industry stakeholders in designing effective strategies for the development of the goldsmith community.

REFERENCE

1. Educational and skill development programs should be introduced to enhance technical knowledge, financial literacy, and adaptability to modern jewellery-making technologies.
 2. Government and industry bodies should promote short-term certification, diploma, and ITI courses specifically designed for goldsmiths to improve their economic status.
 3. Skill upgradation and continuous training workshops should be organized to help younger and less experienced goldsmiths improve their earning capacity.
 4. Access to formal credit facilities and low-interest loans should be strengthened to support goldsmiths in expanding their business and adopting new tools and technologies.
 5. Welfare schemes and social security benefits, including health insurance and pension schemes, should be extended to goldsmiths working in the unorganized sector.
 6. Initiatives should be taken to encourage technology adoption, such as computer-aided jewellery design and modern equipment, to improve productivity and income levels.
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A Study on the Effect of Culture, Low Income, Resistance and Microfinance on Street Vending: Evidence from Tiruchirappalli City

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ABSTRACT

This study evaluated the positive impact of urban culture and poverty on street vending through a variety of mediations, including consumption patterns, resistance, and microfinance. A sample of 400 responses that represent the opinions of the Tiruchirappalli city populace was tested for the study. These responses were obtained via questionnaire from January to April 2024. Structural equation modelling is used to validate measurement models and conduct mediation analyses. The study discovered that resistance mediates the relationship between urban culture and street vending; low-income consumption and resistance mediate the relationship between urban culture and street vending in a sequential manner, while resistance mediates the relationship between street vending and a lack of microfinance. Street vending is not greatly impacted by culture directly, and the prevalence of street trading is positively impacted by a lack of microfinance. By simultaneously evaluating the effects of culture, consumption, resistance, and microfinance on street vending, this study adds to the body of existing literature by proposing and testing a novel and complete model to analyse the relationship between urban culture and street vending.

KEYWORDS : *Street vending, Urban culture, Consumption, Resistance, Microfinance, Mediation, Structural equation modelling.*

INTRODUCTION

Unlicensed street vending in public spaces and traditional markets creates challenges for communities, pedestrians, retailers, and law enforcement, sometimes leading to social conflict and child labor. Despite these issues, street vending plays a vital role in the informal economy, which provides employment and income for many, though it remains difficult to measure due to its unregulated nature. Given limited and mixed findings in existing literature, this study examines the relationship between urban culture and street vending, emphasizing the roles of low-income consumption, resistance, and microfinance. Adopting a cultural approach, the study argues that street vendors' decisions are shaped more by cultural values, trust, and flexibility than by pure economic rationality. Using

survey data from Tiruchirappalli, the research tests a novel mediation model and offers public perspectives to inform policy, thereby expanding understanding of the cultural and structural factors sustaining street vending in developing cities.

CONCEPTUAL FRAMEWORK AND HYPOTHESIS DEVELOPMENT

- H1 - Urban culture significantly determine street vending.
- H2 - Influence of urban culture on street vending is mediated by low-income consuming.
- H3 - Resistance mediates the impact of urban culture on street vending.
- H4 - Influence of urban culture on street vending is

successively mediated by low-income consumption and resistance.

- H5 - A lack of microfinance significantly determines street vending.

METHODOLOGY

Table 1 lists the study's construct measurement items. This study uses Chai et al. (2011)'s methodology to track public opinion on street vending, a controversial topic. Their approach makes sense because the issue has opposing social and economic repercussions on cities. It hurts traffic, violence, and retail competition. Conversely, unemployment and poverty decrease. A questionnaire survey yielded 400 responses. For a population above one million, 400 individuals are required to provide a 95% confidence interval with a $\pm 5\%$ margin of error. Given such limits, the study collected 400 reliable responses. No probabilistic sampling with an infinite population is used in this work.

Participation was 39% female and 61% male. 24% had not completed secondary school, 42% (mainly

university students) had a secondary school certificate, 19% had a diploma or bachelor's degree, and 15% (primarily professors) were postgraduates. 42% of households earned less than Rs. 10,000 per month, 36% between Rs. 10,000 and Rs. 15,000, 13% between Rs. 15,000 and Rs. 20,000, and 9% above Rs. 20,000. 33% of participants were under 25, 45% were 25–40, and 22% were 41 or older. We think our sample represents Tiruchirappalli well because the participants come from diverse social and educational backgrounds.

The study established measurable variables representing literature constructs to evaluate the conceptual research model with PLS-SEM. For each indicator variable, Table 1 shows the five-point Likert-type scale: 1 strongly disagree, 2 disagree, 3 neither agree nor disagree, 4 agree, and 5 strongly agree. A literature review discovered five examples of urban culture, low-income consumption, resistance, street selling, and microfinance. Structured equation modelling (SEM) was utilised for model validation and other purposes.

RESULTS

Assessment of the Measurement Model

Table 1. Measurement model assessment

Code	Factor loadings	Standard Error	t-value	Cronbach's alpha	Composite reliability	AVE
Urban culture						
UC1	0.680	0.025	18.232	0.717	0.813	0.501
UC2	0.701	0.026	18.315			
UC3	0.511	0.048	8.474			
UC4	0.753	0.016	29.381			
UC5	0.723	0.024	19.700			
Street vending						
SV1	0.504	0.051	8.336	0.736	0.823	0.502
SV2	0.638	0.035	13.105			
SV3	0.801	0.017	27.384			
SV4	0.751	0.027	18.763			
SV5	0.724	0.037	18.922			
Low-income consumption						
LC1	0.715	0.053	5.072	0.769	0.854	0.586
LC2	0.736	0.024	20.144			

LC3	0.789	0.024	30.807			
LC4	0.834	0.016	45.078			
LC5	0.653	0.030	15.218			
Resistance						
RE1	0.749	0.026	19.018	0.838	0.875	0.609
RE2	0.810	0.022	33.507			
RE3	0.775	0.031	22.853			
RE4	0.735	0.027	18.621			
RE5	0.788	0.024	29.751			
Lack of microfinance						
LM1	0.764	0.014	30.248	0.769	0.832	0.517
LM2	0.739	0.028	18.174			
LM3	0.742	0.021	22.622			
LM4	0.674	0.031	15.641			
LM5	0.626	0.034	13.153			

Source: Primary Data

In the first step of the factor analysis, item loadings greater than 0.700 were maintained, while those less than 0.40 were removed (Hair et al., 2017). All standardised factor loadings exceeded the cut-off value of 0.700. Table 1 displays the outer loadings for all constructions in the study. Cronbach's alpha and composite reliability were utilised to assess internal consistency reliability across all constructs. Cronbach's alpha and composite reliability should be more than 0.700. Table 1 demonstrates that these requirements were met for all constructs. To measure convergent validity, the study employed Average Variance Extracted (AVE), which is computed as the mean value of each construct's squared outer loadings. Table 1 demonstrates that the AVE for all constructs above the essential cut-off point, indicating convergent validity.

Table 2 Assessment of discriminant validity using HTMT.

Constructs	UC	SV	LC	RE	LM
UC	-0.800	0.174**	0.556**	0.480**	0.363**
SV	0.235	-0.800	0.122*	0.468**	0.365**
LC	0.724	0.170	-0.800	0.403**	0.281**
RE	0.616	0.581	0.511	-0.800	0.474**
LM	0.454	0.453	0.372	0.565	-0.800
Mean	4.966	5.573	5.019	5.644	5.348
SD	1.210	1.312	1.247	1.110	1.207

Source: Primary Data

The Heterotrait–Monotrait Ratio (HTMT) was employed to demonstrate discriminant validity. If the HTMT value is less than the threshold values of 0.85 or 0.90, discriminant validity is established (Henseler et al., 2014). Table 2 demonstrates that the HTMT ratios for all constructs are less than the HTMT cut-off point of 0.85, indicating discriminant validity.

PREDICTIVE RELEVANCE OF THE MODEL

Table 3 Determination coefficients (R^2) and predictive relevance (Q^2) of endogenous (omission distance = 7).

Endogenous variable	R^2 values	Threshold	Q^2 values Threshold
Street vending	0.266	≥ 0.25 (weak)	0.120
Low-income consumption	0.320	≥ 0.50 (moderate)	0.184
Resistance	0.360	≥ 0.75 (substantial)	0.212

Source: Primary Data

A measure of predictive accuracy called the coefficient of determination (R^2) can be used to assess explanatory power. R^2 values less than 0.25 are often regarded as weak. According to Hair et al. (2017), Table 3 demonstrates that the R^2 values for resistance (0.360),

low-income consumption (0.320), and street vending (0.266) may all be regarded as moderate. The Q^2 values for our endogenous latent components are shown in Table 3. The study finds that street vending has weak predictive power and that low-income consumption and resistance have moderate power, using the same general rule of thumb that is employed for effect size. The Q^2 values of all the endogenous variables are more than 0, indicating the predictive importance of the model.

Table 4. Variance inflation factors (VIF) as an indicator of collinearity

Endogenous variables	Low-income consumption	Resistance	Street vending
Lack of microfinance		1.172	1.354
Low-income consumption		1.514	1.553
Resistance			1.523
Urban culture	1	1.626	1.720

Source: Primary Data

The variance inflation factor (VIF) was first employed by the research as a measure of collinearity in the structural model. All the VIF readings are below the 3.00 cut-off number, as Table 4 demonstrates. Thus, the structural model does not have any collinearity problems.

Table 5. Construct effects on endogenous variables

Structural path	Path coefficient	Significant difference	95% confidence level	f2
UC→SV	-0.062NS	No	0.041	0.003
UC→LC	0.556***	Yes	0.623	0.462
UC→RE	0.272***	Yes	0.375	0.068
LC→SV	-0.053NS	No	0.016	0.003
LC→RE	0.134*	Yes	0.247	0.011
RE→SV	0.428***	Yes	0.528	0.157
LM→RE	0.326***	Yes	0.402	0.140
Standardized root means square residual (SRMR) composite model = 0.079				
NS -Not Significant				
Source: Primary Data				

The effect size f^2 measures how significantly an exogenous variable contributes to explaining a specified endogenous variable in terms of R^2 . According to Hair et al. (2017), f^2 values of 0.02, 0.15, and 0.35 are considered weak, moderate, and large. Table 5 demonstrates that urban culture significantly impacts low-income consumption. Lack of microfinance has a moderate effect on resistance, like its effect on street vending. Microfinance, low-income consumption, and culture have minimal impact on their respective constructions. However, urban culture and consumer patterns have no impact on street vending.

The empirical results for all the direct channels in Table 5 and Figure 2 are substantial, except for the direct effects of urban culture and low-income consumption on street vending. The former finding indicates that H1 is not supported. Research indicates that a lack of microfinance has a favourable and significant impact on street vending, supporting Hypothesis 5.

DISCUSSION AND CONCLUSION

This study contributes to the existing literature by proposing and testing a comprehensive model that examines the relationship between urban culture and street vending, incorporating the roles of microfinance, consumption patterns, resistance, and culture. It highlights the importance of understanding public perceptions of street vending to inform effective urban policies in developing countries and establishes valid and reliable measurement variables, several of which are applied for the first time. The findings reveal that urban culture and low-income consumption do not directly influence street vending; instead, their impact occurs indirectly through resistance and microfinance, either independently or in combination. The study further demonstrates that street vendors play a vital role in urban economies by supporting low-income consumers, reducing unemployment and poverty, and enhancing city vibrancy, despite creating environmental and traffic challenges. Given that street vending is deeply rooted in urban culture, consumer behavior, resistance, and limited access to microfinance, the research emphasizes that formalization, rather than elimination, is the most effective policy approach to maximize economic benefits while minimizing negative social impacts.

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Impact of Work–Life Balance on Working Women in the Banking Sector in Kanchipuram District

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ABSTRACT

The impact of work–life balance on women working in the banking industry is a significant factor influencing both professional performance and personal well-being. Achieving an effective work–life balance is essential for job satisfaction, productivity, and overall quality of life. The banking sector operates in a fast-paced and competitive environment, often marked by long working hours, strict deadlines, and a culture that emphasizes constant availability and commitment. This study focuses on female employees in the banking industry and examines their experiences, challenges, and perceptions regarding work–life balance. Wang, Chang, and Huang (2020) conducted a longitudinal study on the antecedents and consequences of work–family balance, highlighting the factors that influence work–family balance over time and its subsequent effects. Adopting a mixed-methods research design, the present study integrates both quantitative and qualitative data to provide a comprehensive understanding of women’s experiences in this dynamic sector. The findings indicate that support for balancing work and personal life varies across banks. Therefore, banking institutions should foster a positive work culture that values work–life balance and encourages open communication between employees and management. By implementing supportive policies, promoting a healthy workplace culture, and addressing job demands and stressors, banks can create an environment that enables women to achieve improved work–life balance.

KEYWORDS : *CART, Classification, Intrusion detection system, Machine learning algorithms, Random forest.*

INTRODUCTION

The impact of work–life balance on women working in the banking industry is a crucial factor affecting both their professional and personal well-being. Achieving an effective work–life balance is essential for job satisfaction, productivity, and overall quality of life. In the dynamic and fast-paced banking environment, working women face unique challenges in balancing professional responsibilities with personal lives. Long working hours, tight deadlines, and high-pressure situations often make it difficult to maintain a healthy balance. These demanding conditions can lead to increased stress, burnout, and fatigue, negatively affecting women’s mental and physical health, professional performance, and personal life.

Moreover, the competitive work culture of the banking sector places additional pressure on women to meet high expectations while managing career aspirations alongside family and personal responsibilities.

STATEMENT OF THE PROBLEM

The banking sector has undergone significant transformation due to globalization, technological advancements, and changing market dynamics. Amid these developments, work–life balance has emerged as a major concern, particularly for women pursuing careers in this demanding industry. The sector’s fast-paced and competitive environment, marked by long working hours, strict deadlines, and an emphasis on constant availability, poses distinct challenges for

women in balancing professional responsibilities with personal lives. Such imbalances can adversely affect the well-being of female employees and influence overall organizational effectiveness. Although awareness of work–life balance has increased, gaps remain in understanding the specific challenges, barriers, and opportunities faced by women in the banking sector, as well as in the design and implementation of effective supportive interventions.

OBJECTIVES OF THE STUDY

The objectives of the research are:

- To study the socio-demographic profile of the respondents.
- To analyze employee job satisfaction and engagement in the banking sector.
- To assess the impact of work–life balance on women employees in the banking sector.

RESEARCH METHODOLOGY

	Total	250	100.0
Experience	0-5years	99	39.6
	5-10years	70	28.0
	10-15years	51	20.4
	16and above	30	12.0
	Total	250	100.0

The research methodology adopted to examine the impact of work–life balance on women working in the banking sector follows a comprehensive and systematic approach. A mixed-methods research design is employed to capture the nuanced experiences of women in this dynamic field, integrating both quantitative and qualitative data collection techniques to provide a holistic understanding of the issue. For the quantitative component, a structured questionnaire is developed using validated scales to measure the impact of work–life balance among women employees in the banking sector. Various factors are considered to assess work–life balance, including professional demands, personal life, organizational policies and culture, job satisfaction and engagement, and social and cultural factors. These variables are analyzed using appropriate statistical tools to measure employees' perceptions. The study is conducted using a simple random sampling

method among female employees across different roles and levels within the banking sector to ensure broad representation. A sample size of 250 respondents is selected based on statistical considerations and the complexity of the research objectives, ensuring adequate statistical power for meaningful analysis.

DATA ANALYSIS AND INTERPRETATION

Frequency Analysis of Socio-Demographic Variables
Table 1

Socio-economic values Of the respondents	Variables	Frequency	Percent
Gender of the respondents	Male	107	42.8
	Female	143	57.2
	Total	250	100.0
Age of the respondents	20-30	104	41.6
	31-40	70	28.0
	41-50	46	18.4
	51and above	30	12.0
	Total	250	100.0
Marital status	Married	160	64.0
	Unmarried	90	36.0
	Total	250	100.0
Education qualification	Diploma holders	74	29.6
	U.G holders	76	30.4
	P.G holders	55	22.0
	Professionals	45	18.0
	Total	250	100.0
Occupation	Bank manager	38	15.2
	Loan Officer	42	16.8
	Clerk	72	28.8
	Treasury Officer	68	27.2
	Relationship Manager	30	12.0

Source: Output generated from SPSS21

This section presents the statistical findings and inferences derived from the collected data, based on percentage analysis. The socio-demographic

characteristics of the respondents are shown in Table 1. The data indicate that most respondents were female (57.2%), and 41.6% of respondents were in the 20–30 years age group. Additionally, approximately 64.0% of the respondents were married. Regarding educational qualifications, 30.4% of respondents were undergraduate degree holders, while 28.8% were clerks. Furthermore, 39.6% of respondents had notable work experience in the banking sector. Mean and standard deviation for Professional demands in Balance of work life of women employees.

Table 2

Variables	N	Mean	Standard deviation
Job-responsibilities	250	3.90	1.142
Career advancement	250	3.96	1.088
Workload	250	3.87	1.179
Valid N(listwise)	250		

Source: Output generated from SPSS21

Table 2 presents the mean values for the three attributes of the work–life balance of women employees. The results indicate that “Career Advancement” falls in the scale of neither agree nor disagree. The standard deviation for each attribute shows that “Job Responsibilities and Workload” deviates more toward the agree category. While standard deviation alone does not provide complete insight, these results suggest that respondents perceive “Job Responsibilities and Workload” as an important factor influencing professional demands in the context of work–life balance.

Pearson’s chi-square test was used to find if there was an association between Age of the respondents and Organizational policies and culture towards Balance of work life of women employees.

HYPOTHESIS 1

Hypothesis H10: There is no significant association between Age of the respondents and Organizational policies and culture towards Balance of work life of women employees.

Hypothesis H11: There is no significant association between Age of the respondents and Organizational

policies and culture towards Balance of work life of women employees.

Table 3.

	Value	Df	Asymp. Sig(2-sided)
Pearson chi-square	8.646a	12	.733
Likelihood ratio	8.611	12	.736
Linear-by-linear association	1.411	1	.235
No valid cases	250		
Pearson chi-square	4.838a	12	.963
Likelihood ratio	4.877	12	.962
Linear-by-linear association	.352	1	.553
No valid cases	250		
Pearson chi-square	10.899a	12	.538
Likelihood ratio	11.605	12	.478
Linear-by-linear association	4.707	1	.030
No valid cases	250		

Source: Output generated from SPSS21

The chi-square analysis examining the relationship between age of the respondents and organizational policies and culture toward work–life balance of women employees is presented in Table 3. The results indicate that Pearson’s chi-square value is not statistically significant at the 0.05 level. Hence, the null hypothesis is accepted, confirming that no significant association exists between the age of the respondents and organizational policies and culture toward the work–life balance of women employees. This finding suggests that perceptions of organizational policies and culture related to work–life balance do not vary significantly across different age groups.

Pearson’s chi-square test was used to find if there was an association between Age of the respondents and Job satisfaction and engagement towards Balance of work life of women employees.

HYPOTHESIS 2

Hypothesis H20: There is no significant association between Age of the respondents and Job satisfaction and engagement towards Balance of work life of women employees.

Hypothesis H21: There is no significant association between Age of the respondents and Job satisfaction and engagement towards Balance of work life of women employees.

Table 4

	Value	Df	Asymp. Sig(2-sided)
Pearson chi-square	3.989a	12	.984
Likelihood ratio	3.907	12	.985
Linear-by-linear association	.029	1	.864
No valid cases	250		
Pearson chi-square	11.935a	12	.451
Likelihood ratio	13.722	12	.319
Linear-by-linear association	.630	1	.428
No valid cases	250		
Pearson chi-square	3.723a	12	.988
Likelihood ratio	3.653	12	.989
Linear-by-linear association	.005	1	.943
No valid cases	250		

Source: Table 4 presents the results of the Chi-square analysis, examining the relationship between age of the respondents and job satisfaction and engagement in relation to the work–life balance of women employees. The analysis shows that the Pearson's chi-square value is higher than the table value, with significance observed at the 0.05 level. In this study, the null hypothesis was accepted, indicating that there is no significant association between the respondents' age and their job satisfaction and engagement concerning work–life balance.

FINDINGS, SUGGESTIONS AND CONCLUSION

This study highlights several important findings regarding the impact of work–life balance on women employed in the banking sector. The results indicate that external factors such as societal expectations, cultural norms, and industry-related challenges

significantly influence women's ability to maintain a healthy work–life balance. Additionally, workplace culture and organizational policies play a crucial role, with varying levels of institutional support observed across different banks. Work-related demands and stress factors, particularly high workloads and tight deadlines, were identified as major barriers negatively affecting women's work–life balance.

Based on the findings, the study suggests that banks in Kanchipuram District should prioritize the implementation of supportive work–life balance policies, including flexible working arrangements, parental leave provisions, and employee assistance programs. Furthermore, banking institutions should foster a positive organizational culture that values work–life balance and promotes open communication between employees and management. The study concludes that effective work–life balance practices significantly enhance women employees' well-being, job satisfaction, organizational performance, and contribute to gender equality within the banking sector.

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Challenges Faced by Business Sectors During Covid 19

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ABSTRACT

As the COVID-19 continues its disruption, the livelihood of many entrepreneurs and small business owners has been threatened. According to a recent Goldman Sachs survey, 50% of business owners that were surveyed said they didn't think they could continue business operations for more than three months. Our current situation is deeply unsettling. Entrepreneurs are facing many obstacles, including ensuring the businesses they have put their blood, sweat, and tears into continue to stay afloat. On top of that, many of them have employees that they're trying to protect and reassure—a monumental task when they themselves are struggling with burnout. From hundreds of discussions with my clients, business owners, and regional leaders, I've been able to pinpoint main worries entrepreneurs are dealing with during the COVID-19 pandemic.

KEYWORDS : *Business entrepreneurs, COVID -19.*

INTRODUCTION

The Business People were not an exception. They had to start moving their business activities online. However, not everything could be solved conveniently online. COVID-19 has significantly influenced the entrepreneurial engagement of self-employed persons. Some business people had to close their businesses temporarily because of governmental restrictions; others had to impose precautions and to run their activities in reduced extent due to every crisis brings challenges and threats to small business and their organizations, no matter if initiated by human behavior, natural disasters or economic mechanisms (Doern et al., 2019). At the end of December 2019, the coronavirus (so-called COVID-19) has started spreading from Wuhan, China to other countries so widely and quickly, that on 11th March 2020, World Health Organization – WHO (2020) declared COVID-19 pandemic. As a response to mitigate coronavirus spread and save lives, governments in affected countries. Imposed desperate measures of social distancing, widespread lockdown, and restrictions on travelling, movement, and people gatherings. Many aspects of private and public life had

to be moved online (Liguori and Winkler, 2020). They also needed to find innovative solutions in all aspects of their endeavor as the consequences of the pandemic linger on. It took time before the business got oriented in the new situation, and governments started helping them out with policy-actions aiming to deliver information, advisory and financial support (Kuckertz et al., 2020; Turner and Akinremi, 2020). Pandemics will very likely influence traditional entrepreneurial decision-making processes (Chell, 2013), communication and conflict management (Aldairany et al., 2018), well-being (Stephan, 2018) and business outcomes (Wach et al., 2016).

Therefore, this special issue aims to capture the impact of COVID-19 pandemic on business sectors at different kinds of levels, to accumulate knowledge of best individual and policy-initiated practices helping business and self-employed persons to overcome the crisis.

COVID-19 is not only a challenge for existing start-ups but also for the creation of new ones

Periods of crisis usually correspond to drops in business

registrations. Analysis of the most recent data (Figure 1) confirms that firm creation dropped significantly across many countries in March and April 2020, with a decline as severe as 70% in April 2020 in Portugal compared to the same month of prior year, and 46%, 54%, and 58% in Hungary, France, and Turkey, respectively. Milder but still very strong declines are evident in Australia, the US, and Spain.²

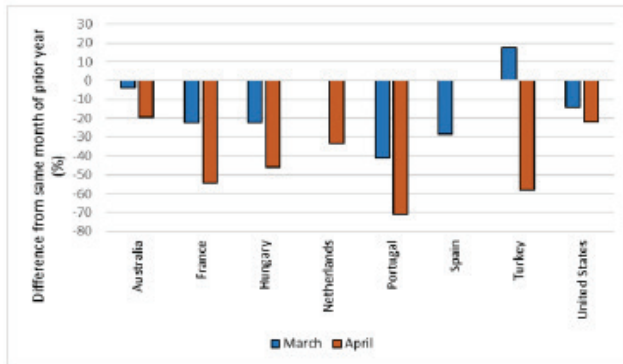


Fig. 1. Declines in business format

Notes: The figure shows the change in the number of new businesses in March and April 2020 relative to the same month in 2019. Data refer to new incorporated companies for Australia, to new incorporated companies (“Sociedades Constituidas, Mercantiles”) for Spain, to new “conventional businesses” for France (start-ups excluding self-managed micro-entrepreneurs) to new “enterprises with legal entity” for Hungary, new registration to the Trade Register of the Chamber of Commerce for the Netherlands, to the “formation of legal persons and equivalent entities” for Portugal, to “newly established companies” (excluding cooperative and sole proprietorship) for Turkey, to “new business application” for the United States. For the US data refer to weeks 10 to 13 (“March”) and 14 to 17 (“April”). Data may be preliminary.

Although the COVID-19 outbreak is, and will continue to be, a significant challenge for the start-up ecosystem, the current crisis may also create short-run and longer-run opportunities.

Notes: The figure shows the employment losses associated to a 20% decline in the number of entrants, relative to aggregate employment in the initial year, on average across countries and cohorts of entrants in 1995, 1998, 2001, 2004, 2007, 2010, and 2012

depending on availability. The simulation is based on the decomposition proposed by Calvino et al. (2016), focusing on SNA A38 industries in manufacturing and non-financial market services. Countries included are Austria, Belgium, Brazil, Canada, Costa Rica, Finland, Hungary, Italy, Japan, Korea, The Netherlands, Norway, Portugal, Spain, Sweden and Turkey.

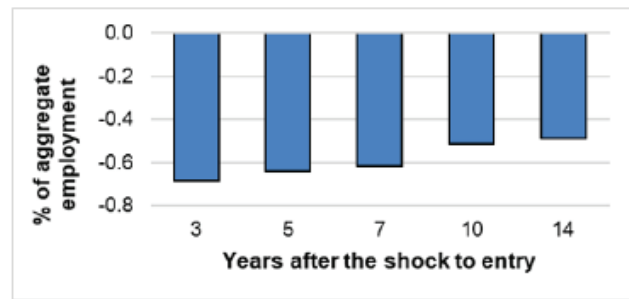


Fig. 2 A missing generation of new firms has persistent employment effects

There are relevant opportunities for start-ups in times of crisis

In fact, even as the number of new business registrations generally drops during recessions, many successful innovative start-ups or businesses have emerged from periods of crisis. Examples include Dropbox, Uber, Airbnb, WhatsApp, Groupon, and Pinterest, which were all founded during or just after the global financial crisis, and Alibaba’s Taobao that was founded during the SARS outbreak in China in 2003. This confirms that periods of crisis are not only a challenge, but also provide new opportunities for entrepreneurs, as start-ups can help address the constraints created by difficult health or economic conditions, and respond to changing preferences and needs. Relevant examples in the time of COVID-19 are outlined below.

First, there are opportunities for start-ups that introduce (or upscale) radical innovations that can be useful in the short run. Today, that could mean innovations in telemedicine, remote personal care, medical equipment, home delivery, food processing, teleworking, online education, contact tracing. Support for start-ups to respond to such short-term needs has been provided through targeted policy interventions, including a call from the European Commission for start-ups with technologies related to treating, testing, monitoring or other aspects of the COVID-19 outbreak to apply fast-

track funding under the EIC Accelerator programme. These, however, tend to ultimately address specific activities for which there is immediate demand or need.

The COVID-19 outbreak may induce persistent changes in societies, consumer habits or needs that could uncover valuable business opportunities for start-ups that are able to anticipate these changes. For instance, demand for remote working, e-commerce, education and health services may also change in the medium run, global value chains and cities may be transformed.

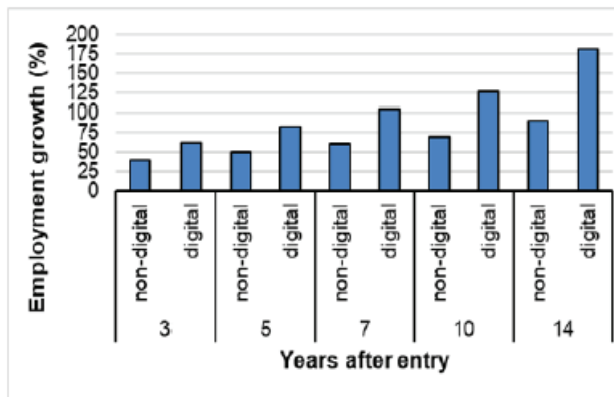


Fig. 3. Digital-intensive entrants have higher post-entry employment growth

Notes: The figure shows the employment growth of surviving entrants in digital-intensive and other industries, on average across countries and cohorts of entrants in 1995, 1998, 2001, 2004, 2007, 2010, and 2012 depending on availability. Countries included are Austria, Belgium, Brazil, Canada, Costa Rica, Finland, Hungary, Italy, Japan, Korea, The Netherlands, Norway, Portugal, Spain, Sweden and Turkey. The figure focuses on SNA A38 industries in manufacturing and non-financial market services. Digital-intensive industries include Computer & electronics, Machinery and equipment, Transport equipment, Telecommunications, IT, Legal & accounting, Scientific R&D, Marketing & other and Administrative services.

SUGGESTIONS FOR BUSINESS SECTORS

Acting and moving forward

A crisis like the one we're currently experiencing requires quick thinking in the face of uncertainty. However, with such high stakes on the line, entrepreneurs find themselves dealing with "analysis paralysis," or

the inability to decide due to overthinking. Delaying decisions will only lead to more problems—and those problems will require more decisions. As Jeff Boss wrote in a Forbes article about overcoming analysis paralysis, "In the military, it doesn't matter in which direction you choose to move when under a mortar attack, just so long as you move. Decisions are never final for the simple fact that change is never absolute."

Break down what you need to do into smaller steps and then attend to issues based on their level of urgency. Once you start taking proactive measures, you'll feel more in control and more confident in your ability to navigate oncoming trials and tribulations.

Keeping up with legislation

The business landscape is changing at a rapid pace. It seems like the government releases new regulations that affect business owners almost every day. In order to understand and follow new legislation and changes, business owners will need to monitor news from the local, state, and federal government daily. Most importantly, make sure you're getting your information from an official source, such as a government website, a bank representative, accountant, or other professionals in your network. One useful resource is the usa.gov website, which lists pertinent information about health and safety, money and taxes, benefits and grants, and much more.

Finding balance and achieving a healthy mindset

Fear. Anxiety. Hopelessness. We're all experiencing a lot of intense emotions during these ever-evolving times, and entrepreneurs are no exception. To make it worse, there's an additional level of stress as they try to do best by their employees and customers. It can help to remember the saying "you can't pour from an empty cup." Overextending yourself leads to burnout, and once you reach that state you won't be able to help anyone. That's why it's imperative that entrepreneurs carve out time to recharge and take care of themselves. It can be hard to break away from work right now. Be intentional by setting a block of time in your schedule for self-care—whether that be going for a walk, spending time with your family, or enjoying a long, luxurious bath. The more you're able to find inner calm during this crisis, the better able you are to make decisions and lead your business.

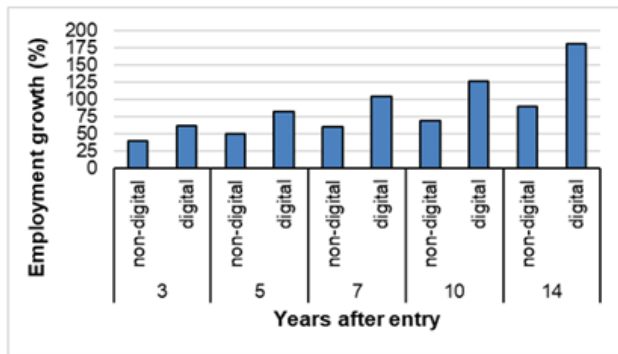


Fig. 4. Digital-intensive entrants have higher post-entry employment growth

Notes: The figure shows the employment growth of surviving entrants in digital-intensive and other industries, on average across countries and cohorts of entrants in 1995, 1998, 2001, 2004, 2007, 2010, and 2012 depending on availability. Countries included are Austria, Belgium, Brazil, Canada, Costa Rica, Finland, Hungary, Italy, Japan, Korea, The Netherlands, Norway, Portugal, Spain, Sweden and Turkey. The figure focuses on SNA A38 industries in manufacturing and non-financial market services. Digital-intensive industries include Computer & electronics, Machinery and equipment, Transport equipment, Telecommunications, IT, Legal & accounting, Scientific R&D, Marketing & other and Administrative services.

Policy responses can help speed up the recovery

Policy interventions should aim at tackling short-term challenges, supporting short-term liquidity and availability of funding, as well as providing the right conditions and incentives for innovative start-ups and potential entrepreneurs and boost their potential and capabilities to grasp them.

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The Psychology of Consumers' Preference and the Behaviour Analysis on Refrigerators

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ABSTRACT

The present study is based on an empirical survey on consumers' preference with special reference to Refrigerator related to various brands and its utility. The consumer preference is mainly based on price of the product, quality, design, type of Fridge, height, weight, built-in-stabilizer, make, colour, size, capacity, warranty, durability, model, less power consumption, storage capacity, energy-efficiency, compressor type, cooling technology, noise level and budget of the consumers. The consumers' preference is also related to the brand name of the Refrigerators, name of the shop, behaviour of salesmen / women, selling through credit cards, debit cards, EMT facility, without paying margin cost of the product, rating of the product, rate of interest per month, total number of instalments payment with interest, minimum initial payment, sales value (after use of 5 – 7 years) and zero per cent interest for the payment of first instalment etc. It is mainly concerned with the demand for the particular brand of the consumer durable (ie) Refrigerator. There are various brands of Refrigerators available such as Godrej, LG, Haier, Hisense, Samsung, Bosch, Lloyd, Voltas, Panasonic and Whirlpool. Apart from these brands of Refrigerators, there are some Refrigerators available in Trichirappalli such as Hitachi, Sony, Videocon, BPL, Electrolux and Kelvinator. For the present study, the data is collected from 65 houses residing at Uyyankondan Thirumalai, Trichirappalli City Corporation (Ward No.25). Thus, this study aims to analyse the reason for consumers' preference on various brands of Refrigerators. All the data collected from the households survey have analyzed with the help of relevant statistical tools such as simple averages, percentages, Spearman's Rank Correlation Coefficient and Chi-square test and conclusion was drawn.

KEYWORDS : *Consumers' preference, Psychology, Behaviour, Price, Brand, Refrigerators.*

INTRODUCTION

The study of the economic behaviour is based on consumer behaviour in the market and the preference is mainly based on the purchase of various commodities available in the market. The consumers buying behaviour is mainly based on their preferences such as income, price, tastes, design, colour, type, durability, quality, size, resale value (after use), brand name, EMI facility, less power consumption and recent technology. The main behaviour of consumers is based on several factors such as psychological, social, cultural, personal, economic and technological influences. There

are various brands of Refrigerators available in India / Tamil Nadu / Trichirappalli. But, the main focus of the present study is to analyse the consumers' preference on Refrigerators with related to the listed ten brands and also the reasons for consumer preference based on ten listed reasons. In economics, consumer preference is based on individual's income price demand and brand of particular durable individual's income, price, demand and brand of particular durable commodity. So, the present study is based on consumers' preference on Refrigerators in Uyyankondan Thirumalai, Trichirappalli City Corporation.

Statement of the Problem

The research problem of the present study is to analyze the reasons of consumers' preference on Refrigerators with related to income, price, type, design, model, colour, size, technology, durability, capacity, features and its resale value (after usage of 5 – 7 years). Now-a-days lot of brands of Refrigerators are available to compete in the market, and there is a cut-throat competition among many brands of Refrigerators. But, this study is an attempt to understand and analyze the consumers' preference on Refrigerators on various brands such as Godrej, Kelvinator, Whirlpool, Samsung, LG, Voltas, Videocon, BPL, Sony and Hitachi.

Objectives of the Study

- To study the socio-economic characteristics of the sample households.
- To identify the consumers' preference on Refrigerators with related to its brand name.
- To analyze the reasons for consumers' preference on Refrigerators among the sample households.

Hypothesis of the Study

- There is a positive Spearman's Rank Correlation Coefficient (R) between brand name of Refrigerators and reasons for consumers' preference on Refrigerators among the sample households.
- There is a significance relationship between brand name of Refrigerators and reasons for consumers' preference on Refrigerators. (Application of Chi-square Test 5 per cent level of significance.

METHODOLOGY

For the present study, primary data is collected with the help of structured interview schedule from the sample households. The total sample size is 65. The interview schedule consists of many questions related to socio-economic characteristics of sample households and also various questions related to consumers' preference on Refrigerators with different brands. The reasons on consumers' preference have also been analyzed.

The secondary data is also collected from various records, journals, newspapers, websites etc. with related to brand name of Refrigerators, its features, ratings,

size, capacity and price. All the collected data have analyzed and arrived at suitable conclusion.

Sample Design and Statistical Tools

The sample households have selected by systematic random sampling method with the help of complete list obtained from the Trichirappalli City Corporation and the sample households have selected by lottery method. The total sample size is 65 (ie) 13 streets and five households (Ward no.25). Statistical tools such as averages, percentages, Spearman's Rank Correlation Coefficient and Chi-square Test have been applied in order to arrive a suitable conclusion.

Analysis of Data

For the purpose of the present study, primary data has been collected from the sample households of 65 (ie) 65 respondents. The data is analyzed and explained with the help of statistical tools.

Table 1 Socio-economic Characteristics of Sample Households

Variable	Category	Total	Percentage to Total
Age (in yrs.)	25 – 30	5	7.7
	31 – 35	7	10.8
	36 – 40	15	23.0
	41 – 48	20	30.8
	Above 45	18	27.7
Marital Status	Married	65	100.0
Education	Upto XII	6	9.2
	Under Graduate	20	30.8
	Post Graduate	25	38.5
	Professionals	14	21.5
Employment	Business	6	9.2
	Salaried	59	90.8
Family Size	3 – 4	24	37.0
	4 – 5	33	50.7
	5 – 6	8	12.3

Source : Compiled from Primary data.

From the Table 1, it is understood that all the sample respondents have married (ie) 100%. The most of the respondents (30.8 per cent) have found in the age group between 41 and 45 years; the majority of the

respondents have completed Post graduation (ie) 38.5 per cent followed by 30.8 per cent have completed Under graduation and very few (ie) 9.2 per cent have studied up to XII. With regard to the employment status of sample respondents, it is found that 90.8 per cent belong to salaried class, depending upon monthly income and very few (ie) 9.2 per cent are running their own business. And, it is interesting to analyze the family size of the sample respondents. It is found that, majority of the family (50.7 per cent) have members between 4 and 5; 37 per cent of them have the total family members between 3 and 4 and very few found in the family members between 5 and 6 (ie) 12.3 per cent.

Table 2 Total Income of the Sample Households (monthly in Rs.

Sl. No.	Income (in Rs.)	Total	Percentage to Total
1	Upto 60000	6	9.2
2	60001 – 1 lakh	26	40.0
3	Above 1 lakh – 1.5 lakh	29	44.6
4	Above 1.5 lakh – 2 lakh	4	6.2
Total		65	100.0

Source: Compiled from Primary data

From Table 2, it is understood that majority (44.6 per cent and 40 per cent) of the respondents total monthly income ranges between above Rs.60,000 and 1.5 lakh and very few of them are earning an income of above Rs.1.5 lakh and up to Rs.2 lakh per month (ie) 6.2 per cent. And, 9.2 per cent are earning an income of less than or up to Rs.60000 per month.

Consumers' preference on Refrigerators (various Brands) is shown in Table 3. Out of 10 brands of Refrigerators, Godrej brand stood first (ie) 49.2 per cent of the respondents preferred the brand, followed by Kelvinator (18.5 per cent), Whirlpool (7.7 per cent), Samsung (12.3 per cent), LG (9.2 per cent) and Voltas (3.1 per cent). And, other brands such as Videocon, BPL, Sony and Hitachi are not preferred by the consumers or respondents residing in Uyyanknodan Thitumalai area of Trichirappalli City Corporation. It is found from the Table 3 on Brand preference on Refrigerator namely Godrej, recognized by potential consumers related to its price, colour, model, size, type, new technology, income

of the consumer, consumers' desire, advertisement, warranty, durability and name of the company. Brand preference reflects a desire to use a particular company's products or services even when they are equally priced and equally available alternatives. Brand preference is important to companies because it provides an indicator of their consumers' loyalty, success of their marketing tactics and its strength of their respective brands. Consumer today seeks experiences with which they can associate themselves emotionally, and consumers experience the emotional element of pleasure in the usage of products. So, the company or companies should perceive consumers interactions with their goods and services as a source of creating emotional association with a brand. This consumer brand relationship leads to brand loyalty and their willingness to make financial sacrifices (ie) ready to pay a premium price to buy it. Therefore, it is necessary to study and analyze about the brand preference of consumers.

Table 3. Consumers' Preference pm Refrigerators (Various Brands)

Sl. No.	Name of Refrigerators	Total no. of Respondents	Percentage to Total
1	Godrej	32	49.2
2	Kelvinator	12	18.5
3	Whirlpool	5	7.7
4	Samsung	8	12.3
5	LG	6	9.2
6	Voltas		
7	Videocon		
8	BPL		
9	Sony		
10	Hitachi		
Total	65	100.0	

Source: Compiled from Primary data

Table 4 Consumers' Preference on Refrigerators with related to its type

Sl. No.	Type of Refrigerators	Total no. of Respondents	Percentage to Total
1	Single Door	32	49.2
2	Frost Free-Bottom Mounted	1	1.6

3	Frost Free-Top Mounted	-	-
4	Built in Stabilizer	32	49.2
	Total	65	100.0

Source: Compiled from Primary data.

From the Table 4, it is understood that consumers' preference to buy single door and built in stabilizer type of Refrigerators (ie) 98.4 per cent and very few (1.6 per cent) have preferred to buy frost free bottom mounted type and none of them have preferred Frost free-top mounted type of Refrigerators.

Table 5 Consumers' Preference on Refrigerators with related to its Capacity

Sl. No.	Capacity of Refrigerators	Total no. of Respondents	Percentage to Total
1	Less than 200 L	32	49.2
2	200L – 220L	28	43.1
3	220L – 240L	2	3.1
4	Above 240L	3	4.6
	Total	65	100.0

Source: Compiled from Primary data.

Table 5 shows the consumers' preference on Refrigerators with related to the desired capacity. It is shown from the data that, majority of the respondents (49.2 per cent) preferred to buy the refrigerator with less than the capacity of 200L (approximately 196L) because of less power consumption, size of the refrigerator and the space to keep the refrigerator in a particular place. And, 43.1 per cent of the consumers' preferred the capacity of 200L-220L Refrigerators.

Table 6 Reasons for Consumers' Preference on Refrigerators

Sl. No.	Reasons	Total no. of Respondents	Percentage to Total
1	Price of Refrigerator	32	49.2
2	EMI facility	4	6.2
3	Brand name	7	10.8
4	Capacity	3	4.6

5	Durability	6	9.2
6	Colour	6	9.2
7	Type of Refrigerators	2	3.1
8	Recent Technology	5	7.7
9	Less power consumption	-	-
10	Resale value (after use)	-	-
Total	65	100.0	

Source: Compiled from Primary data.

It is understood from the Table 6 that, the reasons for consumers' preference on Refrigerators listed as price, EMI facility, brand name, capacity, durability, colour, type of Refrigerators, technology, less power consumption and Resale value of Refrigerator (after use). Out of ten listed reasons, price of the Refrigerator stood as 49.2 per cent, the brand name is preferred by 10.8 per cent followed by durability and colour (9.2 per cent) of the consumers' (ie) respondents. But, other reasons like capacity, EMI facility, type and recent technology were in the order of 7.7 per cent, 6.2 per cent, 4.6 per cent and 3.1 percent respectively. So, it is concluded that, consumers' preference on Refrigerators based mainly on the price and its Brand name.

CONCLUSION

From the present study it is understood that the consumers' preference on Refrigerators mainly based on price of the Refrigerators, its grand name, colour, quality, size, capacity, type, model, income of the individuals and recent technology. Apart from all these preferences on consumers', it is depending on individual income and price of particular brand. It is proved in the study area namely Uyyankondan Thirumalai of Trichirappalli City Corporation (ward no.25).

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Work-Life Balance and Stress Management of Employees in Tamil Nadu State Transport Corporation in Kumbakonam District of Tamil Nadu

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ABSTRACT

This study examines the relationship between work-life balance, stress management practices, and job performance of employees in the Tamil Nadu State Transport Corporation (TNSTC) in Kumbakonam district. Using descriptive research design and a multi-stage random sampling method, data were collected from 125 drivers and conductors across selected depots through structured interviews. Statistical analyses including ANOVA, multiple regression, t-tests, and Structural Equation Modeling (SEM) with AMOS were employed to test the hypotheses. Findings reveal that workload, shift timings, job insecurity, and lack of organizational support significantly affect stress and well-being, while effective welfare measures enhance balance and performance. The study concludes that supportive personnel management policies are essential for improving employee satisfaction, productivity, and organizational sustainability.

KEYWORDS : *Work-life balance, Stress management, Job performance, Personnel management, Welfare measures, TNSTC, Employee well-being.*

INTRODUCTION

The work-life balance and stress management have increasingly become central concerns in the field of personnel management, especially within public sector organizations where employees must perform highly demanding, time-sensitive, and service-oriented tasks, and the Tamil Nadu State Transport Corporation (TNSTC) provides a relevant context for studying these issues in India. Personnel management, as defined by Flippo, Jucius, and the National Institute of Personnel Management of India, is not simply about the administrative handling of human resources but is a holistic system of policies, practices, and programs designed to align organizational objectives with individual employee goals by integrating people with institutions and ensuring effective, efficient, and fulfilling participation. Within this framework, the study of work-life balance and stress management becomes

vital, since employees are the most valuable resource of any organization, and their ability to manage stress while balancing professional and personal commitments directly determines both productivity and job satisfaction. The COVID-19 pandemic amplified these pressures as transport workers were frontline employees exposed to health risks and increased workloads, with reduced opportunities for rest or family engagement. These realities highlight the need for TNSTC to adopt holistic personnel management strategies that integrate organizational efficiency with employee welfare. Stress and work-life balance are closely interlinked, each reinforcing the other, and require simultaneous treatment in human resource policies. In Kumbakonam, where employees largely come from rural and semi-urban backgrounds with limited alternative employment, unmanaged stress and imbalance also create financial insecurities and psychological strain, affecting not

only individuals but their families and communities as well. Hence, research in this area is practically significant, offering insights into how public sector organizations can create supportive work environments while maintaining efficiency. Ultimately, the study of work-life balance and stress management in TNSTC Kumbakonam is not merely academic but an essential inquiry into how organizational demands intersect with personal well-being, aiming to enhance employee satisfaction, reduce strain, and improve organizational productivity, while also contributing to the larger socio-economic development of the district.

Research Objectives

1. To examine the factors influencing work-life balance among employees of Tamil Nadu State Transport Corporation in Kumbakonam district.
2. To analyze the major causes and effects of stress on the performance and well-being of TNSTC employees.
3. To evaluate the role of organizational policies and welfare measures in reducing stress and improving work-life balance among TNSTC employees.

Research Hypothesis

H0: There is no significant relationship between work-life balance and stress management practices and the job performance of employees in Tamil Nadu State Transport Corporation, Kumbakonam district.

Materials and Research Design

The present study is descriptive in nature and focuses on examining the impact of shift work and irregular schedules on stress levels among employees of the Tamil Nadu State Transport Corporation (TNSTC) in the Kumbakonam region. This area was purposefully chosen as it caters to both urban and rural transportation needs and presents diverse and challenging service requirements. Kumbakonam's unique geographical and socio-economic characteristics further provide an appropriate context to study the specific stressors and experiences of TNSTC employees. A structured interview schedule was used as the primary research instrument to collect data. It was carefully designed to gather information on work schedules, stress levels, coping mechanisms, and demographic details, thereby

providing comprehensive insights into the research problem.

RESULTS AND DISCUSSIONS

Table 1 Factors Influencing Work Life Balance on TNSTC Employees

Source of Variation	Sum of Squares (SS)	df	Mean Square (MS)	F-value	Sig. (p-value)
Between Groups	215.37	4	53.84	6.27	0.000 **
Within Groups	1032.62	120	8.61		
Total	1247.99	124			

Source: Data collection

The results of the ANOVA presented in Table 1 reveal that there are statistically significant differences among the factors influencing work-life balance of TNSTC employees. The between-group variation (SS = 215.37, MS = 53.84) with an F-value of 6.27 and a p-value of 0.000 ($p < 0.01$) indicates that the identified factors such as workload, shift timings, family responsibilities, organizational policies, and welfare measures have differing levels of impact on employees' ability to maintain work-life balance. Since the significance value is less than 0.05, it confirms that these differences are meaningful and not due to chance. The relatively higher between-group variance compared to within-group variance suggests that certain factors strongly influence employees' balance between personal and professional life. Thus, the findings imply that TNSTC management needs to prioritize policies and interventions tailored to specific stressors, particularly irregular work schedules and workload, to enhance work-life balance and employee well-being.

Table 2 Causes and Effects of Stress on The Performance And Well-Being of TNSTC Employees

Independent Variables	Unstad Coefficients (B)	Std. Error	Std Beta	t-value	Sig. (p-value)
Constant	12.451	2.038	—	6.11	0.000 **
Workload	0.327	0.092	0.311	3.55	0.001 **
Shift Timings	0.289	0.085	0.276	3.39	0.001 **
Job Insecurity	0.198	0.078	0.182	2.54	0.012 *
Lack of Family Support	0.243	0.080	0.221	3.03	0.003 **

Poor Organizational Support	0.354	0.089	0.338	3.98	0.000 **
R2	0.8843				
Adj R2	0.8781				
F Value	24.671				
Sig.	0.000				

Source: Data collection

The regression results in Table 2 clearly indicate that the major causes of stress—workload, shift timings, job insecurity, lack of family support, and poor organizational support—significantly influence the performance and well-being of TNSTC employees. Among these, poor organizational support ($\beta = 0.338$, $p = 0.000$) and workload ($\beta = 0.311$, $p = 0.001$) emerge as the strongest predictors, highlighting the importance of supportive policies, fair practices, and manageable job demands. Shift timings ($\beta = 0.276$, $p = 0.001$) also play a crucial role, showing how irregular and extended work schedules directly affect employee health and productivity. Job insecurity ($\beta = 0.182$, $p = 0.012$) and lack of family support ($\beta = 0.221$, $p = 0.003$) further contribute to stress, reflecting the interaction of both organizational and personal factors. The model explains 88 percent of the variance ($R^2 = 0.8843$), with an F-value of 24.671 ($p < 0.01$), confirming its robustness. These findings suggest that effective organizational policies and welfare measures are critical for reducing stress and improving employee well-being.

Table 3 Role of Organizational Policies And Welfare Measures In Reducing Stress And Improving Work-Life Balance Among TNSTC Employees

Group (Employees)	N	Mean	Std. Deviation	t-value	df	Sig. (2-tailed)
With Adequate Policies	65	3.92	0.74	4.212	123	0.000 **
Without Adequate Policies	60	3.21	0.69			

Source: Data collection

The t-test results in Table 3 demonstrate a significant difference between employees who perceive organizational policies and welfare measures as adequate and those who do not. Employees with

adequate policies reported a higher mean score ($M = 3.92$, $SD = 0.74$) compared to those without adequate policies ($M = 3.21$, $SD = 0.69$). The calculated t-value of 4.212 with a significance level of $p = 0.000$ ($p < 0.01$) confirms that this difference is statistically meaningful. This indicates that supportive organizational policies and welfare measures play a crucial role in reducing stress and promoting work-life balance among TNSTC employees. When employees receive sufficient welfare support such as fair leave policies, healthcare facilities, rest breaks, and recognition, their ability to manage professional demands alongside personal responsibilities improves significantly. Conversely, the absence of such policies results in higher stress and imbalance. Thus, welfare initiatives are vital for enhancing employee satisfaction, organizational performance, and overall well-being.

Hypothesis testing supports the conceptual framework. Supported all four hypotheses: H1 showed that work-life balance has a large positive effect on job performance; H2 showed that stress management practices have a medium but significant positive effect on performance; H3 showed that work-life balance has a large positive effect on stress management; and H4 showed that stress management partially mediates these effects. These findings have practical implications for TNSTC human resource management due to their medium to large effect sizes.

Additional diagnostics like modification indices, standardized residuals, and critical ratio comparisons refine the model. Minor correlations between error terms were found in the modification indices, but none significantly altered the model structure. Standards residual covariances were within acceptable limits, indicating no major misfit between observed and predicted covariances. Critical ratio tests showed no significant differences between paths or indicators, indicating measurement item consistency and stability. The structural model strongly supports the alternative hypothesis that work-life balance, stress management, and job performance are related for TNSTC employees in Kumbakonam district. Integrated personnel management strategies are important due to good model fit indices, significant path coefficients, high construct reliability, substantial variance explained, and robust mediation results.

CONCLUSION

The study on work-life balance and stress management among Tamil Nadu State Transport Corporation (TNSTC) employees in Kumbakonam district shows that personnel management practices affect employee well-being, job satisfaction, and organizational performance. The results show that workload, irregular shift timings, job insecurity, lack of family support, and inadequate organizational support are the main stressors affecting employees' mental and physical health, reducing productivity, job satisfaction, and service quality. S

However, the study also shows that effective organizational policies and welfare measures reduce stress and improve work-life balance, creating a healthier and more motivated workforce. ANOVA, regression, t-tests, and SEM-AMOS analysis show that work-life balance and stress management practices significantly affect job performance, with stress management acting as a partial mediator. The path analysis shows that employees who can balance work and life perform better, cope with stress better, and improve organizational outcomes. High construct reliability and good fit indices support the findings' robustness. This study concludes that addressing stress and work-life balance is not just an internal workforce issue but a strategic necessity for public sector organizations like TNSTC because it improves organizational performance, customer satisfaction, and regional socio-economic progress.

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A Study on Demographic Differences in Employee Perception of Human Resource Practices

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ABSTRACT

Employee perception of human resource (HR) practices plays a crucial role in determining job satisfaction, motivation, and organizational commitment, particularly in private sector companies where workforce diversity is increasing. Demographic characteristics such as age and gender influence how employees interpret and respond to HR policies and practices. Differences in life stages, career expectations, and social roles may shape employees' perceptions of recruitment, training, appraisal, compensation, and other HR practices. Understanding these demographic variations is essential for designing inclusive and effective HR strategies.

The present study aims to examine whether employee perception of HR practices differs significantly across age groups and gender in private sector organizations. The study is guided by two hypotheses that test the existence of significant differences in employee perception based on age and gender. A descriptive and analytical research design is adopted, and primary data are collected from employees working in private sector companies using a structured questionnaire measured on a five-point Likert scale. Appropriate statistical tools such as independent sample t-test and one-way analysis of variance (ANOVA) are employed to test the formulated hypotheses.

The findings of the study are expected to reveal whether age and gender significantly influence employee perception of HR practices. The study highlights the importance of considering demographic diversity while formulating HR policies and practices. The results are anticipated to provide valuable insights to HR managers and organizational leaders in developing age- and gender-sensitive HR strategies that enhance employee satisfaction, promote equity, and improve overall organizational effectiveness in private sector companies.

KEYWORDS : *Employee perception, Human resource practices, Age differences, Gender differences, Workforce diversity, Private sector companies, Job satisfaction, Organizational commitment, Employee attitudes.*

INTRODUCTION

In the contemporary organizational environment, human resources are widely recognized as a critical source of competitive advantage, particularly in private sector companies where innovation, productivity, and service quality determine organizational success [1]. Human Resource Management (HRM) has evolved from a traditional administrative function into a strategic role that focuses on attracting, developing, motivating, and retaining talented employees [2]. Effective HR practices are essential not only for

achieving organizational objectives but also for shaping positive employee perceptions, which in turn influence job satisfaction, commitment, and performance.

Employee perception refers to the way employees interpret, evaluate, and respond to organizational policies, procedures, and managerial actions. These perceptions are formed through employees' day-to-day experiences with HR practices such as recruitment and selection, training and development, performance appraisal, compensation and rewards, and employee relations[3]. Positive employee perception enhances trust

in management, promotes engagement, and encourages employees to align their goals with organizational objectives. Conversely, negative perceptions may lead to dissatisfaction, reduced motivation, absenteeism, and higher employee turnover, which are particularly detrimental in private sector organizations operating in competitive markets [4].

Workforce diversity has become a defining characteristic of modern organizations, especially in the private sector [5]. Employees differ in terms of age, gender, educational background, experience, and career aspirations. Among these demographic factors, age and gender are considered particularly significant in influencing employee perception of HR practices. Employees belonging to different age groups are often at varying stages of their careers, which may affect their expectations regarding training opportunities, performance evaluation, career advancement, and work-life balance. Younger employees may prioritize learning opportunities and career growth, while older employees may value job security, recognition, and stability [6] [7].

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design. The descriptive design is employed to understand the level of employee perception toward human resource (HR) practices in private sector companies, while the analytical design is used to examine whether significant differences exist in employee perception across age groups and gender. This design is considered appropriate as it enables systematic data collection and quantitative analysis to test the formulated hypotheses using statistical tools.

Population of the Study

The population of the study consists of employees working in private sector companies. Employees from various functional departments such as administration, finance, marketing, operations, production, and human resources are included. The population also covers employees across different organizational levels, including junior, middle, and senior management, to ensure a comprehensive understanding of employee perception toward HR practices.

Sample Size and Sampling Technique

A total of 650 respondents constitute the sample for the study. The sample size is considered sufficient to ensure reliability, validity, and generalizability of the results. The study adopts a stratified random sampling technique, wherein employees are categorized based on demographic characteristics such as age groups and gender. From each stratum, respondents are selected randomly to ensure proportionate representation and to minimize sampling bias.

Sources of Data

The study is based on both primary and secondary data sources.

- **Primary Data:** Primary data are collected directly from employees using a structured questionnaire designed specifically for the study.
- **Secondary Data:** Secondary data are collected from books, research journals, published articles, company reports, and websites related to human resource management, employee perception, workforce diversity, age, and gender studies.

Pilot Study

A pilot study is conducted with 50 respondents to test the clarity, relevance, and reliability of the questionnaire. Feedback obtained from the pilot study is used to refine the wording and structure of the questionnaire. The pilot study ensures that the final instrument is free from ambiguity and suitable for large-scale data collection.

PROBLEM STATEMENT AND RESEARCH OBJECTIVES

In the contemporary private sector environment, organizations increasingly rely on effective human resource (HR) practices to enhance employee satisfaction, motivation, and organizational performance. As workforces become more diverse in terms of age and gender, employees may perceive HR practices differently based on their demographic characteristics, career stages, and social roles. Such differences in perception can influence job satisfaction, commitment, engagement, and overall organizational effectiveness.

Employee perception of HR practices—such as

recruitment and selection, training and development, performance appraisal, compensation and rewards, and employee relations—is shaped by individual experiences and expectations. Employees belonging to different age groups often vary in their priorities, with younger employees focusing on learning opportunities and career growth, while older employees may value job security, recognition, and stability. Similarly, gender-based differences may arise due to variations in workplace experiences, expectations of fairness, pay equity, performance evaluation, and work–life balance policies.

Despite increased attention to diversity and inclusion, many private sector organizations continue to face challenges in ensuring that HR practices are perceived as fair, equitable, and inclusive across all demographic groups. Differences in employee perception based on age and gender, if not addressed, may lead to dissatisfaction, reduced motivation, interpersonal conflict, and higher employee turnover. However, empirical studies specifically examining age- and gender-based differences in employee perception of HR practices in private sector companies remain limited.

Therefore, there is a need for a systematic and empirical investigation to examine whether employee perception of HR practices differs significantly across age groups and gender. Understanding these differences can help organizations design inclusive HR policies that address the diverse needs of employees and promote a positive work environment. The present study seeks to address this research gap by analyzing employee perception of HR practices across age and gender among employees working in private sector companies.

1. To assess the level of employee perception toward HR practices in private sector companies.
2. To analyze employee perception of HR practices across different age groups.
3. To examine whether there is a significant difference in employee perception of HR practices based on age.
4. To analyze employee perception of HR practices based on gender.
5. To examine whether there is a significant difference

in employee perception of HR practices between male and female employees.

6. To identify demographic patterns influencing employee perception of HR practices.
7. To provide suitable suggestions for improving HR practices by considering age- and gender-related differences.

DATA ANALYSIS AND INTERPRETATION

Difference in Employee Perception of HR Practices across Age Groups in Private Sector Companies

Table 1 presents the descriptive statistics of employee perception of HR practices across different age groups among 650 respondents working in private sector companies. The mean scores of employee perception are reported for four age categories, along with their respective standard deviations.

Table 1: Descriptive Statistics of Employee Perception across Age Groups

Age Group	N	Mean	Std. Deviation
Below 25 years	168	3.54	0.72
26–35 years	247	3.71	0.73
36–45 years	156	3.79	0.71
Above 45 years	79	3.62	0.75
Total	650	3.68	0.74

Interpretation: The results indicate variations in employee perception across age groups. Employees in the age group of 36–45 years show the highest mean perception score (3.79), followed by those in the 26–35 years age group (3.71). Employees below 25 years report the lowest mean score (3.54), while employees above 45 years record a mean score of 3.62. The standard deviation values suggest consistency in responses across all age groups. These findings indicate that employee perception of HR practices tends to improve with age and experience, particularly among mid-career employees.

Table 2 presents the results of the one-way analysis of variance (ANOVA) conducted to examine whether there is a significant difference in employee

perception of HR practices across different age groups. The table displays the sum of squares, degrees of freedom, mean square values, F value, and significance level.

Table 2: One-Way ANOVA Showing Difference in Employee Perception across Age Groups

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.742	3	6.247	11.83	0.000
Within Groups	341.836	646	0.529		
Total	360.578	649			

Interpretation: The ANOVA results reveal that the F value (11.83) is statistically significant at the 0.05 level, as the significance value is 0.000. This indicates that there is a significant difference in employee perception of HR practices across different age groups. Therefore, the null hypothesis (H_{05}) is rejected and the alternative hypothesis (H_{15}) is accepted. The result confirms that age plays a significant role in influencing employee perception of HR practices in private sector companies.

Difference in Employee Perception of HR Practices Based on Gender in Private Sector Companies

Table 3 presents the descriptive statistics of employee perception of HR practices based on gender among 650 respondents. The mean scores and standard deviation values are reported separately for male and female employees.

Table 3: Descriptive Statistics of Employee Perception Based on Gender

Gender	N	Mean	Std. Deviation
Male	382	3.72	0.73
Female	268	3.62	0.75
Total	650	3.68	0.74

Interpretation: The findings show that male employees have a slightly higher mean perception score (3.72) compared to female employees (3.62). The standard deviation values indicate a similar level of variability in responses for both genders. This suggests that while both male and female employees generally hold positive perceptions of HR practices, male employees perceive

HR practices slightly more favorably than female employees.

Table 4 presents the results of the independent samples t-test conducted to examine whether there is a significant difference in employee perception of HR practices based on gender. The table reports the t-value, degrees of freedom, and significance value.

Table 4: Independent Samples t-Test Showing Difference in Employee Perception Based on Gender

Test	t-value	df	Sig. (2-tailed)
Employee Perception	2.47	648	0.014

Interpretation: The t-test results indicate that the t-value of 2.47 is statistically significant at the 0.05 level, as the significance value is 0.014. This result confirms that there is a significant difference in employee perception of HR practices between male and female employees. Hence, the null hypothesis (H_{06}) is rejected and the alternative hypothesis (H_{16}) is accepted. The findings suggest that gender significantly influences employee perception of HR practices in private sector companies.

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

- The analysis reveals that employee perception of HR practices varies across different age groups in private sector companies.
- Employees in the 36–45 years age group exhibit the highest level of positive perception toward HR practices, indicating that mid-career employees tend to evaluate HR practices more favorably.
- Employees in the 26–35 years age group also show a relatively high level of positive perception, suggesting that early-to-mid career employees value HR practices such as career growth, performance appraisal, and rewards.
- Employees below 25 years report the lowest mean perception score, indicating comparatively lower satisfaction or higher expectations from HR practices among younger employees.

- e) The one-way ANOVA results confirm that the differences in employee perception across age groups are statistically significant, leading to the rejection of the null hypothesis (H_{05}).
- f) With respect to gender, both male and female employees generally hold positive perceptions of HR practices.
- g) Male employees report a slightly higher mean perception score than female employees, indicating a marginal difference in perception levels.
- h) The independent samples t-test reveals a statistically significant difference in employee perception of HR practices based on gender, leading to the rejection of the null hypothesis (H_{06}).
- i) Overall, the findings confirm that age and gender significantly influence employee perception of HR practices in private sector companies.

Suggestions

- Private sector organizations should design age-specific HR strategies to address the varying expectations of employees at different career stages.
- HR policies should be tailored to better engage younger employees, focusing on career guidance, skill development, and clear growth pathways.
- Organizations should ensure that HR practices remain relevant and motivating for mid-career and senior employees by emphasizing recognition, leadership opportunities, and job security.
- Regular feedback mechanisms should be implemented to capture employee perceptions across different age groups and make necessary policy adjustments.
- HR managers should focus on creating gender-inclusive HR practices, ensuring fairness in recruitment, performance appraisal, promotions, and compensation.
- Organizations should periodically review compensation, appraisal, and work-life balance policies to address potential gender-based perception gaps.
- Training programs on diversity, equity, and

inclusion should be provided to managers to reduce unconscious bias in HR decision-making.

- Transparent communication of HR policies can help build trust and improve employee perception across both age and gender groups.

CONCLUSION

The present study examined the difference in employee perception of HR practices across age groups and gender in private sector companies. The findings clearly indicate that employee perception is not uniform and varies significantly based on demographic characteristics such as age and gender. Employees in the mid-career age group (36–45 years) demonstrate the most positive perception of HR practices, while younger employees exhibit relatively lower perception levels, highlighting the need for targeted HR interventions.

The study also confirms that gender significantly influences employee perception, with male employees reporting slightly higher perception levels than female employees. These findings emphasize the importance of adopting inclusive and employee-centric HR practices that address the diverse needs and expectations of a heterogeneous workforce.

In conclusion, private sector organizations must recognize demographic diversity as a critical factor influencing employee perception. By implementing age-responsive and gender-sensitive HR policies, organizations can enhance employee satisfaction, promote equity, improve engagement, and achieve sustainable organizational performance.

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Unravelling Green Brand Loyalty: The Dual Influence of Environmental Transparency and Perceived Greenwashing, Mediated by Consumer Skepticism in the FMCG Sector

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ABSTRACT

While disillusionment with green marketing has grown, consumers' beliefs in the authenticity of sustainability-related claims have diminished. Modern FMCG consumers are even more sceptical than the traditional FMCG user, which may be complicit in thwarting the translation of green intentions into green brand loyalty, which occurs despite the prevalence of eco-labels and environmental disclosures. The goal of this study was to develop and empirically validate an integrated model connecting environmental transparency and perceived greenwashing to green brand loyalty among green consumers via a process of green consumer skepticism. It is based on the Signaling Theory and the Attribution Theory and follows a quantitative and cross-sectional methodology by gathering data in form of surveys of 225 consumers in the FMCG industry. The results of the analysis conducted with the help of the PLS-SEM indicate that the impact of transparency on skepticism is significant and negative. In addition, greenwashing leads to strengthening the skepticism. Moreover, green consumer skepticism considerably reduces brand loyalty and also played a role of partial mediator, becoming one of the major psychological challenges to be able to maintain consumer loyalty. In theory, the research fills in the gap between the disjointed views of green communication by uniting the transparency and deceit into the same conceptual framework of the skepticism-induced loyalty development. As a management issue, it has been narrowed down to the reality that verifiable transparency is not only an ethical compliance problem, but a strategic requirement to overcome consumer skepticism and establish long term brand loyalty in a world that asks sustainability questions.

KEYWORDS : *Environmental transparency, Perceived greenwashing, Green consumer skepticism, Green brand loyalty, FMCG, Signaling theory, Attribution theory, PLS-SEM.*

INTRODUCTION

The modern market is experiencing a decisive shift to sustainability which has been a characteristic feature of the modern business practices. The concept of environmental responsibility is not considered a peripheral issue anymore but has become one of the key determinants of corporate competitiveness and consumer preference (Trudel, 2023; Kautish et al., 2023). To address this changing paradigm, the market has been flooded with a plethora of so-called green products by a multiplicity of brands, with claims

purporting that they act on ethical consumption and environmental good health. However, the novel wave of environment-friendly marketing has produced a very interesting paradox. The market is now in need of sustainability, yet the popularity of fake or exaggerated environmental stories, otherwise referred to as greenwashing, has caused a credibility crisis that is degrading the foundations of consumer trust (Delmas and Burbano, 2011; Szabo and Webster, 2021). The result is the collapse of a green market place where even the genuinely responsible companies struggle to find the difference between the authenticity and artifice.

This study directly addresses that void by proposing and empirically testing a conceptual model that unites communication theory with consumer psychology through the mediating role of skepticism. The research pursues three interrelated objectives:

1. To examine the predictive effects of Environmental Transparency (ET) and Perceived Greenwashing (PGW) on Green Consumer Skepticism (GCS) in the FMCG sector.
2. To assess the direct negative influence of GCS on Green Brand Loyalty (GBL).

Altogether, this research has contributions to theory, methodology and practice. In theory, it promotes a reconciliatory model between Signaling and Attribution theories, in which GCS is the psychological mediator in which corporate communication transforms into loyalty. In the methodology, it uses the PLS-SEM to confirm the structural relationships through a context-specific FMCG sample and a predictive strength of fast-turnover market. The implications of the findings, in managerial terms, should be these actionable suggestions: the development of verifiable transparency and a minimum of the perceived opportunism can not only be morally imperative but, also, a strategic tool to turn suspicious consumers into loyal fans and ensure brand viability in the long run.

Development of Research hypotheses

H1: Environmental Transparency (ET) has a negative effect on Green Consumer Skepticism (GCS).

H2: Perceived Greenwashing (PGW) has a positive effect on Green Consumer Skepticism (GCS).

H3: Green Consumer Skepticism (GCS) has a negative effect on Green Brand Loyalty (GBL).

RESEARCH METHODOLOGY

Research Design

This research paper uses the quantitative cross-sectional research design to test empirically the postulated relationships among environmental communication strategies, consumer skepticism, and long-term brand loyalty. The research is based on the positivist epistemology where the researcher will employ a deductive methodology because it seeks to confirm

the conceptual model by the evidence of observable behaviour. It is set within the framework of FMCG where consumers buy their products quite often and with low-involvement, brand credibility and trust are essential to consumer retention. (Ailawadi & Keller, 2004).

Data Analysis Procedure

The data were examined using Partial Least Squares Structural Equation Modeling (PLS-SEM) in SmartPLS 4. The analysis followed two key phases. In the first phase, the measurement model was assessed to confirm that the indicators reliably represented their respective constructs. In the second phase, the structural model was evaluated to verify the hypothesized relationships among the variables. To test the significance of these relationships, a bootstrapping method with 5,000 resamples was applied, providing accurate estimates of both direct and indirect effects.

Table 1: Details of the respondents

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	92	40.9
	Female	133	59.1
Age (Years)	18–24 years	61	27.1
	25–34 years	84	37.3
	35–44 years	52	23.1
	45 years & above	28	12.5
Level of education	Undergraduate	67	29.8
	Postgraduate	106	47.1
	Doctorate	18	8.0
	Others (Diploma /Professional)	34	15.1
Occupation	Student	52	23.1
	Private Sector Employee	88	39.1
	Government Employee	31	13.8
	Self-employed / Entrepreneur	36	16.0
	Homemaker	18	8.0

Monthly Income (INR)	Below ₹25,000	39	17.3
	₹25,001–₹50,000	74	32.9
	₹50,001–₹75,000	58	25.8
	Above ₹75,000	54	24.0
Frequently Purchased Green Product Type	Personal care (e.g., shampoo, soap)	86	38.2
	Food & beverages	54	24.0
	Household cleaning products	48	21.3
	Fabric / Apparel	37	16.4

RESULTS

Evaluation of Measurement Model

Measurement model was tested using three key criteria: indicator reliability, internal consistency, and convergent validity. Indicator reliability was confirmed as all outer loadings surpassed the recommended 0.70 threshold, indicating strong representation of each construct (Hair

et al., 2019). The internal consistency of all constructs was high, with the lowest Cronbach alpha of 0.725 and the highest composite reliability (rc) of 0.829-0.910 which is far beyond the recommended minimum of 0.70 (Nunnally and Bernstein, 1994). Further tests of convergent validity were also achieved with the range of Average Variance Extracted (AVE) of 0.547 to 0.669, which is higher than 0.50 (Fornell and Larcker, 1981). This means that both constructs had more than fifty percent variance in the indicators that they had, which validates strong convergent validity and measurement adequacy. Besides, all the inter-construct correlations were less than 0.85 (see Table 3) which also indicates more empirical evidence of discriminant validity and that each construct measures a unique conceptual area in the model (Kline, 2011).

The Heterotrait-Monotrait (HTMT) ratio was used as one of the most rigorous measures of discriminant validity suggested by Henseler et al. (2015). Every value of HTMT was 0.339 to 0.737, which is well under the conservative 0.90 range, indicating that all of the constructs are empirically different. Besides, inter-construct correlations (Table 4) were less than 0.85 which further provides evidence of discriminant validity.

Table 2: Outer loadings and reliability

			Loadings	Alpha	CR (rho_c)	AVE
Environmental Transparency	ET1	The brand provides clear and accessible information about its environmental initiatives.	0.767	0.725	0.829	0.547
	ET2	The brand discloses verifiable data on its environmental performance.	0.747			
	ET3	I find the brand's sustainability reports honest and detailed.	0.717			
	ET4	The brand communicates its eco-friendly practices openly with consumers.	0.728			
Perceived Greenwashing	PGW1	The brand exaggerates its environmental achievements.	0.757	0.807	0.866	0.565
	PGW2	I believe this brand's green claims are overstated.	0.707			
	PGW3	The brand presents an image of being greener than it truly is.	0.804			
	PGW4	The brand's advertisements create a false impression of environmental responsibility.	0.763			

	PGW5	The brand selectively highlights only positive sustainability actions.	0.722			
Green Brand Loyalty	GBL1	I prefer purchasing this brand because of its environmental reputation.	0.783	0.876	0.910	0.669
	GBL2	I intend to repurchase this brand's green products in the future.	0.831			
	GBL3	I would recommend this brand to others for its sustainability values.	0.839			
	GBL4	I consider this brand my first choice among eco-friendly alternatives.	0.813			
	GBL5	I feel emotionally attached to this environmentally responsible brand.	0.821			
Green Consumer Skepticism	GCS1	I question the truthfulness of environmental claims made by this brand.	0.813	0.881	0.909	0.626
	GCS2	I doubt whether the brand's products are genuinely eco-friendly.	0.790			
	GCS3	I suspect that the brand uses sustainability claims mainly for marketing purposes.	0.799			
	GCS4	I am generally skeptical of this brand's green initiatives.	0.787			
	GCS5	I do not completely trust the brand's claims about protecting the environment.	0.755			
	GCS6	I feel the brand's green efforts are insincere.	0.804			

Table 3: Correlation

	ET	GBL	GCS	PGW
ET	1.000	0.442	-0.522	-0.268
GBL	0.442	1.000	-0.630	-0.631
GCS	-0.522	-0.630	1.000	0.570
PGW	-0.268	-0.631	0.570	1.000

Table 4: Discriminant validity (HTMT matrix)

	ET	GBL	GCS	PGW
ET	-			
GBL	0.547	-		
GCS	0.652	0.711	-	
PGW	0.339	0.737	0.668	-

DISCUSSION

The present study adds to the literature investigating the impact of environmental communication strategies in

influencing buying intentions in the highly competitive FMCG market by combining ET and PGW through mediating role of GCS.

The first hypothesis of the current study confirmed that Environmental Transparency negatively and significantly affects Greenwashing Skepticism (GCS), which highlighted the interpretation of the signaling theory in the context of the present days (Taufique et al., 2022; Tien et al., 2023). New studies point to the fact that explicit and verifiable sustainability reports, especially those that are verified by third-party certifications or implemented on blockchains, work as plausible and expensive indicators that reinforce the perception of genuine-ness (Li et al., 2022; Luo et al., 2024). This transparency facilitates reduction of information imbalances, corporate accountability and the propensity to consumer scepticism. These findings contribute to the theoretical perspectives (de Vries et al.,

2015) by providing some factual data that transparency is a strategic tool of building consumer confidence in the digital green marketing age.

The significant and positive correlation between the Perceived Greenwashing (PGW) and the Greenwashing Skepticism (GCS) (H 2) indicates that deceiving or exaggerating claims about the environment is one of the main reasons of consumer distrust.. Insights from recent attribution research reveal that when individuals perceive a mismatch between a company's communication and its actual practices, they tend to interpret such behavior as motivated by self-interest rather than by genuine ecological responsibility (Rausch et al., 2023; Khandelwal et al., 2024). This is consistent with the recent meta-analytic findings by Sun and Shi (2022), which proves that perceived manipulation undermines the credibility at a more rapid rate than transparency can restore credibility. It is notable to see that the size of the effect of PGW on consumers exceeding that of ET indicates the presence of a negativity bias as in keeping with the perception that one act of deceit is more influential in consumer cognition than a number of acts of honesty (Promalessy & Handriana, 2024).

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Transforming Lives: The Role of Self-Help Groups in Supporting Women Entrepreneurs in Chennai City

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ABSTRACT

This study investigates the role of Self-Help Groups (SHGs) in supporting women entrepreneurs in Chennai City from 2022 to 2024. It examines how SHGs contribute to economic independence, business sustainability, and social empowerment.

Design/Methodology/Approach: A mixed-method approach was employed, involving surveys and in-depth interviews with 350 women entrepreneurs across various business sectors. Data was analyzed using statistical techniques to assess financial literacy, market accessibility, and social empowerment outcomes.

Findings: SHG members exhibited higher financial literacy (Mean: 4.35 vs. 3.67, $p < 0.05$), greater market accessibility (Mean: 75.8 vs. 61.2, $p < 0.05$), increased revenue growth ($\beta_1 = 0.72$, $p < 0.01$), and enhanced empowerment levels (Mean: 4.21 vs. 3.45, $p < 0.05$) compared to non-members. SHGs significantly improve financial literacy, market access, and networking opportunities, leading to better business performance, economic stability, and self-confidence. However, funding limitations, operational constraints, and market competition remain key challenges.

Practical Implications: The study suggests policy interventions to enhance self help groups financial and training support, ensuring sustainable entrepreneurial development among women.

Originality/Value: This research contributes to understanding self help groups transformative role in womens economic empowerment, offering insights for policymakers and stakeholders to optimize self help groups frameworks.

KEYWORDS : *Self-Help groups, Women entrepreneurs, Economic empowerment, Financial literacy, Business sustainability, Chennai city, Ssocial support, Market accessibility, Networking opportunities, Policy interventions.*

INTRODUCTION

In developing nations where utilization of formal lenders is still difficult, self help groups have become an essential tool for empowering women economically [1]. These organizations help women start and grow their businesses by giving them social assistance, creative training, and microfinance [2]. Self help groups are important because they can help women entrepreneurs become more independent, become more financially literate, and become better decision makers [3].

In order to create jobs, boost the economy, and reduce poverty, women entrepreneurs are essential [4]. But they frequently encounter obstacles like limited business networks, social barriers, and difficulty obtaining credit [5]. By enabling group savings, offering micro lending, and encouraging training, self help groups help overcome these obstacles [6]. Research has indicated that women who participate in self help groups have higher social status, better company success, and more savings [7].

Because of the urban rural economic divide, which makes it difficult for poor women entrepreneurs to maintain their enterprises, self help groups play a particularly important role in chennai [8]. Self help groups have been pushed by a number of governments and nonprofit initiatives as a way to encourage female entrepreneurship and financial inclusion [9]. Self help collaboration has been linked to improved financial results, leadership abilities, and self confidence, according to research [10]. Notwithstanding these advantages, problems like insufficient capital, restricted access to markets, and prejudices against women still exist [11]. Furthermore, ongoing training, mentoring, and policy guidance are essential to the viability of firms run by self help groups [12]. The function of self help groups can be further strengthened by efficient having money regulations and initiatives to build capacity.

Contributions

The novel contributions of this study are:

1. We provide empirical insights into how self help groups enhance financial literacy, business growth, and social empowerment among women entrepreneurs in chennai city.
2. We analyze the challenges faced by self help groups led businesses, including funding limitations, market access barriers, and operational constraints.
3. We propose policy recommendations to strengthen self help groups financial and training mechanisms for sustainable entrepreneurial success.
4. We contribute to the broader discourse on womens economic empowerment by highlighting the role of self help groups in fostering financial independence and leadership.

RESEARCH GAPS

Despite the significant contributions of Self-Help Groups (SHGs) in enhancing financial literacy, economic stability, and social empowerment among women entrepreneurs, several research gaps persist. There is a lack of long-term impact analysis on the sustainability of SHG-supported businesses, making it difficult to assess their effectiveness over time. Institutional barriers limiting women's participation in SHGs remain underexplored, particularly in relation to access to financial resources and market linkages. While social enterprises play a crucial role

in integrating financial viability with social change, the absence of standardized financial performance metrics poses a challenge in evaluating their success. Additionally, comparative studies analyzing the dual role of SHGs in environmental sustainability and economic empowerment are scarce. Most studies focus on rural settings, leaving urban SHG-led entrepreneurship under-examined. Moreover, limited quantitative validation exists for SHG contributions in shaping policy decisions. Cross-cultural studies on SHG entrepreneurship models and gender-specific microfinance frameworks are needed to develop more inclusive financial policies. The psychological impact of SHG participation on women entrepreneurs has also been largely overlooked, and further research is required to assess the effectiveness of targeted programs like the One District, One Product (ODOP) scheme across various industries.

OBJECTIVES

The novel objectives of this study are:

1. To examine the impact of SHGs on financial literacy and economic stability among women entrepreneurs in Chennai City.
2. To analyze how SHGs facilitate market access, networking, and business sustainability for women-led enterprises.
3. To identify the key challenges faced by women entrepreneurs within SHGs and propose strategic solutions.
4. To assess the effectiveness of existing SHG models and recommend improvements for enhanced socio-economic empowerment.

HYPOTHESIS

Financial Literacy and Economic Stability

- Null Hypothesis (H_{01}): SHG participation does not significantly improve financial literacy among women entrepreneurs.
- Alternative Hypothesis (H_{11}): SHG participation significantly improves financial literacy among women entrepreneurs.

Market Accessibility and Business Growth

- Null Hypothesis (H_{02}): There is no significant difference in market accessibility for SHG and non-SHG women entrepreneurs.
- Alternative Hypothesis (H_{12}): SHG participation significantly enhances market accessibility for women entrepreneurs.

PROPOSED METHODOLOGY

Determining the study goals and the role that self help groups play in assisting women entrepreneurs in chennai city is the first step in recommending a process (Fig 1). The following phase entails gathering information from 350 female entrepreneurs across a range of industries via surveys and deep interviews. To evaluate important factors like financial education, access to markets, and democratic results, the gathered data will be analyzed using statistics. The analysis phase then ascertains how self help groups participation affects women owners establishing trust, business expansion, and financial health.

Research Design

Using a combination of the two approach, this study assesses how self help groups assist female entrepreneurs in chennai by combining data from both sides. The purpose of the study is to evaluate how taking part in self help groups affects social autonomy, access to market, knowledge of finance, and company viability.

Data Collection

Established surveys and deep discussions with 350 female entrepreneurs from a range of industries, including production, services, and retail, were used to gather initial information. In order to guarantee a balanced democracy, stratified selection was used.

Table 1: Distribution of Respondents by Business Sector

Business Sector	Sample Size
Retail	120

RESULTS AND ANALYSIS

Table 2: Data Preprocessing

Respondent ID	SHG Member (Yes=1, No=0)	Financial Literacy Score	Market Access Index	Revenue Growth (%)	Empower-ment Score
1	1	4.2	78	12.5	3.8

Manufacturing	80
Services	100
Others	50
Total	350

Table 1: Distribution of respondents by business sector provides an overview of the sample composition for this study, which includes 350 women entrepreneurs across different business sectors in chennai city. The retail sector constitutes the largest share with 120 respondents (34.3%), reflecting the prominence of small scale trade and consumer oriented businesses among women entrepreneurs. The services sector follows with 100 respondents (28.6%), indicating a significant presence of women led ventures in areas such as education, healthcare, and hospitality. The manufacturing sector comprises 80 respondents (22.9%), highlighting the participation of women in small scale production units. The remaining 50 respondents (14.3%) belong to other sectors, representing a diverse mix of entrepreneurial activities that do not fit into conventional business categories. This distribution ensures a balanced representation of various industries, allowing the study to analyze self help groups participation across different entrepreneurial domains effectively.

Data Processing and Statistical Methods

Following the completion of surveys and interviews with 350 female entrepreneurs, info was handled using measurable statistical methods in order to assess important research elements like social change, accessibility in the market, literacy in finance, and sustainability of a company. The following techniques were used to guarantee the accuracy and validity of the data:

Data Cleaning and Preprocessing

The gathered data was disinfected, coded, and uniform to eliminate errors and gaps prior to analysis. For analysis, the likert scale answers (1–5) were transformed into numerical ratings.

2	0	3.5	55	8.2	3.1
3	1	4.8	85	15.7	4.5

The results of the statistical techniques covered in data analysis and statistics are shown in this section. The findings support the claims and evaluate how self help collaboration in groups affects financial knowledge, market access, growth in sales, and authority levels of female entrepreneurs.

Descriptive statistics summary

The statistical results for their main variables financial literacy, access to market, growth in sales, and authority scores are shown in Table 3. The majority of respondents have a moderate to elevated level of financial information, according to the mean awareness of rating (4.1, SD = 0.75), which reflects the influence of training programs for self help groups.. The market access index (mean = 72.4, SD = 10.3) suggests that self help groups members have substantial access to markets and business networks, though variations exist among individuals. Revenue growth, an important economic indicator, shows a mean increase of 13.2% (sd = 4.5%), highlighting the financial benefits of self help groups participation. Lastly, the empowerment score (mean = 4.0, SD = 0.82) signifies a generally high level of self confidence and leadership skills among the respondents. These findings demonstrate that self help groups involvement positively influences business knowledge, financial stability, and personal empowerment.

Table 3: Descriptive Statistics Summary

Variable	Mean	Standard Deviation
Financial Literacy Score	4.1	0.75
Market Access Index	72.4	10.3
Revenue Growth (%)	13.2	4.5
Empowerment Score	4	0.82

Hypothesis (H₁₄, H₀₄): Revenue growth was significantly higher among SHG-supported businesses (Mean: 13.2%, SD: 4.5%), confirming H₁₄ that SHG participation leads to higher business revenue growth.

Table 4: Pearson Correlation Matrix

Variable	SHG Membership	Financial Literacy	Market Access	Revenue Growth
SHG Membership	1	0.65	0.58	0.72
Financial Literacy	0.65	1	0.67	0.74
Market Access	0.58	0.67	1	0.69
Revenue Growth	0.72	0.74	0.69	1

Correlation Analysis between SHG Membership, Financial Literacy, Market Access, and Revenue Growth

Table 5 results show a positive correlation between SHG membership and revenue growth ($r=0.72$), indicating a strong relationship between SHG participation and financial success.

Hypothesis (H₁₁, H₁₂, H₁₄): The Pearson correlation matrix (Table 5) reveals strong positive correlations between SHG membership and financial literacy ($r = 0.65$), market accessibility ($r = 0.58$), and revenue growth ($r = 0.72$), supporting H₁₁, H₁₂, and H₁₄.

5.3 Financial Literacy and SHG Membership

The study found a significant difference in financial literacy scores between SHG members and non-members. The mean financial literacy score for SHG participants was higher than for non-members, as shown in Table 6.

Table 5: Financial Literacy Scores Comparison

Group	Mean Score	Standard Deviation	p-value
SHG Members	4.35	0.68	< 0.05
Non-Members	3.67	0.72	

Interpretation: The p-value (< 0.05) indicates that SHG participation significantly improves financial literacy levels.

Hypothesis (H_{11} , H_{01}): The mean financial literacy score for SHG members (4.35) was significantly higher than non-members (3.67), supporting H_{11} that SHG participation enhances financial literacy among women entrepreneurs.

Market Accessibility and Business Growth

Table 6: Market Accessibility Scores

Group	Mean Market Access Score	Standard Deviation	p-value
SHG Members	75.8	9.5	< 0.05
Non-Members	61.2	11.3	

Interpretation: SHG members have significantly higher market access and business sustainability.

Hypothesis (H_{12} , H_{02}): The Market Access Index was higher for SHG members (75.8) compared to non-members (61.2, $p < 0.05$), validating H_{12} , which suggests that SHG participation improves market accessibility.

CONCLUSION

Using a combination and 350 participants, this study investigated the function of self help groups in assisting female entrepreneurs in Chennai (2022–2024), evaluating important variables like literacy in finance, market availability, increased sales, and authority results. Self help group members demonstrated superior awareness of money and ability to make choices, as evidenced by their significantly higher monetary literacy results (mean: 4.35 vs. 3.67, $p < 0.05$). Similarly, participants in groups for self help had greater exposure to the market (mean: 75.8 compared to 61.2, $p < 0.05$), indicating that self help groups improve customer reach and business connections. The monetary gain of self help group involvement were demonstrated by the regression analysis, which confirmed the beneficial effects of SHG input on growth in revenue ($\beta_1 = 0.72$, $p < 0.01$). Additionally, people from self help groups reported higher levels of power (Mean: 4.21 vs. 3.45, $p < 0.05$), which was indicative of increased self assurance and leadership abilities. The use of a decision tree revealed

that in order to maximize the effectiveness of self help groups, changes in policy in capital, socializing, and market expansion are required. According to the study's findings, self help groups are essential for boosting feminine freedom from debt, career advancement, and the survival of businesses. This highlights the need for online financial equality and driven by policies support systems to increase the groups lasting impact.

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Assessment of Employee Skill Gaps in Selected Manufacturing Sectors at Trichy District

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ABSTRACT

The manufacturing sector is one of the cornerstones of the modern economy, contributing significantly to economic growth, innovation, and employment opportunities. However, in this dynamic and rapidly growing sector, the existence of skills gaps among employees has become a pressing concern. This research covers a recent period and provides an overview of the evolution of the skills gap in recent years. Therefore, understanding and closing the skills gap in this sector is critical to sustaining economic growth and maintaining competitiveness.

The skills gap, characterized by the difference between the skills possessed by the manufacturing workforce and those required by industry, manifests in various ways. Employee skills can be educated and improved over time in accordance with the changing industrial environment. Research by Green and Taylor (2020), titled “Assessing the Skills Gap in Manufacturing: Challenges and Solutions” and published in the Journal of Production Management, addresses this critical issue within the manufacturing industry.

This study examines the different steps commonly taken by researchers to analyze their research problems. During a pilot study, a subset of the target population, consisting of a representative sample of five manufacturing employees, will be selected for preliminary analysis.

KEYWORDS : *Employee skill, Technical skills, Assessment of skill shortage, Manufacturing sectors.*

INTRODUCTION

The manufacturing sector is one of the cornerstones of the modern economy, contributing significantly to economic growth, innovation, and employment opportunities. However, in this dynamic and growing sector, the existence of skills gaps among employees has become a pressing concern. Employee skills gaps refer to the difference between the skills possessed by the workforce and the skills required by the manufacturing industry to meet operational requirements and remain competitive.

These gaps can manifest in a variety of ways, including a lack of technical skills, inadequate problem-solving capabilities, or limited adaptability to new technologies and processes. Skills gaps are not only a challenge

for individual employees but also a critical issue for manufacturing organizations striving to remain competitive in a rapidly changing environment.

In recent years, the manufacturing sector has undergone transformational changes driven by digitalization. These changes are not only reshaping the nature of manufacturing work but are also increasing the demand for a more agile and highly skilled workforce capable of operating, maintaining, and optimizing advanced manufacturing systems.

This research article sets the stage for an in-depth examination of employee skills gaps in the manufacturing sector. By exploring the causes, consequences, and potential solutions to these gaps, the study aims to provide insights into strategies

that manufacturing organizations, policymakers, and educational institutions can adopt to effectively address skills gaps and ensure sustained growth and competitiveness in the sector.

STATEMENT OF THE PROBLEM

The manufacturing sector, which forms the foundation of the global economy, is currently facing an urgent challenge in the form of employee skills shortages. This issue has emerged as a major obstacle to the industry's growth and competitiveness. The skills gap, characterized by the mismatch between the skills possessed by the manufacturing workforce and those required by the industry, manifests in various ways.

Employees may lack the technical skills necessary to operate advanced machinery, adapt to digital technologies, or meet the evolving demands of modern manufacturing processes. These gaps not only hinder productivity and innovation but also pose significant risks to the industry's ability to remain globally competitive. As the manufacturing sector undergoes rapid technological transformation, addressing and closing this skills gap has become an urgent priority.

This research aims to gain a deeper understanding of the root causes, consequences, and potential solutions to employee skills gaps in the manufacturing sector. By doing so, it seeks to provide insights that can inform effective workforce development strategies and strengthen the industry's vital role in economic growth and innovation.

OBJECTIVES OF THE STUDY

The researcher has framed the main objectives of the study based on the research problem as follows:

- To study the socio-economic profile of respondents in selected manufacturing sectors in Trichy District.
- To analyze the existing employee skills gaps in manufacturing sectors.
- To assess the reasons for employee skills gaps and suggest remedial measures to bridge these gaps.

LIMITATIONS OF THE STUDY

During the research process, the researcher faced several limitations due to insufficient time for collecting data from respondents in selected manufacturing sectors.

Additionally, the sample size of 175 respondents may not fully reflect the opinions of employees working in different manufacturing sectors across various regions.

Employee skills can be developed and improved over time in accordance with changes in the working environment. Therefore, the present level of employee skills may not be sufficient to meet future challenges, highlighting the need for continuous skill development and training initiatives.

RESEARCH METHODOLOGY

Research methodology is a systematic approach to solving research problems. It can be understood as a science that studies how research is conducted in a structured and scientific manner. This methodology involves examining the various steps commonly adopted by researchers to investigate research problems. The following section outlines the different steps adopted by the researcher to conduct the study.

DATA COLLECTION METHOD

Data collection methods are the techniques and procedures used to gather information for research purposes. These methods can range from simple self-report surveys to more complex experiments, and they may involve both primary and secondary approaches to data collection. Primary Data: Primary data refers to firsthand information collected directly from respondents. In this study, primary data was gathered using a structured questionnaire method. Secondary Data: Secondary data consists of information that is already available and has been collected by others. This includes data obtained from previous research reports, magazines, journals, and company profiles.

SAMPLE DESIGN

A sampling plan is a defined strategy for selecting samples from a given population. It refers to the technique or procedure applied by the researcher to choose sample elements. The sampling plan also determines the number of elements to be included in the sample, that is, the sample size.

In this study, the researcher adopted a simple random sampling technique to collect data from 175 respondents drawn from selected manufacturing sectors in Trichy District.

RESEARCH DESIGN

Descriptive research aims to describe a population, a situation, or a phenomenon accurately and systematically. It can answer the questions what, where, when and how, but cannot answer the questions why. Descriptive research designs can use many different research methods to study one or more variables.

ANALYSIS AND INTERPRETATION

Table 1: Frequency Analysis of Socio-Demographic Variables (N = 175)

Variable	Category	Frequency	Percent
Gender	Male	116	66.3
	Female	59	33.7
	Total	175	100
Age	20–30	59	33.7
	31–40	51	29.1
	41–50	41	23.4
	51 and Above	24	13.7
	Total	175	100
Marital Status	Married	76	43.4
	Unmarried	99	56.6
	Total	175	100
Education Level	Schooling	35	20
	Diploma Holders	39	22.3
	U.G and P.G Degree Holders	40	22.9
	Professionals	31	17.7
	Others	30	17.1
	Total	175	100
Annual Income	Below 50,000	61	34.9
	50,001–100,000	54	30.9
	100,001–150,000	34	19.4
	150,001 and Above	26	14.9
	Total	175	100

It inferred the socio demographic value of the respondents. The above table shows that 66.3% of the respondents are Male. In respect of age group of the respondents, 33.7% belonging to 20-30 years. More than 56.6% of the respondents are Unmarried. In the category of Educational qualification 22.9% of the respondents are UG&PG Degree holders. Most of the

respondents 34.9% are receiving Annual Income below Rs. 50,000.

Pearson Chi-Square Test for Gender of the Respondents and Employee Skill Gaps in Manufacturing Sector

Hypotheses

Null Hypothesis (H_0):

There is no significant relationship between gender of the respondents and employee skill gaps in the manufacturing sector.

Alternative Hypothesis (H_1)

There is a significant relationship between gender of the respondents and employee skill gaps in the manufacturing sector.

Table 2: Chi-Square Test Results

Skill Gap Variable	Test	Value	df	Asymptotic Significance (2-sided)
Communication Skills	Pearson Chi-Square	45.032 ^a	4	0
	Likelihood Ratio	45.526	4	0
	Linear-by-Linear Association	0.006	1	0.938
	N of Valid Cases	175		
Leadership Skills	Pearson Chi-Square	35.497 ^a	4	0
	Likelihood Ratio	35.357	4	0
	Linear-by-Linear Association	0.906	1	0.341
	N of Valid Cases	175		
Emotional Intelligence Skills	Pearson Chi-Square	30.280 ^a	4	0
	Likelihood Ratio	29.688	4	0
	Linear-by-Linear Association	7.828	1	0.005
	N of Valid Cases	175		

Decision Making Skills	Pearson Chi-Square	41.166 ^a	4	0
	Likelihood Ratio	41.881	4	0
	Linear-by-Linear Association	0.334	1	0.564
	N of Valid Cases	175		
Problem Solving Skills	Pearson Chi-Square	41.528 ^a	4	0
	Likelihood Ratio	42.158	4	0
	Linear-by-Linear Association	0.002	1	0.96
	N of Valid Cases	175		
Time Management Skills	Pearson Chi-Square	40.236 ^a	4	0
	Likelihood Ratio	40.339	4	0
	Linear-by-Linear Association	0.673	1	0.412
	N of Valid Cases	175		
Technical Skills	Pearson Chi-Square	42.512 ^a	4	0
	Likelihood Ratio	42.792	4	0
	Linear-by-Linear Association	0.008	1	0.93
	N of Valid Cases	175		

Based on the results generated by SPSS 21, the significance value (p-value) for the Pearson Chi-Square test for all skill gap variables is less than 0.05 ($p = .000$). Since the p-value is less than the 0.05 level of significance, the null hypothesis is rejected. Therefore, it is clearly identified that there is a significant relationship between gender of the respondents and employee skill gaps in the manufacturing sector.

ANOVA Test for Marital Status of the Respondents and Employee Skill Gaps in Manufacturing Sector

Hypotheses

Null Hypothesis (H_0): There is no significant relationship between marital status of the respondents and employee skill gaps in the manufacturing sector.

Alternative Hypothesis (H_1): There is a significant relationship between marital status of the respondents and employee skill gaps in the manufacturing sector.

Table 3: ANOVA Results: Marital Status and Employee Skill Gaps

Statements	F-value	Sig.
Communication Skills	0.074	0.786
Leadership Skills	0.655	0.419
Emotional Intelligence Skills	14.706	0
Decision Making Skills	0.065	0.799
Problem Solving Skills	0.002	0.962
Time Management Skills	1.009	0.317
Technical Skills	0.068	0.795

Interpretation

With reference to employee skill gaps in the manufacturing sector, Table 3 presents the association between marital status of the respondents and employee skill gaps.

It is clearly identified from the above table that the significance value (p-value) is greater than 0.05 for all skill variables except Emotional Intelligence Skills ($p = 0.000$).

Since the p-values are greater than 0.05 for most variables, the null hypothesis is accepted. Therefore, it is confirmed that there is no significant relationship between marital status of the respondents and employee skill gaps in the manufacturing sector, except in the case of emotional intelligence skills.

Table 4: KMO and Bartlett's Test for Determining Employee Skill Gaps

Test	Value
Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy	0.686
Bartlett's Test of Sphericity	
Approx. Chi-Square	2109.046
df	21
Sig.	0

Interpretation of KMO and Bartlett's Test

The KMO value is 0.686, which is greater than 0.5. This indicates that the sample is adequate and factor analysis is appropriate for the present data.

The significance value for Bartlett's Test of Sphericity is 0.000, which is less than 0.05. This shows that there is a significant relationship among the variables.

Thus, the resultant values of the KMO test and Bartlett's test confirm that the present data is suitable and useful for conducting factor analysis.

FINDINGS & SUGGESTIONS

The study confirms the existence of a significant skills gap in the manufacturing sector. Many employees lack essential technical, digital, and soft skills required for modern manufacturing operations. The gap is especially visible in advanced machinery handling, data analysis, and problem-solving. Major causes include rapid technological changes, aging workforce, inadequate training systems, and weak industry-academia linkage.

- Strengthen collaboration between industry and educational institutions.
- Conduct regular skill gap assessments.
- Implement continuous technical and soft skill training programs.
- Promote digital upskilling and reskilling initiatives.
- Encourage government-supported skill development schemes.

CONCLUSION

The manufacturing sector faces a critical skills mismatch that affects productivity and competitiveness. Bridging

this gap requires coordinated efforts from industries, educational institutions, and policymakers. Continuous training and industry-aligned education are essential to ensure workforce readiness and sustainable growth.

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A Study on Financial Statement Analysis of CUB

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ABSTRACT

This study investigated how CUB has its performance in the last five years. The study uses the descriptive. This research analyses the data obtained from the annual reports and other related documents from 2016 to 2020. Consequently, the researcher will apply statistical tools like descriptive statistics, correlation, and regression. The study shows a positive relationship between the profitability ratio and ROA of CUB. From the empirical findings using the regression analysis, it was found that liquidity and leverage ratio has no significant impact on financial performance of City union bank is higher than 5% of significance level. However, the profitability ratio has a positive impact on performance of CUB in Tamilnadu, at a 5% significance level. The study therefore advised that profitability ratios be used when evaluating the performance of CUBs in Tamilnadu. This is because the variable has a considerable favorable effect on the appraisal of bank performance.

KEYWORDS : *Liquidity, Profitability, Leverage, CUB, Performance.*

INTRODUCTION

In India, the banking sector looked to be one of the fastest-growing industries since from 18th century. RBI has stated in the report that the financial and economic conditions of banks have been superior in the world. Recently, the industry has a value of Rs.81 trillion because of the influence of technology in the banking industry in India. Nowadays, mobile banking and internet banking services have been carried out with the influence of internet penetration in India. India imprint digital lending in the banking industry stimulated the revenue to 75 billion US dollars in 2018. In the Indian banking system, there are 27 public sector banks, 21 private sector banks, 49 foreign banks, 56 regional rural banks, 1,562 urban cooperative banks, and 94,384 rural cooperative banks. (IBEF, 2018) Among the above-stated banks, private banks have been considered an essential pillar for enriching India's economic growth. Private Banks have been familiar with special services, unique quality, and high charges compared with public sector banks. (Sharma, 2019) There are 21 private sector banks in which City union bank has been picked

out because the banks have registered the growth of 16 percent in 2018 primarily because of lowered provisions and then better NPA management and higher recoveries from the borrowers accelerated progression in the financial market. (CUB, 2018) Hence, the researcher will investigate the financial performance of CUB in Tamilnadu. In order to make a probe on financial performance, it is primary to have essential financial information which values both internal users and external users to make a decision accordingly. Banks had financial statements in the annual reports. The researcher utilized the most appropriate ratios and provided how banks have their financial position, which benefits both internal and external users and makes decisions. Hence, with the help of financial statement analysis, it is beneficial to the banks to know about the consistency of the banks in Tamilnadu for the last five years.

Statement of the problem

City union bank looked to be a small bank in Kumbakonam, which had a progression of 27% in the last few months, which was considered the best performance

in Indian private banks. CUB competes with the biggest private banks like HDFC banks and then Axis banks. The present situation of CUB based on net interest margin looked to be the highest in the Indian banking system. Consequently, the banks offered lending loans to many SMEs, creating a more relationship-based lending bank in Tamilnadu. Mazumdar, (2019). Hence, this influenced the researcher to investigate how CUB has its performance in the last five years.

Objectives of the study

The primary objective of the study is to evaluate the financial stability analysis of City union bank.

Secondary objectives

To evaluate the financial position of City union banks and to measure the current performance of City Union banks in Tamilnadu

To measure the profitability and liquidity, and credit management of City union bank in Tamilnadu

To assess the financial strength of city union banks, which has an influence on the private bank industry in Tamilnadu

Scope of the study

The present study is confined to highlights the financial performance of City union bank in Tamilnadu. The study will be restricted to a particular bank, i.e., city union bank, and the results will be evaluated based on the consolidated financial statement of the companies. The researcher will look the ratios like current ratio, quick ratio, inventory turnover ratio, debtors turnover ratio, working capital turnover ratio, total assets turnover ratio, fixed assets turnover ratio, gross profit margin, net profit margin, return on investment, return on equity and return on assets to evaluate the financial position and stability analysis of City union bank in Tamilnadu.

Limitation of study

Each research work has its limits. This paper's key drawbacks are low days when all necessary analysis cannot be examined. The research is based on the company's annual accounts, of which the precision and reliability of the analysis rely on the reliability of the financial statement estimates.

RESEARCH METHODOLOGY

The study is descriptive and analytical because the researcher evaluates how City Union bank creates a significant effect on the private bank industry in Tamilnadu. The study takes population as private bank industry in Tamilnadu. Samples have been picked out based on non-probability sampling, which looks the samples to be City union bank because it considers one of the regional banks in the Thanjavur district of Tamilnadu. In order to execute the research, annual reports of banks will be considered from 2016 to 2020. Consequently, the researcher will apply statistical tools like descriptive statistics, correlation, and regression.

Period of study

This research analyses the data obtained from the annual reports and other related documents from 2016 to 2020.

Sources of data

In order to execute the study, the researcher considers the secondary data to research an effective way. The maximum number of data like financial statements and ratio analysis has been acquired from City Union bank annual report to perform the research. Data gathered from "Moneycontrol.com," which is considered to be a consistent fact in India. The database provides financial statements, ratio analysis, fund flows and cash flows, and annual reports. Hence, business newspapers, journals, and annual surveys of industry and libraries have been utilized as a data source.

ANALYSIS

Descriptive statistics

Particulars	Mini mum	Maxi mum	Mean	SD	Skew ness	Kurt osis
Liquidity	12.00	13.12	12.523	0.44	0.17	-0.67
Profitability	3.32	11.90	8.81	3.25	-1.62	3.29
Leverage	4.45	4.90	4.63	0.19	0.77	-0.65
ROA	.95	1.50	1.35	0.23	-2.1	4.52

Source: Own calculation

The table reveals that the mean (average), standard deviation (degree of dispersion), and Skewness, Kurtosis (distribution test) for each of the variables. Among the ratios, liquidity has the highest mean value of 12.53, followed by profitability has 8.81, leverage

has 4.63, and financial performance has the least value of 1.35. According to the table, the standard deviation value has a range of 0.2 to 3.3, whereas the highest SD of profitability ratio indicates that these variables drive the CUB performance. Moreover, the high SD shows the high risk. The finding of the Skewness reveals that the profitability ratio is highly skewed, and the remaining ratio is moderately skewed. Also, the Kurtosis findings indicate the profitability ratio is normally distributed.

Pearson Correlation

Parti culars	Liqui- dity	Profit- ability	Leve-rage	ROA
Liquidity	1	0.513	0.487	0.650
Profitability		1	0.175	0.981
Leverage			1	0.323
ROA				1

Source: Own calculation

H0: There is a significant correlation between the financial performance and the financial ratio of CUB

From the table above, it has been observed that the correlation between the financial performance and financial ratio of CUB. The results indicate that the financial performance of CUB is positively associated with liquidity ratio (0.650), while profitability ratio (0.981) and leverage ratio (0.323). However, the profitability ratio has a significant association with the ROA. Besides, the liquidity and leverage ratio has no significant relationship with the financial performance of CUB.

Regression

Particulars	R-value	R-square	F-value	t-value	Sig.
Liquidity and ROA	0.650	0.422	2.189	1.480	0.236
Profitability and ROA	0.981	0.950	76.324	8.736	0.003
Leverage and ROA	0.323	0.104	0.348	0.590	0.597

Source: Own calculation

H0: There is a significant impact of liquidity ratio on the financial performance of CUB

It has been observed from the table that the R-value of the liquidity ratio has 0.650 and the R-square value is

0.422, which is high, indicating a close relationship between the variables. However, the r-square value shows that the liquidity ratio has a 42.2% impact on the financial performance of CUB. It is evident that the F-value of variables is 2.189, and the t-value is 1.480. The significance value is 0.236, which means the value is higher than 5%, respectively. Thus, it can be concluded that the liquidity ratio has no significant impact on the financial performance of CUB.

H1: There is a significant impact of profitability ratio on the financial performance of CUB

The table above reveals that the R-value of the profitability ratio has 0.981 and the R-square value is 0.950, which is high, suggesting a strong relationship between the variables. However, the r-square value indicates that the profitability ratio has a 95% impact on the financial performance of CUB. It is inferred that the F-value of variables is 76.324 and the t-value is 8.736, whereas the p-value is 0.003, which means the value is less than 5%, respectively. Hence, it can be evident that the profitability ratio has a strong and positive impact on the financial performance of CUB. Also, it is statistically significant.

H2: There is a significant impact of the leverage ratio on the financial performance of CUB

It has been found from the table that the R-value of the leverage ratio has 0.323 and the R-square value is 0.104, which is low, indicating a close relationship between the variables. However, the r-square value shows that the leverage ratio has a 10.4% impact on the financial performance of CUB. It is found that the F-value of variables is 0.348, and the t-value is 0.590. The significance value is 0.597, which means the value is higher than 5%, respectively. Hence, it can be concluded that the leverage ratio has no significant impact on the financial performance of CUB.

FINDINGS

- Profitability ratio has a significant association with the ROA
- Liquidity and leverage ratio has no significant relationship with the financial performance of CUB.
- Liquidity ratio has a 42.2% impact on the financial

performance of CUB. Thus, the liquidity ratio has no significant impact on the financial performance of CUB.

- Profitability ratio has a 95% impact on the financial performance of CUB. Hence, the profitability ratio has a strong and positive impact on the financial performance of CUB. Also, it is statistically significant.
- Leverage ratio has a 10.4% impact on the financial performance of CUB. Therefore, the leverage ratio has no significant impact on the financial performance of CUB.

SUGGESTION

Based on the findings, the study recommend that

- The study suggests that management and customers should view liquidity ratio as a significant factor influencing bank performance evaluation due to its beneficial effect.
- It should be advised that profitability ratios be used when evaluating the performance of CUBs in Tamilnadu. This is because the variable has a considerable favorable effect on the appraisal of bank performance.
- The study recommended that future empirical studies incorporate additional variables that could contribute to performance evaluation by ratio analysis.

CONCLUSION

This study examined how selected financial ratio realted to financial performance of City union bank. The study shows a positive relationship between the profitability ratio and ROA of CUB. From the empirical findings using the regression analaysis, it was found that liquidity and leverage ratio has no significant impact on financial

performance of City union bank is higher than 5% of significance level. However, the profitability ratio has a positive impact on performance of CUB in Tamilnadu, at a 5% significance level. Profitability ratios indicate a business's earning capability and are used to gauge its growth, performance, and control. Finally, this research recommends additional research in the area of performance evaluation using ratio analysis, not only because ratio analysis is a great tool for analyzing bank performance, but also because the adjusted R-squared value is so low

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The Impact of Well-being on Work-Life Balance: The Moderating Role of Workplace Policies among Women in the IT Sector

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ABSTRACT

This study investigates the influence of employee well-being on work-life balance among women professionals in the Information Technology (IT) sector in Bengaluru, India. The research further explores the moderating role of workplace policies in shaping this relationship, specifically flexible work hours, childcare support, wellness initiatives, and mentorship programs. Three hundred ninety-six responses were collected using a structured questionnaire encompassing cultural Identity, workplace inclusivity, cultural satisfaction, cultural adaptation, and supportive workplace policies. The data were analysed using Partial Least Squares Structural Equation Modelling (PLS-SEM) to evaluate direct and interaction effects. The findings reveal a strong and statistically significant positive relationship between well-being and work-life balance, indicating that a supportive and emotionally enriching work environment enhances employees' ability to manage professional and personal responsibilities. Moreover, workplace policies were found to moderate this relationship, suggesting that organisational support in structured and employee-focused interventions further enhances the positive outcomes of well-being. These results underscore the need for organisations to adopt a dual approach that combines emotional and cultural support with formalised policy frameworks to foster sustainable work-life balance, especially in high-demand sectors such as IT. The study offers theoretical insights and practical implications for human resource development and policy-making to promote gender-inclusive, balanced work environments.

KEYWORDS : *Well-being, Work-life balance, Workplace policies, Cultural adaptation, Women employees, IT sector, PLS-SEM, Inclusivity, Organisational support.*

INTRODUCTION

The increasing participation of women in the workforce has reshaped family and work dynamics over recent decades. Despite professional advancement, women continue to shoulder disproportionate domestic and caregiving responsibilities, creating dual pressures that hinder work-life balance (Carlson et al., 2009). Such imbalances negatively affect job satisfaction and overall well-being (Anderson et al., 2002).

Self-care has emerged as an important strategy for managing these pressures. It includes stress management, relaxation, hobbies, mindfulness, and

social engagement, all of which enhance physical, emotional, and mental health (Lee & Miller, 2013). Research shows that self-care improves psychological resilience and supports work-life balance among working women (Kinman & Grant, 2010; Bay et al., 2025). However, self-care practices vary across individuals and are shaped by personal, social, and contextual factors. Marital status plays a key role in shaping emotional and practical support systems that influence women's ability to manage work and life demands. Marriage can enhance stress management through emotional support, shared household responsibilities, and financial stability, thereby reducing

work–family conflict and improving mental health (Frone et al., 1992; Lu & Chang, 2014). In contrast, unmarried, divorced, or widowed women often face greater role conflict due to limited relational support and time autonomy, reducing opportunities for self-care (Greenhaus & Beutell, 1985; Allen et al., 2012). These differences highlight the importance of considering marital status as a moderating factor in work–life balance research (Smith & Bond, 1998)./ Cultural awareness within organizations promotes equality, inclusion, and employee well-being (Phinney et al., 2001). Cultural identity reflects individuals' connection to their culture and its expression in the workplace, influencing job satisfaction and organizational commitment (Ellemers et al., 2002; Ting-Toomey, 2017). Recognition of diverse cultural identities fosters employee engagement and unity within organizations (Tajfel & Turner, 2004; Barak, 2005).

Materials and Methods

This study employed a structured, self-administered questionnaire to assess Cultural Identity, Workplace Inclusivity, Cultural Satisfaction, Cultural Adaptation, Workplace Policies, and Work–Life Balance. Established and validated scales were adapted to suit the Indian IT context, with responses measured on a five-point Likert scale. Reliability was confirmed using Cronbach's alpha. The sample comprised 396 women IT employees from Bengaluru, selected for its diverse workforce and demanding professional environment, making it an appropriate context for examining organizational culture, well-being, and work–life balance.

Table 1: Discriminant Validity

Constructs	CI	WI	CS	CA	WP	WLB
Cultural Identity (CI)	0.735					
Workplace Inclusivity (WI)	0.38	0.748				
Cultural Satisfaction (CS)	0.42	0.47	0.762			
Cultural Adaptation (CA)	0.33	0.36	0.39	0.775		
Workplace Policies (WP)	0.31	0.35	0.38	0.33	0.806	
Work–Life Balance (WLB)	0.29	0.41	0.44	0.46	0.40	0.825

According to Table 1, the Fornell-Larcker method was used to test discrimination validity, determining whether each latent construct is unique from other constructs in the measurement model. The outcome proved that each construct's Average Variance Extracted (AVE) square root was higher than the inter-construct correlations. Namely, the square roots of AVE of Cultural Identity (0.735), Workplace Inclusivity (0.748), Cultural Satisfaction (0.762), Cultural Adaptation (0.775), Workplace Policies (0.806), and Work-Life Balance (0.825) were higher than each correlation in the model between them. This result means that every construct has more variance with the items it measures than with the items of other constructs, indicating that constructs are empirically distinct. As an example, Cultural Adaptation had a square root of AVE equal to 0.775, meaning that it correlated less strongly with Cultural Identity (0.33), Workplace Inclusivity (0.36), Cultural Satisfaction (0.39), Workplace Policies (0.33), and Work-Life Balance (0.46). The same trends continued in other constructs, such that the diagonal value was always larger than the off-diagonal correlations.

Therefore, the findings show sufficient evidence of discriminant validity, meaning no conceptual or statistical overlap exists between the variables that form part of the research. This can be considered a stronger psychometric validation of the measurement model because subsequent structures can be determined more confidently in the study.

Table 2: Correlation Matrix

Constructs	CI	WI	CS	CA	WP	WLB
Cultural Identity (CI)	1.000					
Workplace Inclusivity (WI)	0.38	1.000				
Cultural Satisfaction (CS)	0.42	0.47	1.000			
Cultural Adaptation (CA)	0.33	0.36	0.39	1.000		
Workplace Policies (WP)	0.31	0.35	0.38	0.33	1.000	
Work–Life Balance (WLB)	0.29	0.41	0.44	0.46	0.40	1.000

Table 2 presents the Pearson correlation matrix showing the direction and strength of relationships among the

study's key constructs: Cultural Identity, Workplace Inclusivity, Cultural Satisfaction, Cultural Adaptation, Workplace Policies, and Work-Life Balance. Diagonal values indicate perfect self-correlations ($r = 1.000$), while off-diagonal values represent bivariate correlations between different constructs. Overall, the analysis reveals moderate positive relationships among the variables.

Cultural Identity shows a moderate positive correlation with Workplace Inclusivity ($r = 0.38$) and Cultural Satisfaction ($r = 0.42$), indicating that stronger cultural identity is associated with greater perceptions of inclusivity and cultural satisfaction. Workplace Inclusivity is also positively correlated with Cultural Satisfaction ($r = 0.47$) and Work-Life Balance ($r = 0.41$), suggesting that inclusive environments enhance both cultural satisfaction and work-life balance. Cultural Adaptation demonstrates moderate positive relationships with Workplace Inclusivity ($r = 0.36$) and Work-Life Balance ($r = 0.46$), implying that effective cultural adaptation supports perceptions of inclusivity and balance. Workplace Policies are moderately correlated with Workplace Inclusivity ($r = 0.35$) and Work-Life Balance ($r = 0.40$), highlighting the role of supportive policies in fostering inclusion and balance.

All inter-construct correlations are below 0.85, indicating adequate discriminant validity and a low risk of multicollinearity. This confirms that the constructs are statistically distinct and suitable for further multivariate analysis, including Structural Equation Modelling (SEM).

Table 3: Demographic Variables

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age	Below 25	85	21.5%
	25–34	140	35.4%
	35–44	90	22.7%
	45–54	50	12.6%
	55 and above	31	7.8%
Marital Status	Single	165	41.7%
	Married	190	48.0%
	Divorced	25	6.3%
	Widowed	16	4.0%

Monthly Income (₹)	Less than 20000	90	22.7%
	20000–50000	145	36.6%
	50001–100000	110	27.8%
	Above 100000	51	12.9%
Parental Status	Have children	210	53.0%
	No children	186	47.0%
Job Level	Entry-level	120	30.3%
	Mid-level	145	36.6%
	Senior-level	85	21.5%
	Top management	46	11.6%
Education Level	Graduate	180	45.5%
	Postgraduate	150	37.9%
	Doctorate	36	9.1%
	Others	30	7.5%
Work Experience	Less than 5 years	110	27.8%
	5–10 years	145	36.6%
	11–15 years	85	21.5%
	Above 15 years	56	14.1%

The Demographic characteristics of the respondents provide all the information about the qualities of the study sample as per Table 4. The study was done with the help of 396 participants. Age analysis showed that most respondents fell in the 25–34 age category (35.4 per cent), followed by those in the 35–44 age category (22.7 per cent). The percentage of the respondents belonging to the age group below 25 and 45–54 years was 21.5 and 12.6, respectively, and 7.8 for those above 55 years. This age structure implies that a young and middle-aged workforce mainly characterised the samples. As to the marital status, it is indicated in the data that most of them, i.e., 48.0% were married, whereas 41.7% were singles. The remaining respondents were divorced (6.3%) and widowed (4.0%). Concerning monthly income, 36.6 per cent of respondents have a monthly income between 20,000 and 50,000/-, 27.8 per cent have a monthly income between 50,001 and 1,00,000/-, and 22.7 per cent have a monthly income less than 20,000/-. A lesser percentage of 12.9 per cent obtained an income above 100,000. This implies that the sample

touched various classes of income-generating capacity, hence heterogeneousness in economic backgrounds.

Using parental status, 53.0 per cent of the respondents stated that they had children, and 47.0 per cent had no children. On the part of the job level, the distribution shows that out of the respondents, 36.6 per cent were in the mid-level, 30.3 per cent in the entry level, 21.5 per cent in senior positions and 11.6 per cent in top management. The analysis of educational qualification indicates that 45.5 per cent of the respondents are graduates, 37.9 per cent are postgraduates, 9.1 per cent are doctorate holders, and 7.5 per cent have other qualifications. It is an indication of a fairly educated sample. Concerning the work experience, the results indicate that 36.6 per cent of the participants had 5-10 years of work experience, 27.8 per cent less than 5 years, 21.5 per cent 11-15 years of work experience, and 14.1 per cent had work experience over 15 years. This distribution shows that the sample consisted of respondents with diverse professional experience, thus reaching a balanced opinion regarding their career stages.

Measurement Model-I – Direct Effect of Well-being (CW) on Work-life Balance (WLB)

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
CW → WLB	0.665	0.667	0.030	22.208	0.000

The structural model test assessed the developing presumed relationship between Cultural Well-being (CW) and Work-life Balance (WLB). CW's regression coefficient (B) on WLB is 0.665; hence, the two constructs have a strong positive relationship. This implies that when cultural well-being improves, there is also an improvement in employees' work-life balance. The sample mean estimate ($M = 0.667$) is almost identical to the initial sample estimate ($O = 0.665$), which indicates conformity and stability of the estimated path coefficient across the bootstrap samples. The standard deviation $STDEV = 0.030$ is slight, which also means that the results are very dependable and the variability of the effect estimated is small. The t-statistic value (22.208) is greater than the critical value of 1.96 when the significance level is 5 per cent. It is a two-tailed test,

proving that the relationship is significant. Moreover, the corresponding p-value (0.000) is significantly lower than the customary figure (0.05), indicating that the pathway to the Cultural Well-being and the Work Life Balance is significant.

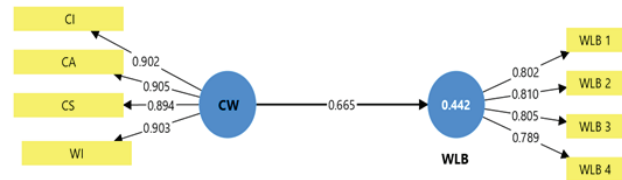


Fig. 1: Direct Effect of CW on WLB

The relationship between Cultural Well-being (CW) and Work-Life Balance (WLB) was examined using PLS-SEM. Results indicate a significant positive association between CW and WLB, with a path coefficient of 0.665, suggesting that higher cultural well-being enhances employees' work-life balance. The R^2 value for WLB was 0.442, indicating that CW explains 44.2% of the variance in work-life balance and demonstrating moderate explanatory power.

Measurement model assessment showed strong indicator reliability, with CW dimensions—Cultural Identity (0.902), Cultural Adaptation (0.905), Cultural Satisfaction (0.894), and Workplace Inclusivity (0.903)—all exceeding the 0.70 threshold. Similarly, WLB indicators (0.789–0.810) met reliability criteria, confirming construct validity.

Bootstrapping results further supported the model, with a highly significant structural path ($t = 22.208$, $p < 0.001$). Overall, the findings confirm that Cultural Well-being has a direct and significant positive effect on employees' Work-Life Balance, highlighting the importance of a supportive cultural environment in organizations.

CONCLUSION

The findings of this study indicate that employee well-being has a strong and positive influence on work-life balance among women working in the IT sector. When employees feel emotionally supported, culturally included, and valued, they are better able to manage both professional and personal responsibilities. The results also show that workplace policies—such as flexible working hours, wellness programs, childcare

support, and mentorship—positively affect work–life balance.

Importantly, workplace policies were found to moderate the relationship between well-being and work–life balance, strengthening the positive impact of well-being when supportive policies are in place. In organisations lacking such policies, a supportive work culture alone may not be sufficient to help employees effectively balance work and life. Overall, the study concludes that both employee well-being and strong workplace policies are essential for promoting work–life balance among women in the IT sector, particularly in high-pressure work environments.

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Role of Self-Help Groups (SHGs) in Economic Upliftment of Unorganised Women Workers in Mayiladuthurai District, Tamilnadu- A Study

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ABSTRACT

The concept of Self-Help Groups (SHGs) dates back three decades. In India, SHGs have played a vital role in the socio-economic development of the economically weaker section. Generally, the level of GDP is the primary factor for knowing the level of economic development and poverty in the country. Poverty and unemployment are among the major problems of developing countries, and India is no exception. The self-help group phenomenon can be an important mechanism for alternative development, especially with a direct approach to the rural poor. Therefore, with the primary objective, this study was conducted to know the economic contribution of SHG's on economic development of women workers in unorganised sectors. The descriptive and empirical research methods were used to complete the research objective. Both primary and secondary data were collected in qualitative and quantitative nature. The total of 360 SHGs members have been used as the sample respondents. The structured and semi-structured interview schedule was used to collect the primary data. The analysis results reveals that majority i.e., 62.20 percent of sample women workers agreed that they economically benefited by joining in SHGs. Further, the sample women workers perception on economic development in different aspects shows that positive impact. Hence, to know the impact of mentioned variables on their overall economic upliftment, the Structural Equation Modelling (SEM) analysis was used and the analysis results indicates that except the independent variable access to resources, all other three independent variables i.e., getting dignified work, participation in family decision making and community participation have significant impact on economic upliftment of sample women workers. In particular, among three significant independent variables the variable community participation has highly influenced the economic upliftment of sample women workers.

KEYWORDS : *Self-help groups (SHGs), Women empowerment, Economic upliftment, Unorganised sector, Rural development, Community participation, Women workers.*

INTRODUCTION

Self-Help Groups (SHGs), established three decades ago, have played a key role in the socio-economic development of India's economically weaker sections. GDP is commonly used to measure economic development, while the poverty line indicates individuals unable to meet basic needs like food, shelter, and healthcare. SHGs have proven effective in poverty alleviation, especially since formal financial institutions

often fail to provide direct or unsecured loans to the poor. Thus, SHGs have become an important tool for financial inclusion and economic development in India and other developing countries.

STATEMENT OF THE PROBLEM:

Poverty and unemployment remain major issues in India, with 27.5% of the population below the national poverty line and 80% below the original UN target of

\$2/day (PPP). SHGs have emerged as a popular strategy for promoting microenterprise and self-reliance, supported by government, NGOs, and educational institutions. Despite social and economic challenges, local groups have used SHGs to facilitate collective action and sustainable development. This study focuses on the role of SHGs in the economic development of unorganized women workers in the selected areas.

OBJECTIVE OF THE STUDY

The primary aim of the study is to know the contribution of SHG's on economic development of unorganised women workers in the study area.

RESEARCH METHODOLOGY

The descriptive and empirical research methods were used to complete the research objective. Both the primary and secondary data were collected in qualitative and quantitative nature. The structured and semi-structured interview schedule was used to collect the primary data and it consisted of demographic and economic development related information about sample women workers.

SAMPLING TECHNIQUES USED

There are five panchayat unions in sample Mayiladuthurai district. There are 241 village panchayats in five panchayat unions i.e., 54 village panchayats in Mayiladuthurai Panchayat Union, 51 village panchayats in Kuthalam Panchayat Union, 57 village panchayats in Sempanorkoil Panchayat Union, 37 village panchayats in Sirkali Panchayat Union, and

42 village panchayats in Kollidam Panchayat Union. Out of this, Sempanorkoil Panchayat Union has been selected purposively. Because, this union have the highest village panchayats in sample district. Out of 57 village panchayats in sample Sempanorkoil union, only 14 village panchayats have been selected randomly which constitutes 25 percent of the total. Further, each three SHGs from identified village panchayats have been selected using simple random sampling technique and each 10 members from sample SHGs those who are working in unorganised sectors were selected randomly as the sample respondent. Thus, the total of 360 SHGs members have been used as the sample respondents.

DATA COLLECTION AND ANALYSIS

The interview schedule was used to collect the primary information from sample SHGs members and the collected data was tabulated and analysed by using adequate statistical tools in SPSS AMOS i.e., percentage analysis and SEM analysis.

ANALYSIS AND RESULTS

The primary objective of this study is to assess the relationship between the perception of unorganised sector women workers about their socio-economic development through participation in SHGs. Thus, the sample women workers were asked about their opinion on economic development in the aspects of getting dignified work (DW), freely access to resources (AR), participation in family decision making (DM), community participation (CP) and overall economic upliftment (EU) through SHGs. To analyse the framed conceptual model the Structural Equation Modelling (SEM) was used. The analysis results are as follows.

Table 1: Unorganised Women Workers Perception about contribution of SHGs on their Economic Upliftment

SN	Particular	SA	A	N/N	DA	SDA	Total
1	Get Dignified Work	72 (20.00)	126 (35.00)	57 (15.80)	76 (21.10)	29 (8.10)	360 (100)
2	Access to Resources	3 (0.80)	163 (45.30)	85 (23.60)	73 (20.30)	36 (10.00)	360 (100)
3	Participation in Family Decision Making	72 (20.00)	144 (40.00)	72 (20.00)	36 (10.00)	36 (10.00)	360 (100)
4	Community Participation	72 (20.00)	180 (50.00)	36 (10.00)	36 (10.00)	36 (10.00)	360 (100)
5	Economic Upliftment	39 (10.80)	185 (51.40)	68 (18.90)	33 (9.20)	35 (9.70)	360 (100)

Source: Computed from primary data

The above table clearly reveals that majority i.e., 62.20 percent of sample women workers agreed that they economically benefited by joining in SHGs. Further, the sample women workers perception on economic development in different aspects shows that positive impact. Hence, to know the impact of above-mentioned variables on their overall economic upliftment the SEM analysis used and the analysis results are as follows.

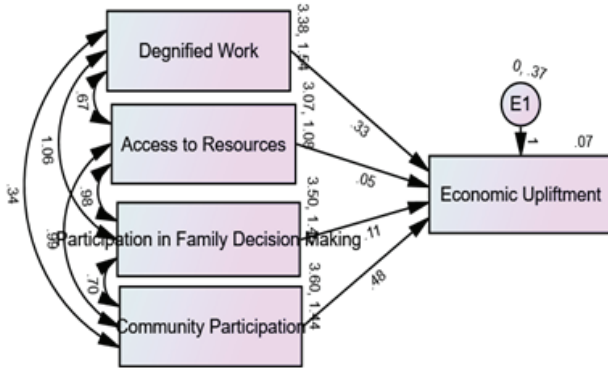


Diagram 2: Path Diagram for Unstandardised Estimates

Source: Computed from primary data

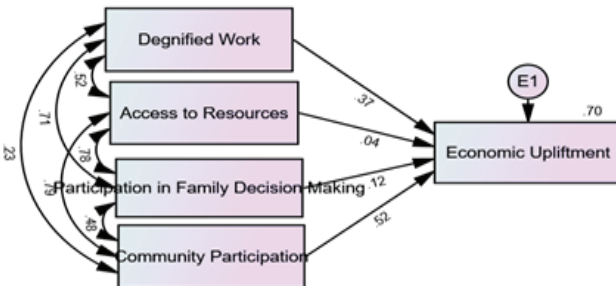


Diagram 3: Path Diagram for Standardised Estimates

Source: Computed from primary data

The path diagrams for unstandardised and standardised estimates reveals that except the independent variable access to resources all other three independent variables i.e., getting dignified work, participation in family decision making and community participation have significant impact on economic upliftment of sample women workers. Among three significant independent variables the variable community participation has highly influenced the economic upliftment of sample women workers i.e., one unit of community participation has increased the economic upliftment of women workers in 0.48 unit in unstandardised estimates and 0.52 units in standardised estimates.

Table 2: Regression Weights & Standardized Regression Weights

Dependent → Independent	Estimate	S.E.	C.R.	P	Standardized Estimate
EU ← DW	0.327	0.038	8.672	***	0.366
EU ← AR	0.047	0.076	0.617	0.537	0.044
EU ← DM	0.110	0.053	2.095	0.036	0.120
EU ← CP	0.484	0.048	10.052	***	0.524

Source: Computed from primary data

The result of unstandardised and standardised regression clearly indicates that the predictor community participation has strongest effect (0.484) on economic upliftment of women workers. Followed by predictors getting dignified work has significant effect (0.327) and participation in family decision making has the barely significant effect (0.110) on overall economic improvement of women workers. Further, the standardised regression weights also reveals that the predictor community participation has the strongest effect (0.524), getting desired work has moderate effect (0.366) and participation in family decision making has the weak effect (0.120) on overall economic improvement of unorganised sector women workers. However, the predictor access to resources has the very weak effect (0.044) on overall economic improvement of unorganised sector women workers.

Table 3: Variances & Covariances

Variable	Estimate	S.E.	C.R.	P
DW	1.541	0.115	13.398	***
AR	1.084	0.081	13.398	***
DM	1.450	0.108	13.398	***
CP	1.440	0.107	13.398	***
E1	0.372	0.028	13.398	***

Covariances

Variables	Estimate	S.E.	C.R.	P
AR ↔ DM	0.975	0.084	11.630	***
DW ↔ CP	0.343	0.081	4.249	***
AR ↔ CP	0.993	0.084	11.790	***
DM ↔ CP	0.700	0.085	8.260	***
DW ↔ DM	1.061	0.097	10.969	***

DW ↔ AR	0.672	0.077	8.740	***

Source: Computed from primary data

The analysis of variances between predictor variables and outcome variable depicts that all the variables have significant relationships. Further, the analysis of covariances among the predictor variables shows that all the identified predictor variables were significant relationship between each one i.e., the variables access to resources and participation in family decision making, access to resources and community participation and getting dignified work and participation in family decision making have the strong correlation. Further, the variables participation in family decision making and community participation and getting dignified work and access to recourse have moderate correlation. However, the variables getting dignified work and community participation have weak correlation.

CONCLUSION AND RECOMMENDATIONS

The analysis shows correlations among predictor variables: strong correlations exist between access to resources & family decision participation, access to resources & community participation, and dignified work & family decision participation; moderate correlations are found between family decision participation & community participation, and dignified work & access to resources; weak correlation exists between dignified work & community participation.

Regarding overall economic improvement of women through SHGs, community participation has the strongest effect, dignified work a moderate effect, family decision participation a small positive effect, and access to resources is not significant.

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Customer Satisfaction and Brand Loyalty in Compact SUVs: A Regional Perspective

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ABSTRACT

The compact SUV segment has emerged as one of the most competitive and rapidly expanding categories in the Indian automobile market, particularly in tier-II cities where consumer preferences and ownership experiences differ from metropolitan regions. In this context, understanding customer satisfaction and brand loyalty has become crucial for automobile manufacturers and dealers aiming to achieve sustainable growth. The present study examines the relationship between customer satisfaction and brand loyalty among compact SUV owners in Tiruchirappalli district, Tamil Nadu, from a regional perspective. Primary data were collected from 420 respondents using a structured questionnaire covering product attributes, after-sales service quality, perceived value, trust, customer satisfaction, and brand loyalty. The study adopts a descriptive and analytical research design, and the data were analyzed using SPSS through reliability testing, descriptive statistics, correlation analysis, multiple regression analysis, and mediation–moderation analysis. The results reveal that product attributes and after-sales service quality significantly influence customer satisfaction, while customer satisfaction strongly predicts brand loyalty. The findings further indicate that perceived value partially mediates the relationship between customer satisfaction and brand loyalty, and trust strengthens this relationship. The study highlights the importance of delivering superior product performance, reliable service quality, and value-driven offerings to enhance customer retention in regional markets. The findings provide valuable managerial insights for automobile firms and contribute to the existing literature on automotive consumer behavior by offering region-specific empirical evidence from a tier-II city in India.

KEYWORDS : *After-sales service, Brand loyalty, Compact SUV, Customer satisfaction, Perceived value, Regional study.*

INTRODUCTION

The Indian automobile industry has transformed significantly over the past decade, with compact SUVs becoming a fast-growing and competitive segment. Factors such as rising incomes, better road infrastructure, higher seating preferences, safety features, and driving comfort have fueled demand (SIAM, 2023; Izogo et al., 2015).

In this competitive market, manufacturers and dealers increasingly prioritize customer satisfaction, as satisfied customers are more likely to repurchase, recommend the

brand, and show reduced price sensitivity (Oliver, 2016; Kumar & Nayak, 2019). Satisfaction in the automobile sector depends not only on vehicle performance and design but also on dealership interactions, financing, warranties, and after-sales service.

Brand loyalty, shaped by long-term satisfaction and trust, reflects customers' commitment to repurchase and recommend a brand, thereby enhancing profitability and brand equity (Chaudhuri & Holbrook, 2017; Rather & Sharma, 2018). While most studies focus on metropolitan markets, tier-II cities like Tiruchirappalli, Tamil Nadu, have distinct consumer expectations,

income levels, and dealership experiences (Rajan CS et al., 2025).

This study examines the relationship between customer satisfaction and brand loyalty among compact SUV owners in Tiruchirappalli. By adopting a regional perspective, it aims to provide insights for local dealerships and manufacturers to strengthen marketing strategies, after-sales services, and long-term customer relationships.

Statement of the problem

Despite the rapid growth of India's compact SUV segment, empirical research on how customer satisfaction affects brand loyalty in tier-II cities like Tiruchirappalli is limited. Customer satisfaction—shaped by product performance, after-sales service, pricing, and ownership experience—is a key driver of loyalty and repeat purchases (Khan & Loomba, 2023). Most studies focus on metropolitan markets or general automobile satisfaction, leaving region-specific insights for emerging urban areas lacking. Additionally, while multidimensional satisfaction constructs have been identified, their direct impact on brand loyalty among compact SUV owners remains unexplored (M. Sridhar & Rajan C S, 2025). Understanding this relationship in Tiruchirappalli is crucial for manufacturers and dealers to design localized strategies that enhance customer retention and loyalty in competitive markets..

Objectives of the Study

1. To examine the relationship between customer satisfaction and brand loyalty among compact SUV owners.
2. To identify the key determinants of customer satisfaction in the compact SUV segment.
3. To analyze the mediating role of perceived value between customer satisfaction and brand loyalty.
4. To examine the moderating role of trust in strengthening brand loyalty.
5. To provide managerial suggestions for improving customer retention in regional markets.

Research Hypotheses

H1: Product attributes have a significant positive influence on customer satisfaction.

H2: After-sales service quality has a significant positive influence on customer satisfaction.

H3: Perceived value has a significant positive influence on customer satisfaction.

H4: Customer satisfaction has a significant positive influence on brand loyalty.

H5: Perceived value mediates the relationship between customer satisfaction and brand loyalty.

H6: Trust moderates the relationship between customer satisfaction and brand loyalty.

REVIEW OF LITERATURE

Recent studies have focused on customer satisfaction and brand loyalty in the SUV segment, especially in emerging markets. Moksini et al. (2023) found that functional attributes—comfort, cabin space, and value for money—drive satisfaction among Malaysian compact SUV owners, while symbolic factors like design and social status have minimal impact. Putra (2019) emphasized that customer satisfaction and brand image strengthen loyalty and market share among Toyota Fortuner users in Indonesia. In India, Pirakatheeswari (2025) highlighted that vehicle features, pricing, performance, after-sales service, and brand perception influence satisfaction and foster loyalty, stressing the need for region-specific studies. Vadavadagi (2022) confirmed that product and service quality positively affect loyalty, and Tannady et al. (2023) showed satisfaction mediates the effect of quality and brand equity on loyalty, a framework applicable to compact SUVs.

Customer satisfaction in automobiles depends on performance, reliability, safety, comfort, pricing, and after-sales service (Fornell et al., 1996). Strong brands also enhance loyalty through emotional attachment and trust (Aaker, 1996; Keller, 2013). Studies indicate functional value, including comfort, space, stability, and fuel efficiency, is critical for compact SUV satisfaction (Suki, 2017). Regional context matters: satisfaction–loyalty relationships vary across demographics and locations, particularly in tier-II cities where incomes, infrastructure, and dealership experiences differ (Mittal & Kamakura, 2018). In India, emerging urban markets contribute significantly to SUV sales, yet customer

behavior in these regions remains under-researched, highlighting the importance of localized studies for compact SUV manufacturers (Kotler & Keller, 2022).

RESEARCH METHODOLOGY

Research Design

This study uses a descriptive and analytical research design to examine customer satisfaction and brand loyalty among compact SUV owners in Tiruchirappalli. The descriptive approach captures consumer characteristics, perceptions, and experiences, while the analytical approach examines relationships among variables such as product attributes, after-sales service, perceived value, trust, customer satisfaction, and brand loyalty. This combination provides a comprehensive understanding of both prevailing conditions and causal relationships.

DATA ANALYSIS AND INTERPRETATION

Table 1 Demographic Profile of the Respondents

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	286	68.1
	Female	134	31.9
	Total	420	100.0
Age (Years)	Below 25	38	9.0
	26 – 30	102	24.3
	31 – 40	166	39.5
	41 – 50	88	21.0
	Above 50	26	6.2
	Total	420	100.0
Monthly Income (₹)	Below 30,000	76	18.1
	30,001 – 50,000	146	34.8
	50,001 – 75,000	116	27.6
	Above 75,000	82	19.5
	Total	420	100.0
Occupation	Government Employee	76	18.1
	Private Employee	154	36.7

Occupation	Business / Self-employed	124	29.5
	Professional	42	10.0
	Others	24	5.7
	Total	420	100.0
Family Type	Nuclear Family	258	61.4
	Joint Family	162	38.6
	Total	420	100.0
Preferred Compact SUV Brand	Maruti Suzuki	101	24.0
	Hyundai	91	21.7
	Tata	81	19.3
	Kia	63	15.0
	Mahindra	53	12.6
	Others	31	7.4
	Total	420	100.0
Monthly Car-related Expenses (₹)	Below 5,000	96	22.9
	5,001 – 8,000	177	42.1
	8,001 – 12,000	99	23.6
	Above 12,000	48	11.4
	Total	420	100.0
After-Sales Service Experience	Poor	21	5.0
	Average	39	9.3
	Good	271	64.5
	Very Good	89	21.2
	Total	420	100.0

The demographic profile shows that compact SUV ownership in Tiruchirappalli is predominantly male, though female ownership is increasing. Most owners are aged 31–40, followed by 26–30 and 41–50, indicating preference among economically active, family-oriented individuals. Middle-income groups (₹30,001–50,000) form the majority, reflecting the perception of compact SUVs as affordable yet value-driven. Private employees and self-employed individuals are the largest occupational groups, and nuclear families dominate, highlighting the suitability of these vehicles for small households. Maruti Suzuki, Hyundai, and

Tata are the preferred brands, indicating strong brand trust and service availability. Most respondents spend moderately on car-related expenses and report good to very good after-sales service, emphasizing the role of service quality in satisfaction and loyalty.

Table 2 Reliability Analysis

Construct	No. of Items	Cronbach's Alpha
Product Attributes	6	0.842
After-Sales Service Quality	5	0.861
Perceived Value	4	0.819
Trust	4	0.833
Customer Satisfaction	5	0.875
Brand Loyalty	5	0.887

All constructs recorded Cronbach's alpha values above 0.80, indicating excellent internal consistency and confirming the reliability of the instrument.

Table 3 Correlation Analysis

Variables	CS	BL	PV	TR
Customer Satisfaction (CS)	1			
Brand Loyalty (BL)	0.672**	1		
Perceived Value (PV)	0.598**	0.621**	1	
Trust (TR)	0.543**	0.659**	0.566**	1

The results indicate a strong positive relationship between customer satisfaction and brand loyalty ($r = 0.672$), supporting the premise that satisfied customers are more loyal. Perceived value and trust also showed significant positive correlations with both satisfaction and loyalty.

Table 4 Regression Analysis

Model 1: Determinants of Customer Satisfaction

Predictor	β	t-value	Sig.
Product Attributes	0.348	7.94	0.000

After-Sales Service Quality	0.372	8.21	0.000
Perceived Value	0.216	4.63	0.000

The regression results reveal that product attributes and after-sales service quality significantly and positively influence customer satisfaction, supporting H1 and H2. Perceived value also showed a significant effect, supporting H3. The model explains 58% of the variance in customer satisfaction, indicating strong explanatory power.

CONCLUSION

The present study concludes that customer satisfaction is a pivotal factor in driving brand loyalty among compact SUV owners in Tiruchirappalli district. The findings demonstrate that satisfaction is significantly influenced by product attributes, after-sales service quality, and perceived value, while trust plays a crucial moderating role in strengthening loyalty outcomes. The results highlight that customer loyalty in the compact SUV segment is not driven solely by the product but by the overall ownership experience and the confidence customers place in the brand. By adopting a regional perspective, the study provides valuable insights into consumer behavior in tier-II cities, where expectations and service dynamics differ from metropolitan markets. The study contributes to academic literature by empirically validating the satisfaction–loyalty relationship with mediation and moderation effects in a regional automobile context and offers practical guidance to manufacturers and dealers seeking sustainable growth through customer-centric strategies.

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Role of Artificial Intelligence in Healthcare

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ABSTRACT

This research investigates the intricate interplay between Corporate Social Responsibility (CSR) implementation, firm reputation, and sustainable business performance in the context of Indian manufacturing companies. Drawing on established literature and employing quantitative methods, the study examines the impact of various CSR dimensions on key outcomes. The results affirm that CSR practices significantly influence both firm reputation and sustainable business performance, with specific dimensions such as Community Integration, Employee Input Priority, and Transparent Local Relations playing crucial roles. The study underscores the strategic importance of CSR in shaping positive stakeholder relationships and fostering brand reputation, contributing to the long-term sustainability of businesses. The findings also reveal the interconnectedness of CSR dimensions and the critical role of firm reputation in achieving sustained business success. Furthermore, the study suggests promising avenues for future research, emphasizing the need to explore cultural nuances, industry-specific CSR strategies, and stakeholder perceptions in the unique Indian business environment. Overall, this research contributes valuable insights for academics and practitioners seeking a comprehensive understanding of CSR dynamics and their impact on sustainable and reputably resilient businesses.

KEYWORDS : *Corporate social responsibility (CSR), Firm reputation, Sustainable business Performance, Indian manufacturing companies, Stakeholder relationships.*

INTRODUCTION

The Corporate Social Responsibility (CSR) is increasingly recognized as a strategic marketing and business tool, as consumers favor socially responsible brands. Beyond product quality and pricing, CSR enhances brand image, fosters positive consumer attitudes, and provides a competitive edge (Porter & Kramer, 2006; Rahman, 2011). CSR involves voluntarily integrating social, environmental, and ethical considerations into business operations, addressing societal concerns, environmental impacts, and stakeholder well-being (Elkington, 1998; Slaper & Hall, 2011; Waheed & Zhang, 2020). Stakeholder Theory emphasizes that organizations are accountable to all groups affected by their actions, including employees, customers, communities, and the environment (Freeman et al., 2010). Studies show CSR promotes sustainable

innovation, employee commitment, local employment, and improved business performance (Bacinello et al., 2020). Consumers increasingly prioritize ethical and social practices over price or quality, making CSR a key factor in loyalty, word-of-mouth, and customer retention (Webb et al., 2008; Brunk, 2010). In recent decades, CSR has gained prominence not just for philanthropy but also for brand building, ethical practices, and environmental sustainability (Ben Abdallah et al., 2020). Despite extensive global literature, research on CSR's impact on organizational performance in India remains limited, and this study seeks to address that gap (Carroll & Shabana, 2010; Martinez et al., 2013).

H1: CSR implementation positively impacts sustainable business performance.

H2: CSR implementation positively influences firm reputation.

Data Analysis & Interpretation

Reliability Statistics	
Cronbach's Alpha	N of Items
.834	12

The reliability analysis, measured by Cronbach's Alpha (0.834), indicates a high level of internal consistency among twelve items assessing aspects such as Societal Well-being Support, Transparent Local Relations, and Customer-Centric Decisions. This suggests strong reliability in measuring corporate social responsibility and organizational perception dimensions, including High Customer Satisfaction and Esteemed Reputation. Researchers and practitioners can trust the consistency of this scale for evaluating these constructs in various contexts.

H1: CSR implementation has positive impact on sustainable business performance

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.623a	.388	.373	.57719
a. Predictors: (Constant), Customer Satisfaction, Skill and Career Support, Community Integration for Development, Work-life Balance Aid, Societal Well-being support, Accurate Product information to customer, Transparent Local Relations, Employee Input Priority, Customer-Centric Decisions				

The model explains a significant portion of the variance in the dependent variable (Firm Reputation). The coefficient of determination (R-squared) is 0.388, indicating that approximately 38.8% of the variability in the Firm Reputation can be explained by the predictors included in the model. The adjusted R-squared, which considers the number of predictors and sample size, is 0.373.

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	74.621	9	8.291	24.888	.000b
	Residual	117.601	353	.333		
	Total	192.222	362			
a. Dependent Variable: FirmReputation						

b. Predictors: (Constant), Customer Satisfaction, Skill and Career Support, Community Integration for Development, Work-life Balance Aid, Societal Well-being support, Accurate Product information to customer, Transparent Local Relations, Employee Input Priority, Customer-Centric Decisions

The analysis of variance (ANOVA) table indicates that the regression model is statistically significant ($F = 24.888$, $p < 0.001$). This suggests that at least one of the predictors has a significant effect on Firm Reputation. The p-value for the overall model is highly significant, supporting the rejection of the null hypothesis.

Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta			
1	(Constant)	.878	.261		3.365	.001
	Societal Well-being support	.075	.049	.078	1.521	.129
	Transparent Local Relations	-.046	.051	-.047	-.902	.368
	Community Integration for Development	.119	.050	.130	2.391	.017
	Employee Input Priority	.130	.045	.157	2.878	.004
	Work-life Balance Aid	-.019	.037	-.027	-.504	.614
	Skill and Career Support	.081	.045	.088	1.800	.073
	Customer-Centric Decisions	.148	.047	.177	3.164	.002
	Accurate Product information to customer	.213	.046	.248	4.602	.000
	Customer Satisfaction	.074	.044	.085	1.667	.096
a. Dependent Variable: Firm Reputation						

The multiple regression analysis examined the impact of CSR implementation on sustainable business performance, measured through Firm Reputation. The model explains 38.8% of the variance in Firm Reputation ($R^2 = 0.388$, Adjusted $R^2 = 0.373$).

The model intercept (0.878) is significant ($t = 3.365$, $p = 0.001$), indicating a positive baseline effect on reputation. Among CSR components, Community Integration for Development (0.119, $p = 0.017$), Employee Input Priority (0.130, $p = 0.004$), and Skill and Career Support (0.081, $p = 0.073$) show positive impacts. Customer-Centric Decisions (0.148, $p = 0.002$) and Accurate Product Information (0.213, $p < 0.001$) emerge as the strongest contributors. Societal Well-being Support, Transparent Local Relations, and Work-Life Balance Aid show positive or negative trends but are not statistically significant, while Customer Satisfaction trends positively (0.074) but falls short of significance ($p = 0.096$).

Overall, the findings support H1 that CSR implementation positively influences sustainable business performance. Key drivers include community engagement, employee participation, and transparent communication, highlighting that strategic and targeted CSR efforts enhance Firm Reputation.

H2: CSR implementation has positive influence on firm reputation.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.974a	.948	.947	.13887
a. Predictors: (Constant), Customer Satisfaction, Skill and Career Support, Community Integration for Development, Work-life Balance Aid, Societal Well-being support, Accurate Product information to customer, Transparent Local Relations, Employee Input Priority, Customer-Centric Decisions				

The multiple regression model demonstrates a strong fit to the data with an exceptionally high R-squared value of 0.948, indicating that approximately 94.8% of the variability in Business Performance can be explained by the included predictors. The adjusted R-squared, accounting for the number of predictors and sample size, is also high at 0.947. The standard error of the estimate is 0.13887, reflecting the accuracy of the model's predictions.

ANOVA ^a					
Model	Sum of Squares	df	Mean Square	F	Sig.
1 Regression	124.481	9	13.831	717.214	.000b

Residual	6.807	353	.019		
Total	131.288	362			
a. Dependent Variable: BusinessPerformance					
b. Predictors: (Constant), Customer Satisfaction, Skill and Career Support, Community Integration for Development, Work-life Balance Aid, Societal Well-being support, Accurate Product information to customer, Transparent Local Relations, Employee Input Priority, Customer-Centric Decisions					

The analysis of variance (ANOVA) results is highly significant ($F = 717.214$, $p < 0.001$), indicating that at least one of the predictors significantly influences Business Performance. The p-value for the overall model is very low, supporting the rejection of the null hypothesis.

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.035	.063		.559	.577
	Societal Well-being support	-.005	.012	-.006	-.420	.675
	Transparent Local Relations	.315	.012	.386	25.544	.000
	Community Integration for Development	.041	.012	.054	3.435	.001
	Employee Input Priority	-.022	.011	-.032	-2.004	.046
	Work-life Balance Aid	.343	.009	.591	38.578	.000
	Skill and Career Support	.331	.011	.436	30.660	.000
	Customer-Centric Decisions	-.003	.011	-.005	-.306	.760
	Accurate Product information to customer	-.004	.011	-.006	-.376	.707
	Customer Satisfaction	-.007	.011	-.009	-.627	.531
a. Dependent Variable: Business Performance						

CONCLUSION

In conclusion, this study illuminates the intricate relationships among Corporate Social Responsibility

(CSR) implementation, firm reputation, and sustainable business performance. The findings affirm the pivotal role of CSR in shaping positive stakeholder relationships and enhancing brand reputation, ultimately contributing to sustainable business practices. Notable dimensions such as Community Integration, Employee Input Priority, and Transparent Local Relations emerge as critical drivers influencing firm reputation and sustainable business performance. The interconnectedness of CSR practices, firm reputation, and long-term business success is evident, highlighting the strategic importance of specific CSR dimensions in cultivating positive public images and fostering customer loyalty. For future research, exploring contextual nuances in the Indian business landscape, industry-specific CSR strategies, and stakeholder perceptions of CSR could deepen our understanding of these dynamics. Overall, this study contributes valuable insights for academics and practitioners seeking to navigate the evolving landscape of CSR in fostering sustainable and reputably resilient businesses

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The Changing Climate of Work: How Organizational Culture Shapes Employee Commitment in the Digital Age

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ABSTRACT

This study investigates the influence of organizational culture on employee commitment in the context of digital transformation, emphasizing how technology-driven workplace environments reshape cultural dynamics and employee attachment. A quantitative, descriptive, and explanatory research design was adopted, employing a cross-sectional online survey of 250 employees from digitally enabled organizations across the IT, banking, education, and service sectors in major Indian cities. Data were collected using standardized instruments, including the Denison Organizational Culture Survey (DOCS), Meyer and Allen's Three-Component Commitment Model, and a digital transformation scale adapted from Kane et al. (2019). The results, analyzed using SPSS 27 and the Hayes PROCESS Macro (Model 1), revealed that organizational culture significantly and positively affects employee commitment, while digital transformation moderates this relationship, strengthening the cultural impact in technology-integrated workplaces. Reliability and validity tests confirmed robust psychometric properties (Cronbach's $\alpha > 0.80$; KMO = 0.918; $p < 0.001$). The findings highlight that fostering adaptive, participative, and innovation-oriented cultures enhances employee commitment in the digital age. The study contributes to organizational behavior literature and provides practical implications for managers seeking to sustain engagement and loyalty amid rapid digital evolution.

KEYWORDS : *Organizational culture, Employee commitment, Digital transformation, Workplace behavior, Organizational climate, SPSS, Hayes PROCESS macro.*

INTRODUCTION

The twenty-first century workplace is rapidly evolving due to digitalization, globalization, and changing employee expectations. Flexible, technology-driven work systems, accelerated by the COVID-19 pandemic, have transformed how employees interact, collaborate, and experience organizations (Carnevale & Hatak, 2020; Kniffin et al., 2021). In this context, organizational culture and climate play a crucial role in fostering employee engagement, trust, and commitment, which are essential for sustaining performance and innovation.

Organizational culture—the shared values, norms, and beliefs within an organization—shapes employee

motivation, satisfaction, and sense of belonging (Schein, 2010). Employee commitment, or psychological attachment to the organization, strongly predicts retention, performance, and organizational success (Meyer & Allen, 1991). Supportive, participative, and innovation-oriented cultures have been shown to enhance commitment through trust, recognition, and meaningful work experiences (Lok & Crawford, 2004; Denison, 1996; Nazir et al., 2019).

Digital transformation, however, has disrupted traditional organizational dynamics. Remote and hybrid work, virtual communication, and automation challenge how culture is transmitted and experienced (Bolisani et al., 2020). Without frequent face-to-face interaction, maintaining a cohesive culture that nurtures

commitment requires deliberate strategies such as digital leadership, online collaboration, and virtual socialization (Chong, Huang, & Chang, 2022; Wang et al., 2021).

RESEARCH METHODOLOGY

The study employed a quantitative, descriptive, and explanatory research design to examine the effect of organizational culture on employee commitment within the context of digital transformation. Data were collected via a cross-sectional online survey from 250 employees working in digitally enabled organizations across the IT, banking, education, and service sectors in major Indian cities. Purposive sampling targeted professionals actively engaged in technology-driven workplaces.

The survey instrument comprised validated scales, including the Denison Organizational Culture Survey (DOCS), the Three-Component Model of Commitment scale (Meyer & Allen, 1991), and a ten-item digital transformation scale adapted from Kane et al. (2019). Reliability and validity were confirmed using Cronbach's alpha (> 0.80) and Exploratory Factor Analysis (KMO = 0.918; $p = 0.001$).

Data analysis was conducted using SPSS version 27 and the Hayes PROCESS Macro (Model 1) to test regression and moderation effects. Ethical considerations were strictly observed, ensuring voluntary participation and confidentiality. Overall, the methodological approach ensured rigor, reliability, and relevance in assessing the moderating role of digital transformation on the relationship between organizational culture and employee commitment.

Objectives of the Study

1. To examine the relationship between organizational culture and employee commitment in the context of digitally driven workplaces.
2. To identify the impact of digital transformation and remote/hybrid work environments on organizational culture and employee commitment.
3. To suggest strategies for enhancing employee commitment through a supportive and adaptive organizational culture in the digital age.

RESEARCH HYPOTHESES

- H1: There is a significant positive relationship between organizational culture and employee commitment in digitally driven workplaces.
- H2: Digital transformation and flexible work arrangements moderate the relationship between organizational culture and employee commitment.
- H3: Employees who perceive their organizational culture as innovative, collaborative, and adaptive demonstrate higher levels of affective commitment compared to those in rigid or hierarchical cultures.

RESULTS AND ANALYSIS

Data Screening and Sample Profile

There were 250 valid responses that were collected among the employees who were involved in digitized businesses- that is, those working in the information technology business, the banking business and educational institutions. In this group, 58 per cent were male and 42 per cent were female. Most of the respondents (63 percent) were within the 2635 age bracket with 70 percent having a work experience of two to eight years. High quality data screening was used to justify the lack of missing or abnormal values thus validating the assumption of normality and linearity.

Reliability Analysis

To ensure the internal consistency of the constructs, Cronbach's Alpha was computed for each variable.

Table 1

Construct	No. of Items	Cronbach's Alpha	Interpretation
Organizational Culture	18	0.921	Excellent
Employee Commitment	15	0.894	Good
Digital Transformation	10	0.875	Good

All alpha values exceed the 0.70 threshold (Nunnally, 1978), indicating strong internal reliability.

Validity and Factor Analysis

Exploratory Factor Analysis, which was done using Principal Component Analysis with Varimax rotation,

was used to explain the underlying dimensionality of the construct. The Kaiser-Meyer-Olkin measure of sampling adequacy gave a value of 0.918, which is very high and it shows that the dataset is quite adequate. The Test of Sphericity by Bartlett gave $2345.61 = -2(276)$, $p = 0.0001$ and hence indicated that the data is suitable to use in the factor analysis.

A solution was obtained in 3 factors as predicted in theory. The first one, which was called Supportive and Participative Culture, explained 32.6% of the total variance. The second variable that accounted 21.3% of the variance was the second one, which is Adaptive and Innovative Culture. The third dimension, which is Goal-oriented Culture, added 16.8% of the variance.

All these factors accounted 70.7% of the total variance thus giving strong evidence to construct validity.

Descriptive Statistics and Correlation Analysis

Table 2

Variables	Mean	SD	1	2	3
1. Organizational Culture	4.02	0.54	1		
2. Employee Commitment	3.87	0.61	0.742*	1	
3. Digital Transformation	3.95	0.58	0.563*	0.612*	1

*Correlation is significant at the 0.01 level (2-tailed).

The table shows that Organizational Culture, Employee Commitment, and Digital Transformation all have moderate to high average scores with low variability. Significant positive correlations exist between all pairs of variables, with the strongest link between Organizational Culture and Employee Commitment (0.742). This means better culture is strongly related to higher commitment and both are positively connected to digital transformation efforts.

Regression Analysis

Model 1: Direct Effect of Organizational Culture on Employee Commitment

Dependent Variable: Employee Commitment

Independent Variable: Organizational Culture

Table 3

Model	R	R ²	Adjusted R ²	Std. Error	F	Sig.
1	0.742	0.551	0.549	0.413	303.45	< 0.001

Regression Coefficients

Table 4

Predictor	β	t	Sig.
(Constant)	0.985	3.42	0.001
Organizational Culture	0.689	17.42	< 0.001

The regression analysis examines the direct effect of Organizational Culture on Employee Commitment.

The correlation coefficient $R = 0.742$

$R = 0.742$ indicates a strong positive relationship between Organizational Culture and Employee Commitment.

$R^2 = 0.551$ means that 55.1% of the variance in Employee Commitment is explained by Organizational Culture.

The adjusted $R^2 = 0.549$ confirms the model's good fit, accounting for the number of predictors.

The model's F-statistic (303.45) is highly significant ($p < 0.001$), indicating that Organizational Culture is a significant predictor of Employee Commitment.

Regression Coefficients

The intercept (constant) is 0.985 and is statistically significant ($p = 0.001$).

The coefficient for Organizational Culture is 0.689, which is positive and highly significant ($p < 0.001$). This shows that for every one-unit increase in Organizational Culture, Employee Commitment increases by 0.689 units.

Organizational Culture significantly and positively influences Employee Commitment, explaining over half of its variance. Stronger organizational culture leads to higher employee commitment.

CONCLUSION

This study examined the impact of organizational culture on employee commitment in digitally driven workplaces, highlighting the moderating role of digital transformation. The findings provide strong support for

the hypotheses:

- Organizational culture significantly influences employee commitment. Supportive, participative, and adaptive cultures foster affective, normative, and continuance commitment, reinforcing loyalty and engagement.
- Digital transformation strengthens the culture–commitment link. Organizations effectively leveraging digital tools, remote platforms, and virtual communication enhance employees' perceptions of support, inclusion, and purpose, amplifying the impact of culture.
- Dynamic, adaptive cultures boost affective commitment. Employees engaged in cultures emphasizing creativity, flexibility, and teamwork show stronger emotional attachment, highlighting the need to align cultural values with modern digital-age work expectations.

Overall, the study confirms that organizational culture remains a cornerstone of employee commitment. In the digital era, it must be deliberately reinforced using technology. The findings contribute to organizational behavior theory by integrating culture, commitment, and digital transformation, while offering practical guidance for contemporary management practice.

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Socio-Economic and Entrepreneurial Empowerment of Persons with Disabilities (PWD) with special reference to Tiruchirappalli District

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ABSTRACT

Now a day's socio economic position is an important role for every human being. This is one of the parameters to define the socio economic status of the society. This paper focused on disabled entrepreneurs are what their position in economically, socially and also what problems they are faced in the society as well as business activities. The study as taken for only disabled entrepreneur that 150 respondents are taken on the basis of snowball sample testing on the generated sample size. This paper contains social position, economic position, factors influencing doing the business activities benefit activities and problem faced by disabled entrepreneurs. This paper gives the how many disabled entrepreneurs are socially and economically wealth are not.

KEYWORDS : *Disabled entrepreneurs, Factors influencing, Economic, Socially, Position.*

INTRODUCTION

The economic improvement of a Nation depended on its industrialized Development. The Industrial development is based on the entrepreneurial competence of the people. So the national economic growth as part of entrepreneurial activities as the same for each and every people to involved directly and indirectly to participated our economic development at the same for Disability/ disabled entrepreneurs is also involved in the part of the economic development activities. So that the disabilities entrepreneurs how to develop your part of our nation. An entrepreneur is one of the most vital segments of economic growth. India has witnessed high economic growth rates in the past two decade and there has been a remarkable increase in the per capita income. Various initiative are undertaken to improve the economic growth of India by the disabled entrepreneurs. Regrettably different section of the Indian population still remain economically rundown. Though disabled persons constitute a tiny division of the Indian population, only few disabled are developed

in relative numbers. So many problems to faced by disabled entrepreneurs in the society. Particularly disabled people face psychological, educational, employment and social problems at the same for disabled entrepreneurs also faces these types of problems. However, people with disabled entrepreneurs who are considering establishing their own business face many problems that a non- disabled person will not endure and therefore want training programs that are adapted to their exacting needs. This paper explain the background to people with disabled entrepreneurs becoming self employed and identify what can be done to aid them by the make use of entrepreneurship education and training. In order to inculcate the spirit of self-confidence among such disabled entrepreneurs youths through self employment and use their wisdom and knowledge gained through professional training and education for their development. Disabled Population in India as per census 2022 – In India out of the 151 Cr population, 2.68 Cr persons are disabled which is 2.21% of the total population. Among the disabled

population 56% (1.5 Cr) are males and 44% (1.18 Cr) are females. In the total population, the male and female population are 51% and 49% respectively. Majority (69%) of the disabled population resided in rural areas (1.86 Cr disabled persons in rural areas and 0.81 Cr in urban areas). In the case of total population also, 69% are from rural areas while the remaining 31% resided in urban areas. As per Census 2011, about 2.68 crore people in India - 2.21 percent of the total population - are disabled. At an all-India level, 36 percent of total disabled persons are employed.

Disabled Population by Type of Disability India : 2022

Type of Disability	Persons	Males	Females
Total	2,68,10,557	1,49,86,202	1,18,24,355
In Seeing	50,32,463	26,38,516	23,93,947
In Hearing	50,71,007	26,77,544	23,93,463
In Speech	19,98,535	11,22,896	8,75,639
In Movement	54,36,604	33,70,374	20,66,230
Mental Retardation	15,05,624	8,70,708	6,34,916
Mental Illness	7,22,826	4,15,732	3,07,094
Any Other	49,27,011	27,27,828	21,99,183
Multiple Disability	21,16,487	11,62,604	9,53,883

Source: Census Report 2022

STATEMENT OF THE PROBLEM

Disabilities are the measurement of every human condition. Almost everyone will be provisionally or lastingly impaired at some point in life. Most families prolong have a disabled member, and many non-disabled people acquire dependability for supporting and caring for their relatives and friends with disabilities. Now a day most of the disabilities to be create an accidental activity so that the accidently person also comes under in the disability category. Every disabilities has faced the moral and political issue of how best to include and support people with disabilities. This issue will become more acute as the demographics of societies change and more people live to the world. That the type of disabilities most of them doing any where working in employee only not an employer because they faced so many problem and also not an aware the welfare schemes. Basically they are living mainstream of the society see the disability list and see the person afterwards which makes confidence issue major problems for disabled entrepreneurs. There are also

problems to external facilities and support that limit the ability of disabled person to participate on equal basis for instance in access to information on business development, communication and infrastructure. Should these problems not to be removed and the disabled entrepreneur according the right business environment, then the situation will continue getting as a country may not realize some of its vision 2030 goals.

OBJECTIVES OF THE STUDY

- To analysis factors influencing disabled person become an entrepreneurs.
- To analysis Social Position of disabled entrepreneurs.
- To analysis Economic position of disabled entrepreneurs.
- To evaluate the problem faced by disabled entrepreneurs.

RESEARCH METHODOLOGY

This research is proposed to be conducted in the Tiruchirappalli District. The research will be descriptive and realistic in nature, includes both Primary and Secondary data. The primary data will be collected from the respondents through well-structured questionnaire for interview schedule by used snowball sampling technique and Secondary data from Books, Journals and Internet. It is planned to conduct pre-testing and pilot study. The population is identified by collecting the secondary data form the District disabilities welfare department of Tiruchirappalli District. In generally disabled people are doing business activities but they are not registered in business. A sample of 150 respondents was used because of the nature of the sampling technique business people. Snowball sampling was tested on the generated sample size. So the proportion non random sampling, snowball sampling techniques have used. After proper coding and scrutinizing, the data may take for formal and rigorous data analysis, through a gamut of statistical technique to get logically consist reference with help of Statistical Package for Social Science (SPSS). The following statistical tools proposed to apply for data analysis percentage analysis and ANOVA.

ANALYSIS AND INTERPRETATION

From the table shows that the demographic profiles of disabled entrepreneur were analyzed and the results are presented. The results indicated that about 84.00 per cent of the male disabled entrepreneurs while the 16 percent disabled entrepreneurs of are female. The result also show that about (44.00 percent) of the disabled entrepreneurs belong to the age group of 31 - 40 above years followed by (38.00 percent) above 40 years, below 21-30 years (18.00 percent). It is clear that about physically disabled (46.00 percent) of the disabled entrepreneurs while the (34.00 percent) of the disabled entrepreneurs are orthopedically disabled and (20.00 percent) disabled entrepreneurs are visually disabled. (58.00 percent) of disabled entrepreneurs disability percentage level above 75% while the (32.00 percent) of disabled entrepreneurs disability percentage level 50% -75%, (6.00 percent) of disabled entrepreneurs disability percentage level 25% -50% and (4.00 percent) of disabled entrepreneurs disability percentage level less than 25% of disability percentage level. Majority of the policy holder are urban areas (58.00 percent) and rural areas (42.00 percent). The majority of the disabled entrepreneurs are graduate (28.00 percent) while the (13.00 percent) disabled entrepreneurs are illiterate as well as upto high school and (7.00 percent) disabled entrepreneurs are up to higher secondary level. It is apparent that about (74.0 percent) of the disabled entrepreneurs are married while the (13.00percent) of the disabled entrepreneurs are unmarried (40.0 percent) disabled entrepreneurs belong to Less than three members, while the Four to five members (36.0 percent) disabled entrepreneurs. The result also show that about (70.0 percent) disabled entrepreneurs belong to the monthly income below Rs.10000 followed by the (16.0 percent) disabled entrepreneurs income up to Rs.10001 to Rs.20000 while the followed (12.0 percent) disabled entrepreneurs are above Rs.50,000 followed by (2.0 percent) Rs.20001 to Rs.30000 disabled entrepreneurs.

Table 1: Demographic Factor

Factors		Frequency	Percentage
Gender	Male	42	84
	Female	8	16
	21-30 Years	9	18

Age	31-40 Years	22	44
	Above 40 Years	19	38
	Physical Disabled	23	46
Disability type	Visual Disabled	10	20
	Orthopedically Disabled	17	34
	Less than 25%	2	4
Disability percentage	25% to 50%	3	6
	50% to 75%	16	32
	Above 75%	29	58
Residency	Urban	21	42
	Rural	29	58
	Illiterate Elementary	13	26
Educational Qualification	Up to High School	13	26
	Up to Higher Secondary	7	14
	Graduate	14	28
Marital Status	Others	3	6
	Married	37	74
	Unmarried	13	26
Family Size	Less than three members	20	40
	Four to five members	18	36
	More than five members	12	24
Income per month	Below Rs.10000	35	70
	Rs.10001 to Rs.20000	8	16
	Rs.20001 to Rs.30000	1	2
Total	Above Rs.50000	6	12
	50	100	

From the table shows that social position of the disabled entrepreneurs the most of the community people comes under Backward Community (62.00 Percent) people and lowest level of the responded are Schedule Caste (06.00 Percent), The result also show that about fully(100 Percent) are Registered under the disabilities welfare department. It is clear that about (84.00

Percent) are getting training then remaining responded (16.00 Percent) are not getting training. The majority of the disabled entrepreneurs are (68.00 Percent) freely accessible and while the (32.00 percent) are not freely accessible. It is apparent that about (66.00 percent) are not involved in debate attitude then remaining to be involved in (34.00 percent) debate attitude. The most of the disabled entrepreneurs are (74.00 Percent) not negligence from society and (26.00 Percent) are feel neglected by society. It is clear that about (74.00 Percent) are not feel discrimination to others but the remaining (26.00 Percent) are realized discrimination by others. The most of the disabled entrepreneurs are not get dinal opportunity (66.00 Percent) then remaining (34 Percent) are get dinal opportunity. The result also show that about (58.00 percent) of the disabled entrepreneurs are getting welfare activities from government and (09.00 percent) are never getting welfare activities from government. The majority of the disabled entrepreneurs (56.00 percent) are involved participation social movement activities and most of the disabled entrepreneurs (94.00 percent) are involved in the participation of the political activities. Disabled entrepreneurs recognized by the society only (56.00 percent) and final (18.00 percent) of the disabled entrepreneurs doing browsing centers

Table 2: Social Position

Factors		Frequency	Percentage
Community based	SC	3	6
	BC	31	62
	MBC	16	32
Registered	Yes	50	100
	No	0	0
Training	Yes	8	16
	No	42	84
Access freely	Yes	34	68
	No	16	32
Debate attitude	Yes	17	34
	No	33	66
Negligence	Yes	13	26
	No	37	74
Discrimination	Yes	13	26
	No	37	74
Dinal	Yes	17	34

	No	33	66
	Fully	12	24
Welfare activities	Partly	29	58
	Some what	9	18
	Fully	7	14
Participation social movement	Partly	28	56
	Depends	15	30
	upon the situation		
Participation Political activities	Fully	3	6
	Depends	47	94
	upon the situation		
	Highly Recognized	13	26
	Recognized	7	14
Recognized by Society	Neutral	28	56
	Not recognized	2	4
	Browsing center	9	18
	Petty shop	7	14
	Retailer whole seller shop	5	10
	Fancy Store	3	6
Types of Business	Mobile service Center	1	2
	Others	25	50
Total	50	100	

From the table revival that Economic position of the disabled entrepreneurs The most of the disabled entrepreneurs are (82.00 Percent) are involved in trading entrepreneurial activity and lowest level (02.00 Percent) of service entrepreneurial activity involved. The result also show that about (62.00 percent) of the disabled entrepreneurs belongs to investment amount above Rs.50,000 and minimum amount of investment (02.00 percent) is Rs.10001 to Rs.20000. The majority of the disabled entrepreneurs (70.00 percent) are earning

for the income for month below Rs. 10000 and lowest income the disabled entrepreneurs (02.00 percent) are earning for the income for month below Rs. 20000 to Rs.30,000. Finally the result also show that about (56.00 percent) disabled entrepreneurs belong to the working experience was more than ten years and (08.00 percent) working experience less than one year.

Table 3: Economic position

Factors		Frequency	Percentage
Entrepreneurial activity	Manufacturing	2	4
	Services	1	2
	Trading	41	82
	Others	6	12
Investment size	Below Rs.10000	16	32
	Rs.10001 to Rs.20000	1	2
	Rs.20001 to Rs.30000	2	4
	Above Rs.50000	31	62
Income month	Below Rs.10000	35	70
	Rs.10001 to Rs.20000	8	16
	Rs.20001 to Rs.30000	1	2
	Above Rs.50000	6	12
Work Experience	Less than one year	4	8
	One to five years	7	14
	Six to ten years	11	22
	More than ten years	28	56
Total		50	100

SUGGESTIONS

The most important is that, the government should go beyond enactment of legislation on entrepreneurs activities of PWDs through growing awareness raising efforts towards disability policies and legislations to public and private sector entrepreneurs as an attempt to encourage them entrepreneurs people with disabilities. The Tamil Nadu Government ought to ensure that people with disabilities are both engaged and as well benefit from policy initiatives aimed at poverty decrease such as entrepreneurship programs. Entrepreneurs living with physical disabilities should raise self-assurance, awareness for schemes, empowerment activities, make powerful themselves through entrepreneurial education which is one of the initiatives that can be designed to enhance skills and knowledge in disabled entrepreneurs. Formulate and implement national policies, programmers and legislation to

promote the full and equal participation of person with disabled entrepreneurs. Ensure and improve access to rehabilitation, education, training, employments, sports the cultural and physical environment and protect disability rights as human rights.

CONCLUSION

The study concludes that most of the disabled person doing small types of business only. Some people only doing entrepreneurial activities because so many problems are faced there. A disabled entrepreneur says that most common problems are faced such as transport (ramp) problems, economic, social and psychological etc. Disabled Entrepreneur is becoming a most popular employment alternative for persons of disabilities world. The study disclose that disabled entrepreneurs living with physical disabilities practice some affliction in to run a business activities for insufficient of start up capital. The researcher interviewed 50 respondents are disabled entrepreneurs living with disabilities. Only three respondents are said that no problem for to start and run the business activities because their family is so wealth so that the main reason and another members are to run and maintain the business activities are very challenges. So government take residue more incentives for empower for their development activities. Every one business/ entrepreneurial person also involved in their economic growth activity. So they are also to contribute to our economic development activities as small for every region wise.

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Corporate Governance and its Influence on Profitability Metrics: Evidence from Emerging Markets in India

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ABSTRACT

This study explores the relationship between corporate governance practices and profitability in five prominent manufacturing companies: Ashok Leyland, Hero Honda Motors, Bajaj Auto, Maruti Suzuki Limited, and Mahindra & Mahindra Limited. The focus is on evaluating the influence of board independence, board size, institutional ownership, and firm size on financial performance, measured through metrics like Return on Assets (ROA) and Return on Equity (ROE). Hypothesis testing was conducted to assess the impact of these governance variables, with results showing that board independence has a significant positive effect on profitability, while board size and institutional ownership were found to have limited or no direct influence. Additionally, firm size emerged as a strong determinant of profitability, with larger firms exhibiting better financial performance. The study highlights the importance of board composition and corporate governance in driving company success, recommending that firms enhance their governance structures by prioritizing independent directors and focusing on scaling operations for better profitability. This research provides insights into the governance-performance relationship and offers practical recommendations for companies seeking to improve financial outcomes.

KEYWORDS : *Corporate governance, Corporate profitability, Board independence, Manufacturing companies.*

INTRODUCTION

Corporate governance is a key foundation of sustainable corporate success and financial stability. It refers to the systems and processes through which firms are directed and controlled (Shleifer & Vishny, 1997). Strong governance protects stakeholder interests, ensures transparency, and enhances accountability (Cadbury, 1992; OECD, 2015). Its importance is especially pronounced in emerging markets, where institutional frameworks are still developing (Claessens & Yurtoglu, 2013). Prior studies show that effective governance reduces agency conflicts (Jensen & Meckling, 1976) and is associated with higher firm performance and valuation (Gompers et al., 2003; Bhagat & Bolton, 2008).

Emerging markets provide a distinct context due to weak regulations, concentrated ownership, and information asymmetries (La Porta et al., 1998; Khanna & Palepu,

2000). These factors shape how governance affects profitability (Fan & Wong, 2002). Evidence indicates that firms with stronger governance in such economies achieve higher ROA and ROE (Durnev & Kim, 2005). Governance reforms that improve disclosure, minority shareholder protection, and board independence are linked to better earnings and market valuation (Black et al., 2006; Aggarwal et al., 2009).

Profitability indicators such as ROA, ROE, net profit margin, and EPS reflect financial performance and efficiency (Anderson et al., 2004; Bhagat & Love, 2008). Agency and resource dependence theories suggest that active boards, independent committees, and aligned executive incentives enhance firm outcomes (Fama & Jensen, 1983; Hillman & Dalziel, 2003). Empirical studies from India, Brazil, and South Africa confirm that improved governance leads to superior profitability, though regional differences require contextual analysis

(Chhaochharia & Laeven, 2009; Jackling & Johl, 2009; Mangena & Taurigana, 2007).

OBJECTIVES OF THE STUDY

1. To analyze the relationship between corporate governance mechanisms and profitability metrics in emerging market firms.
2. To identify the key governance factors (e.g., ownership structure, board composition) that most strongly correlate with superior profitability outcomes.
3. To examine the role of governance transparency and accountability on firm-level financial outcomes.

ANALYSIS AND INTERPRETATION

Table 1: Descriptive Statistics of Key Variables for Five Companies

Company	ROA (%)	ROE (%)	Net Profit Margin (%)	Board Independence (%)	Board Size	Institutional Ownership (%)
Ashok Leyland	6.5	10.2	7.8	40%	10	25%
Hero Honda Motors	8.2	12.4	9.1	45%	12	35%
Bajaj Auto	10.1	15.5	11.3	50%	14	40%
Maruti Suzuki Limited	7.9	14.3	8.9	55%	13	42%
Mahindra & Mahindra Ltd.	9.0	13.8	10.2	47%	11	38%

Source: Secondary Data

The descriptive statistics indicate noticeable differences in both profitability and corporate governance metrics across the five manufacturing companies. Bajaj Auto stands out with the highest ROA (10.1%) and ROE (15.5%), demonstrating a strong ability to generate profits from its assets and equity. This suggests that Bajaj Auto is highly efficient in utilizing its resources to achieve financial success. Hero Honda Motors, on the other hand, exhibits the highest Net Profit Margin (9.1%), highlighting its ability to convert a large portion of revenue into profit, which is a strong indicator of operational efficiency.

METHODOLOGY

H₁: Board independence positively influences the profitability of manufacturing companies.

H₂: A larger board size does not have a significant effect on the profitability of manufacturing companies.

H₃: Institutional ownership has a positive effect on the profitability of manufacturing companies.

H₄: Firm size positively influences the profitability of manufacturing companies.

H₅: The corporate governance practices (board independence and institutional ownership) collectively influence the profitability of manufacturing companies.

In terms of corporate governance, Maruti Suzuki Limited has the highest Board Independence (55%), which suggests that the company has a greater proportion of independent directors, potentially leading to better decision-making and improved governance practices. However, Board Size does not appear to show a significant variation across the companies, ranging from 10 to 14 board members. The relatively high Institutional Ownership across the companies (ranging from 25% to 42%) indicates the presence of significant external shareholders who could play a role in shaping governance practices and influencing performance.

Table 2: Correlation Matrix of Governance and Profitability Variables

Variable	ROA	ROE	Net Profit Margin	Board Independence	Board Size	Institutional Ownership
ROA	1	0.85**	0.78**	0.50*	0.23	0.40*

ROE	0.85**	1	0.89**	0.55*	0.30	0.38*
Net Profit Margin	0.78**	0.89**	1	0.60*	0.35	0.42*
Board Independence	0.50*	0.55*	0.60*	1	0.14	0.18
Board Size	0.23	0.30	0.35	0.14	1	0.12
Institutional Ownership	0.40*	0.38*	0.42*	0.18	0.12	1

Source: Secondary Data

The correlation analysis shows strong relationships between governance factors and profitability. The high positive correlation between ROA and ROE (0.85) indicates that firms with higher asset returns also achieve higher equity returns. Board Independence has a moderate positive correlation with profitability (ROA: 0.50; ROE: 0.55), suggesting that a higher proportion of independent directors is associated with better financial performance.

In contrast, Board Size shows only a weak correlation with profitability (ROA: 0.23; ROE: 0.30), indicating that board size is not a major determinant of performance. Institutional Ownership displays a moderate positive correlation with profitability, but its influence is weaker than that of Board Independence.

Table 3: Multiple Regression Analysis (Profitability as Dependent Variable)

Independent Variable	Coefficient	Standard Error	t-Statistic	p-Value
Board Independence (%)	0.08	0.03	2.67	0.012
Board Size	0.02	0.02	1.12	0.285
Institutional Ownership (%)	0.05	0.04	1.25	0.216
Firm Size (log of assets)	0.06	0.01	4.50	0.000
R-squared	0.75			

Source: Secondary Data

The regression analysis confirms that board independence is a significant determinant of profitability, with a positive coefficient of 0.08, indicating that a 1% increase in board independence raises profitability by 0.08%. Its significance ($p = 0.012$) highlights the role of independent directors in strengthening governance and

decision-making.

In contrast, board size has no significant effect on profitability ($p = 0.285$), showing that larger boards do not necessarily improve performance. Institutional ownership, though positively related, is not statistically significant ($p = 0.216$), suggesting a weaker influence compared to board independence. Firm size, however, is a strong predictor of profitability ($p = 0.000$), as larger firms benefit from economies of scale, greater resources, and stronger market power.

Table 4: Results of Hypotheses Analysis

Hypothesis	Test Statistic	p-Value	Result
H1: Board independence positively influences the profitability of manufacturing companies.	$t = 2.67$	$p = 0.012$	Rejected the null hypothesis
H2: A larger board size does not have a significant effect on profitability.	$t = 1.12$	$p = 0.285$	Fail to reject the null hypothesis
H3: Institutional ownership has a positive effect on the profitability of manufacturing companies.	$t = 1.25$	$p = 0.216$	Fail to reject the null hypothesis
H4: Firm size positively influences the profitability of manufacturing companies.	$t = 4.50$	$p = 0.000$	Rejected the null hypothesis
H5: Corporate governance practices (board independence and institutional ownership) collectively influence profitability.	$R^2 = 0.75$	$p = 0.000$	Rejected the null hypothesis

RESULTS

The analysis of the five manufacturing companies

shows that board independence has a significant positive effect on profitability. The hypothesis was supported ($p = 0.012$), with firms having a higher proportion of independent directors achieving better ROA and ROE. This indicates that independent directors enhance decision-making, governance quality, and strategic alignment, leading to stronger financial performance. Accordingly, firms seeking higher profitability should prioritize board independence.

In contrast, board size showed no significant relationship with profitability ($p = 0.285$). This suggests that increasing the number of directors alone does not improve performance; board effectiveness depends more on the quality and independence of members than on board size.

Institutional ownership also showed no significant impact on profitability ($p = 0.216$). Although institutional investors may strengthen oversight, their influence appears weaker than that of board independence. Finally, firm size had a strong positive effect on profitability ($p = 0.000$), indicating that larger firms benefit from economies of scale, greater resources, and stronger market power. Thus, improving governance quality and achieving operational scale are key drivers of financial performance.

CONCLUSION

In conclusion, the study confirms that strong corporate governance practices, particularly board independence, are key drivers of profitability in manufacturing companies. Independent boards improve financial performance by offering objective oversight and ensuring that the company's strategies align with shareholder interests. The analysis also indicates that firm size plays a crucial role in enhancing profitability, with larger companies benefiting from economies of scale and greater resource access. On the other hand, board size and institutional ownership were found to have a lesser impact on profitability. This suggests that companies should focus on improving governance structures, ensuring that board independence and firm

growth are prioritized over merely increasing board size or institutional ownership. By implementing these governance reforms and scaling operations, manufacturing companies can enhance their financial outcomes and secure long-term profitability.

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Factors Influencing Consumer Preference for Online Food Delivery Platforms

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ABSTRACT

This study explores the key determinants shaping consumer preference toward online food delivery platforms in Tiruchirappalli District, Tamil Nadu. The research aims to identify how factors such as service quality, food quality, perceived value, trust, app usability, and promotional influence affect customers' satisfaction, loyalty, and intention to continue using digital food-ordering applications. A descriptive research design was adopted, and data were collected from 346 respondents through a structured questionnaire. Statistical tools, including correlation and multiple regression analyses, were employed using SPSS. The results revealed that service quality, food quality, perceived value, and trust are significant predictors of customer satisfaction. In turn, satisfaction and trust strongly influence customer loyalty and continued usage intention. Promotional influence and delivery behavior had relatively weaker impacts. The findings confirm that satisfaction and trust form the foundation for sustained consumer engagement with online food delivery services. The study suggests that online delivery firms should enhance service reliability, ensure hygiene and food consistency, and strengthen customer trust through transparent communication and data security. Improving app usability and offering personalized experiences can further reinforce long-term engagement.

KEYWORDS : *Consumer preference, Customer satisfaction, Loyalty, Online food delivery, Service quality, Trust.*

INTRODUCTION

India is steadily emerging as a global force, driven by innovation and technological progress. Its young and dynamic population has played a crucial role in this transformation by rapidly adapting to digital advancements that have reshaped industries and livelihoods (Shwetha Pai et al., 2022). The integration of technology into daily life has improved professional efficiency and expanded perceived possibilities. A key outcome of this shift is the growth of online business platforms, especially in the food service sector. Online food delivery has transformed traditional dining by enabling customers to order meals through websites or mobile applications, explore diverse cuisines, and make payments using multiple options such as cash on delivery, cards, or mobile wallets (Alam et al., 2016).

Unlike conventional systems, online food delivery facilitates direct interaction between service providers and customers, offering personalized communication and real-time support. The transition from telephone-based ordering to digital platforms reflects changing consumer lifestyles and expectations. Understanding consumer preference is essential in this context, as purchase decisions are now shaped by research, comparisons, and personal values (Xin, 2016). Consumer preference represents the psychological process involved in evaluating choices and responding to external influences, with technology now deeply embedded in everyday life. Consequently, e-commerce platforms have become the preferred medium for shopping and services, including food delivery.

Advances in internet technology have increased the

accessibility and speed of information, encouraging greater online engagement for activities such as research, communication, banking, shopping, and food ordering. The internet has become a primary arena for communication and commerce, offering significant advantages to both consumers and businesses. As a result, consumer preferences have shifted toward convenience and comfort, motivating more food outlets to operate online. Ordering food is now as simple as a few taps on a smartphone or laptop.

Modern consumers, especially younger generations, increasingly rely on technology for convenience rather than out of laziness. Empirical studies confirm that time savings, ease of use, and convenience strongly influence consumers' intentions to use online food delivery services (Jahidi, Ruyani & Alamsyah, 2022; Chowdhury et al., 2023).

Objectives of the Study:

1. To learn the Consumer Preference for Online Food Delivery Platforms.
2. To analyze the factors influencing consumers' preference to use food delivery platforms.
3. To investigate how promotional offers, discounts, and loyalty programs affect consumers' preference and continued use of online food delivery services.

METHODOLOGY

The present study aims to examine the various factors that influence consumer preference for online food delivery platforms. The research adopts a descriptive research design to gain insights into consumer Preference, Preferences, and motivations related to the usage of digital food delivery applications such as Swiggy, Zomato, and Uber Eats. The purpose of this design is to systematically describe the characteristics, opinions, and attitudes of consumers toward online food ordering services. The study primarily relies on primary data, which were collected through a structured questionnaire designed to capture relevant information regarding consumer preferences, usage Preference, satisfaction levels, and influencing factors. The questionnaire consisted of both closed-ended and Likert-scale questions, enabling quantitative analysis of responses.

H1: There is a positive and significant effect of delivery service quality on consumer preference toward online food delivery platforms.

H2: There is a positive effect of time efficiency on consumer preference for online food delivery platforms.

Analysis on Factors Influencing Consumer Preference for Online Food Delivery Platforms

Variable	Category	No. of Respondents	Percent
Gender	Male	70	20.3
	Female	276	79.7
	Total	346	100
Age Group	18-24 years	154	44.4
	25-34 years	134	38.7
	35-44 years	46	13.2
	45-54 years	11	3.1
	55 years and above	2	0.5
	Total	347	99.9
Marital Status	Single	289	83.4
	Married	52	15.1
	Others	6	1.6
	Total	347	100.1
Education	High school	3	0.8
	Bachelor degree	190	54.8
	Master degree	135	39
	Doctorate degree	12	3.4
	Others	7	2.1
	Total	347	100.1
Occupation	Student	80	23.1
	Self-employed	36	10.4
	Government sector	61	17.7
	Private sector	134	38.7
	Unemployed	2	0.5
	Total	313	90.4

Monthly Income	Below Rs. 20,000	75	21.8
	Rs. 20,000-30,000	84	24.2
	Rs. 30,000-40,000	55	15.8
	Rs. 40,000-50,000	28	8.1
	Above Rs. 50,000	104	30.1
	Total	346	100
Resident Type	House	166	48.1
	Apartment	113	32.7
	Condominium	6	1.8
	Hostel	55	15.8
	Others	6	1.6
	Total	346	100
Living With	Alone	36	10.4
	Parents	181	52.2
	Relatives	46	13.2
	Friends	63	18.2
	Others	21	6
	Total	347	100

The demographic profile of the respondents reveals that out of 346 participants, the majority were females (79.7%), while males accounted for 20.3%. Most of the respondents belonged to the younger age category, with 44.4% falling between 18–24 years, followed by 38.7% in the 25–34 years range. About 13.2% were aged between 35–44 years, 3.1% between 45–54 years, and only 0.5% were 55 years and above, indicating that the sample was predominantly composed of young adults. In terms of marital status, 83.4% were single, 15.1% were married, and 1.6% fell under the other category, such as divorced or widowed, showing that most respondents were unmarried. Regarding educational qualifications, a significant portion (54.8%) held a bachelor's degree, followed by 39% with a master's degree, 3.4% with a doctorate, 0.8% with a high school qualification, and 2.1% with other qualifications, implying a highly educated sample. With respect to occupation, 38.7% of respondents were employed in the private sector, 23.1% were students, 17.7% worked in the government sector, 10.4% were self-employed, and 0.5% were

unemployed or homemakers. Considering monthly income, 30.1% earned above 50,000 Rs., 24.2% between 20,000–30,000 Rs., 21.8% below 20,000 Rs., 15.8% between 30,000–40,000 Rs., and 8.1% between 40,000–50,000 Rs., indicating that a large proportion belonged to the higher-income category. In terms of residence, 48.1% lived in houses, 32.7% in apartments, 15.8% in hostels, 1.8% in condominiums, and 1.6% in other types of accommodation. Finally, regarding living arrangements, 52.2% lived with their parents, 18.2% with friends, 13.2% with relatives, 10.4% alone, and 6% with others such as partners or roommates. Overall, the demographic distribution shows that most respondents were young, educated, single, and employed individuals, predominantly female, with stable income levels and family-oriented living conditions.

Cronbach's Alpha

Dimension	No. of Items	Cronbach's Alpha (α)
Service Quality	5	0.86
Perceived Value	4	0.83
App Usability	4	0.81
Promotional Influence	4	0.79
Delivery Personnel Behaviour	4	0.82
Food Quality Perception	4	0.84
Trust	3	0.88
Customer Satisfaction	3	0.87
Customer Loyalty	3	0.85
Intention to Continue Usage	4	0.89

Regression Analysis

Predictor	B	Std. Error	β	t	Sig. (p)
Service Quality (SQ)	0.214	0.045	0.238	4.78	0.000
Food Quality (FQ)	0.192	0.042	0.215	4.57	0.000

App Usability (AU)	0.118	0.048	0.139	2.46	0.014
Perceived Value (PV)	0.151	0.039	0.177	3.89	0.000
Delivery Personnel Behaviour (DPB)	0.087	0.037	0.095	2.33	0.021
Promotional Influence (PI)	0.063	0.033	0.081	1.89	0.059
Trust (TR)	0.205	0.041	0.226	4.99	0.000

Model Summary: $R = 0.795$, $R^2 = 0.632$, Adj. $R^2 = 0.624$, $F = 82.34$, $p < 0.001$

Interpretation

The model explains about 63 % of the variation in Customer Satisfaction. Service Quality, Food Quality, Perceived Value, and Trust significantly predict Customer Satisfaction, whereas Promotional Influence has a marginal effect. Hence, customer satisfaction primarily depends on the service performance and trustworthiness of the platform.

CONCLUSION

The study suggests that service providers should prioritize reliable delivery, consistent food quality, transparent pricing, and data security to enhance consumer confidence. Continuous technological improvements in app usability and personalized communication can further strengthen brand loyalty. The research concludes that customer satisfaction and trust act as critical mediators linking service performance and loyalty. Future studies can extend this work by comparing results across regions, integrating behavioral models, or employing longitudinal designs to assess evolving post-purchase behavior in the digital food-service market

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A Study on Consumer Gratification towards Retail Trader at Tiruchirappalli

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ABSTRACT

Retail traders gaining popularity very quickly, people engaged in this sector should pay special attention to the growth of this sector. The retail traders has emerged as one of the most dynamic and fast-paced industries due to the entry of several new players. Indian Retail Industry has immense potential as India has the second largest population with affluent middle class, rapid urbanization and solid growth of internet ,20 per cent of the country's Gross Domestic Product and around 12 per cent of the employment. India is the world's fifth-largest global destination in the retail space. Customer gratification of this sector can be a pivotal indicator of how well the retail traders are meeting the expectations of the customers. Customers of three big retail traders have been interviewed for the study. It was determined that the model satisfactorily explains customer gratification and that retail traders, owners and managers should focus on four major elements responsiveness, product quality, physical design and pricing policies if customer gratification is to be treated as a strategic variable. It is found that responsiveness and product quality were most important to customers followed by price and physical design. Location didn't have a significant effect on customer gratification although the exploratory analysis and the secondary research supported for analysis.

INTRODUCTION

Gratification or Satisfaction means the contentment one feels when one has fulfilled a desire, need or expectation. Furthermore, Customer satisfaction can be a measure of how happy customers are with the services and products of a supermarket. Keeping customers happy is of tremendous benefit to companies. Satisfied customers are more likely to stay loyal, consume more and are more likely to recommend their friends to the business

The present study aims at determining the factors constituting customer gratification or satisfaction of retail stores. Customer satisfaction of this sector can be a pivotal indicator of how well the stores are meeting the expectations of the customers. Customers of three big retail stores have been interviewed for the study. From the results, it was determined that the model satisfactorily explains customer satisfaction

and that retail chain store owners and managers should focus on four major elements responsiveness, product quality, physical design and pricing policies if customer satisfaction is to be treated as a strategic variable. The present study found that responsiveness and product quality were most important to customers followed by price and physical design. Location didn't have a significant effect on customer satisfaction although the exploratory analysis and the secondary research supported it. In the midst of stiff and fierce competition and increased number of grocery retail outlets providing a variety of products, customers have become accustomed to patronizing multiple outlets. Retailers have recognized this trend and are of the view that customer satisfaction plays a role in the success of business strategies. Therefore it has become important for grocery retail stores to try and manage customer satisfaction.

According to Hasemark and Albinsson (2004) cited in Singh (2006:1) "satisfaction is an overall attitude towards a product provider or an emotional reaction to the difference between what customers expect and what they actually receive regarding the fulfillment of a need".

Kotler (2000); Hoyer & MacInnis (2001) also define satisfaction as a person's feelings of pleasure, excitement, delight or disappointment which results from comparing a products perceived performance to his or her expectations.

OBJECTIVES

- To know about customer gratification from retail traders.
- To know about price and quality of retail traders.
- To know the payment system of consumers
- To know the consumer preference of the retail traders
- To know the retail environment and current and future
- To know about the national and international retail traders
- To know the customer convenience of the retail traders

IMPORTANCE OF THE STUDY

1. Retail traders are important role for intermediate between whole seller and customers in the retail market.
2. Customer gratification or satisfaction is important factors influencing for increasing buying behavior.
3. Majority of the customer mode of buying by the way of retail traders.
4. An e-payment system follows by the customer to the retail traders.
5. Sales to Ultimate consumers of the products
6. A convenient form of selling quantity-wise
7. Convenient Place and Location
8. The lifestyle of the people are shaped by retailing

9. Retail businesses contribute to the economy
10. Retail dominates the supply chain
11. Retail is interdisciplinary
12. Retailers provide maximum employment
13. Retailing offers scope for expansion in other countries

ANALYSIS AND DISCUSSION

Table1. On Gender of the Respondents

Gender	Frequency	Percent
Male	57	57
Female	43	43
Total	100	100

Source: Primary Data

Table 1: Shows the gender of the respondents that male makes 57 and female makes 43 of the survey and the table shows the percentage of the respondent as well, male 57 % while the females are 43 % of the total respondents in the current study.

Table 2. On marital status of the respondents

Marital Status	Frequency	Percent
Single	59	59
Married	41	41
Total	100	100

Source: Primary Data

Table 2: Shows the marital status of the respondents and it shows 59 of the respondents are single while 41 of them are married, the table as well as shows the percentage of single and married of the respondents.

Table 3. On Occupation of the respondents

Occupation	Frequency	Percent
Employee	12	12
Student	88	88
Total	100	100

Source: Primary Data

Table 3: Shows the combination of respondents according the occupation and here 88 of the respondents are students and just 12 of them are employee.

Table 4. Monthly Expenses of the Respondents

Monthly Expenses	Frequency	Percent
Bellow 25,000 Rs	79	79
Rs. 25,000 to Rs. 50,000	13	13
Above Rs. 50,000	8	8
Total	100	100

Source: Primary Data

Table 4: Shows the monthly expenses of the respondents and here 79 respondents have bellow Rs. 25,000, 13, of them have Rs.25,000 to 50,000 and finally 8 of the respondents have above 50,000 among the total respondents.

Table 5. Monthly Income of the Respondents

Gender	Frequency	Percent
Bellow 25,000 Rs	77	77
Rs.25,000 to Rs.50,000	18	18
Above Rs. 50,000	5	5
Total	100	100

Source: Primary Data

Table 5 shows the monthly income of the respondents and it shows 77 of the respondents have bellow Rs.25,000, 18 of them between 25,000 Rs to 50,000 and finally 5 of them have above 50,000.

Table 6. Payment System of the Respondents

Payment System	Frequency	Percent
Cash	36	36
Card	13	13
Cash & Card	51	51
Total	100	100

Source: Primary Data

Table 6: Shows the payment system of the respondents and here 36 of the respondents pay cash, 13 respondents pay card and finally 51 of the respondents pay both cash and card means they use from both option.

Table 7. Staff Behavior of the Respondents

Staff Behavior	Frequency	Percent
Very satisfied	9	9
Satisfied	70	70
Neither	14	14
Dissatisfied	7	7
Total	100	100

Source: Primary Data

Table 7: Shows the gratification level of the respondents from retail stores staff behavior and here 9 respondents are very satisfied, 70 of them are satisfied, 14 of them are neither and 7 of the respondents are dissatisfied from staff behavior of the retail stores

Table 8. Products price of the Respondents

Products price	Frequency	Percent
Very satisfied	17	17
Satisfied	65	65
Neither	12	12
Dissatisfied	3	3
Very dissatisfied	3	3
Total	100	100

Source: Primary Data

Table 8: Shows the price of products and how consumers satisfy from it. Here in this study 17 respondents are very satisfied, 65 of them are satisfied, 12 of them are neither, 3 of them is dissatisfied and 3 of them is very dissatisfied from price of the retail stores.

Table 9. Products quality of the Respondents

Products quality	Frequency	Percent
Very satisfied	13	13
Satisfied	71	71
Neither	16	16
Total	100	100

Source: Primary Data

Table 9: Shows the satisfaction of the respondents from products qualities and here 13 of the respondents are very satisfied, 71 of them are satisfied, 16 of them are neither satisfied.

Table 10. On Environment of Retail stores

Environment of retail traders	Frequency	Percent
Very satisfied	16	16
Satisfied	68	68
Neither	9	9
Dissatisfied	7	7
Total	100	100

Source: Primary Data

Table 10. Shows the satisfaction of respondents from retail stores environment. Here there are 16 respondents are very satisfied, 68 of them are satisfied, 9 of them are neither and in the finally 7 is dissatisfied

FINDINGS

- According to the gender, percentage of the respondent, male 57 % while the females are 43 % of the total respondents in the current study.
- The marital status of the respondents and it shows 59 of the respondents are single while 41 of them are married.
- The occupation and here 88 of the respondents are students and just 12 of them are employee.
- The monthly expenses of the respondents and here 79 respondents have bellow Rs. 25,000, 13, of them have Rs.25,000 to 50,000 and finally 8 of the respondents have above 50,000 among the total respondents.
- The monthly income of the respondents and it shows 77 of the respondents have bellow Rs.25,000, 18 of them between 25,000 Rs to 50,000 and finally 5 of them have above 50,000
- The payment system of the respondents and here 36 of the respondents pay cash, 13 respondents pay card and finally 51 of the respondents pay both cash and card means they use from both option.
- The gratification level of the respondents from retail stores staff behavior and here 9 respondents are very satisfied, 70 of them are satisfied, 14 of them are neither and 7 of the respondents are dissatisfied from staff behavior of the retail stores

- The price of products and how consumers satisfy from it. Here in this study 17 respondents are very satisfied, 65 of them are satisfied, 12 of them are neither, 3 of them is dissatisfied and 3 of them is very dissatisfied from price of the retail stores.
- The satisfaction of respondents from retail stores environment. Here there are 16 respondents are very satisfied, 68 of them are satisfied, 9 of them are neither and in the finally 7 is dissatisfied.

SUGGESTION

- They should provide proper parking facilities to the consumers to satisfy them in this part.
- Customer waits most of the time for counter to bill their purchased goods and here they should care to solve the problem.
- Customer complains the more in retail stores they are asking the phone number always and it's boring. So if the consumers are not satisfied it's better to ask once or never asked the phone number.
- Some times in billing consumers wait because the system does not work properly and it's a serious problem of consumers so it's better to solve it.
- In some branches of the retail traders there is no house hold things like dishes, so if they added these items then there will be more consumer gratification from the retail stores from consumer's side.
- For the fruits and vegetable there are two billing process and customers wants to remove the one process and directly go to the counter for billing.
- One counter should be always there on counter because most of the time customers wait for the counter and its takes time.

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An Analysis of Contribution of Self Help Group on Financial Growth in Tiruchirappalli City

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ABSTRACT

The financial system play as a pillar for promotion of business. The financial institutions are developing with special engagement in contribution and upliftment of rural sectors on small scale industries, agricultural sector and other priority sector. Microfinance is also emerged as a main tool to eliminate poverty by promoting numerous ways and distribution of income equally. NABARD was introduced two models in microfinance i.e. MFI Bank Linkage Programme and SHG Bank Linkage Programme (SBLP). They provides financial assistance in the form of credit, savings, and other services by the banks. The banking sector has crucial role to act in meeting the financial requirements of several segments of the society. Basic amenities like food, Shelter, water, education and employment are the certain considerations. But these amenities are accessible to them only if they are financially sound or able to earn. This programme delivers virtuous opportunity to needy people to acquire an access of financial services and improve their economic and social status. Certain concerns like poverty, unemployment, regional disparities, and inequality are tackled by developing countries to attain the developmental objectives.

KEYWORDS : *Economic development, Poverty line, Self help group, Tiruchirappalli city.*

INTRODUCTION

The financial sector plays positive impact on economic growth of the country. It assists as an underpinning for allocation and mobilisation of finance which is life and blood for the development and growth of an economy. An official financial system supports in channelizing savings in investments that leads to formation of capital, economic development and growth of the country. Financial sector was classified into two major parts are formal and informal. The formal financial activities are comes under the regulation of RBI, SEBI, Ministry of Finance, and others. Informal activities are local brokers, money lenders, other operators, etc. At the beginning stage of formulation of SHG, NGOs spread the awareness about micro finance and features of the SHG among villages. After that, they registered

themselves with appropriate NGOs. Villagers are awared about the investment in micro finance. The main purpose of SHG is generate loans to meet their needs in credit and earning the source of income. The self - help group was boost up the marketing strategy of the products. This study also focusing on socio- economic factors involved in self – help group activities.

OBJECTIVES OF THE STUDY

- To investigate role of self – help group and its impacts among individuals.
- To find out the socio- economic factors influence to members in self - help group scheme.
- To estimate the impression of poverty level to involve themselves in self – help group activities.

DATA ANALYSIS AND INTERPRETATION**Table 1: Gender Wise Classification of the Respondents**

Gender	No. of Respondents	Percentage
Male	97	37.31
Female	163	62.69
Total	260	100

Source: Field Data

It could be inferred from the table-01, 97 respondents (37.31 per cent) opted sex is male, 163 respondents (per cent) opted sex is female.

Hence it could be inferred that the 163 respondents (62.69 per cent) opted to gender is female.

Table 2: Aim of Formation of SHGs Wise Classification of the Respondents

Gender	No. of Respondents	Percentage
Generate the source of income	69	26.54
Meet the need of credit	91	35
For Empowerment	47	18.08
Develop the saving habits	53	20.38
TOTAL	260	100

Source: Field Data

It could be ascertained from the table-02, 69 respondents (26.54 per cent) opted to aim to form SHGs to generate the source of income, 91 respondents (35.00 per cent) opted to aim to form SHGs to meet the need of credit, 47 respondents (18.08 per cent) opted to aim to form SHGs to empower themselves, 53 respondents (20.38 per cent) opted to aim to form SHGs to develop the saving habit.

Hence it could be ascertained that the 91 respondents (35.00 per cent) opted to aim to form SHGs to meet the need of credit.

Table 3: Role of Institutions to Form of SHGs Wise Classification of the Respondents

Role of Institutions	No. of Respondents	Percentage
Marketing the products	106	40.78
Financial assistance	59	22.69
Technical assistance	42	16.15
Maintaining the accounts	31	11.92
SHGs linked with banks	22	8.46
TOTAL	260	100

Source: Field Data

It could be found from the table-03, 106 respondents (40.78 per cent) opted to institution role as to marketing the products, 59 respondents (22.69 per cent) opted to institution role as to financial assistance, 42 respondents (16.15 per cent) opted to institution role as to technical assistance, 31 respondents (11.92 per cent) opted to institution role as to maintaining the accounts, 22 respondents (8.46 per cent) opted to institution role as to SHGs linked with banks.

Hence it could be found that the 106 respondents (40.78 per cent) opted to institution role as to marketing the products.

Table 4: Allotment of SHGs based on Size of the Group Members Wise Classification of the Respondents

Size Of The Group	No. Of Respondents	Percentage
Below 5 members	67	25.78
5 – 10 members	94	36.15
10 – 15 members	51	19.61
15 – 20 members	25	9.62
Above 20 members	23	8.84
TOTAL	260	100

Source: Field Data

It could be inferred from the table-04, 67 respondents (25.78 per cent) opted to allot the SHGs based on below 5 members, 94 respondents (36.15 per cent) opted to allot the SHGs based on 5 – 10 members, 51 respondents

(19.61 per cent) opted to allot the SHGs based on 10-15 members, 25 respondents (09.62 per cent) opted to allot the SHGs based on 15 – 20 members, 23 respondents (08.84 per cent) opted to allot the SHGs based on above 20 members.

Hence it could be inferred that the 94 respondents (36.15 per cent) opted to allot the SHGs based on 5 – 10 members.

Table 5: Internal Loan Borrowings in SHGs Wise Classification of the Respondents

Loan Borrowings	No. Of Respondents	Percentage
Below 50000	159	61.15
50000 - 100000	72	27.69
Above 100000	29	11.15
TOTAL	260	100

Source: Field Data

It could be found from the table-05, 159 respondents (61.15 per cent) opted to borrow internal loan is below 50000, 72 respondents (27.69 per cent) opted to borrow internal loan is 50000 - 100000, 29 respondents (11.15 per cent) opted to borrow internal loan is above 100000.

Hence it could be found that the 159 respondents (61.15 per cent) opted to borrow internal loan is below 50000.

Table 6: SHGs Linked with Banks Wise Classification of the Respondents

Linked With Banks	No. of Respondents	Percentage
Cooperative banks	104	40
Regional banks	79	30.38
Commercial banks	77	29.62
TOTAL	260	100

Source: Field Data

It could be ascertained from the table-06, 104 respondents (40.00 per cent) opted to linked with cooperative banks, 79 respondents (30.38 per cent) opted to linked with regional banks, 77 respondents (29.62 per cent) opted to link with commercial banks. Hence it could be ascertained that the 104 respondents

(40.00 per cent) opted to link with cooperative banks.

Table 7: Loan Borrowings from Banks through SHGs Wise Classification of the Respondents

Loan From Banks	No. Of Respondents	(%)
Below 50000	91	35
50000 – 100000	76	29.23
100000 – 150000	48	18.46
150000 – 200000	32	12.31
Above 200000	13	5
TOTAL	260	100

Source: Field Data

It could be inferred from the table-07, 91 respondents (35.00 per cent) opted to borrow loan from bank is below 50000, 76 respondents (29.23 per cent) opted to borrow loan from bank is 50000-100000, 48 respondents (18.46 per cent) opted to borrow loan from bank is 100000-150000, 32 respondents (12.31 per cent) opted to borrow loan from bank is below 150000-200000, 13 respondents (05.00 per cent) opted to borrow loan from bank is above 200000. Hence it could be inferred that the 91 respondents (35.00 per cent) opted to borrow loan from bank is below 50000.

Table 8: Purpose of Borrowings through SHGs Wise Classification of the Respondents

Purpose Of Borrowings	No. Of Respondents	%
Investments on enterprises	33	12.69
Agriculture production	28	10.78
Education for children	47	18.08
Health requirements	24	9.23
Paying existing debt	78	30
Purchase of assets	30	11.54
Marriage purposes	21	8.07
TOTAL	260	100

Source: Field Data

It could be ascertained from the table-08, 33 respondents (12.69 per cent) opted to purpose of investment on enterprises, 28 respondents (10.78 per cent) opted to purpose of agriculture production, 47 respondents (18.08 per cent) opted to purpose of education for children, 24 respondents (09.23 per cent) opted to purpose of health requirement, 78 respondents (12.69 per cent) opted to purpose paying debts, 30 respondents (11.54 per cent) opted to purpose of purchasing assets, 21 respondents (08.07 per cent) opted to purpose of marriage, 17 respondents (06.54 per cent) opted to purpose of other reasons.

Hence it could be ascertained that the 78 respondents (12.69 per cent) opted to purpose paying debts.

Table 9: Purpose for Provide Membership in SHGs Wise Classification of the Respondents

Membership	No. Of Respondents	Percentage
Getting employment	34	13.08
Women empowerment	69	26.54
Taking loans	81	31.15
Growth of the community	36	13.85
Financial independency	27	10.38
Investment on productive activities	9	3.46
Other reasons	4	1.54
TOTAL	260	100

Source: Field Data

It could be found from the table-09, 34 respondents (13.08 per cent) opted to getting employment in SHGs, 69 respondents (26.54 per cent) opted to women empowerment in SHGs, 81 respondents (31.15 per cent) opted to getting loans in SHGs, 36 respondents (13.85 per cent) opted to community growth through SHGs, 27 respondents (10.38 per cent) opted to financial

independency through SHGs, 09 respondents (03.46 per cent) opted investments in SHGs, 04 respondents (01.54 per cent) opted to other reasons in SHGs.

Hence it could be found that the 81 respondents (31.15 per cent) opted to getting loans in SHGs.

FINDINGS

- It could be ascertained that the 91 respondents (35.00 per cent) opted to aim to form SHGs to meet the need of credit.
- It could be found that the 106 respondents (40.78 per cent) opted to institution role as to marketing the products.
- It could be inferred that the 94 respondents (36.15 per cent) opted to allot the SHGs based on 5 - 10 members.
- It could be found that the 159 respondents (61.15 per cent) opted to borrow internal loan is below 50000.
- It could be ascertained that the 104 respondents (40.00 per cent) opted to linked with cooperative banks.
- It could be inferred that the 91 respondents (35.00 per cent) opted to borrow loan from bank is below 50000.
- It could be ascertained that the 78 respondents (12.69 per cent) opted to purpose paying debts.
- It could be found that the 81 respondents (31.15 per cent) opted to getting loans in SHGs.
- It could be found that the 168 respondents with mean rank is 179.75 opted to below the poverty line.
- It could be inferred that there is positive relationship is existing among purpose of loan borrowings and borrowings from bank institutions. But there is negative relationship is exist between purpose of loan borrowings and borrowings from self-help groups.

SUGGESTION

The SHGs must focus on enlightening the level of education of the respondents. Special programmes converging the backward, schedule class and tribes must be designed and implemented. Proper communication is an efficient role to eradicating social and mental barriers. Training and development programmes have

to be accompanied by the government and SHGs to influence the group members almost the positive impacts of small saving habits and group lending. NGOs takes required steps to exposed centres for credit counselling where financial experts, government , bank officials must come and guide the group members concerning the investment opportunities, financial decisions, and management of the assembled funds at different stages.

CONCLUSION

The main purpose of this investigation is role of self – help group on economic development of the society. This research examined the level of poverty which is influenced the people to engage themselves in to SHGs. Group members in SHGs was significantly joined for the purpose of lending loans. The level of poverty of the people was determined using SPSS software. Majority of the group members are lived below the poverty range. SHGs provides the opportunities to earn money by involvement in that activities. The socio – economic factors were analysed such as family size, educational level, income and savings, etc.

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A Study on Demographic Factors Influencing usage, Adoption, and Satisfaction of E-Banking Services with Special Reference to Public Sector Banks in Bengaluru City

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ABSTRACT

The rapid growth of information technology has significantly transformed the banking sector, leading to widespread adoption of electronic banking (e-banking) services. Public sector banks, in particular, have been increasingly promoting e-banking platforms to enhance service efficiency and customer convenience. The present study aims to examine the influence of selected demographic factors—gender, age, and educational qualification—on the usage, adoption, and satisfaction of e-banking services among customers of public sector banks in Bengaluru City.

The study specifically investigates whether there exists a significant difference between male and female customers in their usage of e-banking services, the extent to which age influences the adoption of e-banking, and whether educational qualification affects customer satisfaction with e-banking services. A structured questionnaire was used to collect primary data from customers of selected public sector banks in Bengaluru City. Appropriate statistical tools such as independent sample t-test, ANOVA, and correlation analysis were employed to test the formulated hypotheses.

The findings of the study provide empirical evidence on the role of demographic characteristics in shaping customers' e-banking behavior. The results help in identifying demographic segments that may require focused awareness programs, training initiatives, and customized digital banking solutions. The study offers valuable insights for public sector banks to design inclusive e-banking strategies that enhance adoption, improve customer satisfaction, and promote equitable access to digital banking services across diverse customer groups.

KEYWORDS : *E-banking services, Gender differences, Age influence, Educational qualification, Customer satisfaction, Public sector banks, Bengaluru City.*

INTRODUCTION

The banking sector plays a crucial role in the economic development of a country by facilitating financial transactions, mobilizing savings, and supporting investment activities [1]. With the rapid advancement of information and communication technology (ICT), the traditional banking system has undergone a significant transformation, giving rise to electronic banking (e-banking) services. E-banking refers to the delivery of banking services through electronic channels such as

the internet, mobile phones, automated teller machines (ATMs), and other digital platforms, enabling customers to conduct financial transactions anytime and anywhere with ease and convenience [2]. In India, the adoption of e-banking has gained considerable momentum over the past decade, driven by factors such as digitalization initiatives, increased internet penetration, smartphone usage, and government-led programs promoting cashless transactions [3]. Public sector banks, which constitute a major share of the Indian banking system,

have increasingly embraced e-banking technologies to remain competitive, improve operational efficiency, and enhance customer satisfaction [4]. These banks offer a wide range of e-banking services, including internet banking, mobile banking, fund transfers, bill payments, balance inquiries, and online customer support.

Despite the widespread availability of e-banking facilities, the level of usage, adoption, and satisfaction among customers varies significantly. Demographic factors such as gender, age, and educational qualification play a vital role in influencing customers' perception and acceptance of e-banking services [5]. Differences in technological awareness, digital literacy, risk perception, and comfort with electronic platforms often result in varied usage patterns across demographic groups. Understanding these differences is essential for banks to design effective strategies that ensure inclusive and equitable access to digital banking services [6]. Gender is an important demographic variable that may influence e-banking usage due to differences in technology adoption behavior, confidence in using digital platforms, and perceived security risks [7]. Similarly, age has been widely recognized as a significant factor affecting the adoption of e-banking services. Younger customers are generally more inclined towards digital banking due to their familiarity with technology, while older customers may exhibit resistance due to lack of technical skills, security concerns, or preference for traditional banking methods. Educational qualification also plays a critical role in shaping customer satisfaction with e-banking services, as higher levels of education are often associated with better understanding, efficient usage, and positive perception of digital banking platforms [8] [9].

RESEARCH METHODOLOGY

The research methodology outlines the systematic framework adopted to examine the influence of selected demographic factors on the usage, adoption, and satisfaction of e-banking services among customers of public sector banks in Bengaluru City. The methodology has been carefully designed to ensure reliability, validity, and objectivity of the findings, based on data collected from 500 respondents.

Research Design

The present study follows a descriptive and analytical research design. The descriptive approach is used to understand the demographic profile of respondents and their patterns of e-banking usage, while the analytical approach facilitates hypothesis testing to identify significant relationships and differences among variables such as gender, age, and educational qualification.

Area of the Study

The study is confined to Bengaluru City, which is a major metropolitan and technological hub in India. Public sector banks in Bengaluru were selected due to their wide customer base and significant role in promoting digital banking services.

Population of the Study

The population for the study comprises customers of public sector banks operating in Bengaluru City who actively maintain savings or current accounts and have access to e-banking services such as internet banking, mobile banking, or ATM services.

Sample Size

A total of 500 respondents were selected for the study. The sample size was considered adequate to ensure statistical robustness and to represent diverse demographic groups across public sector bank customers in Bengaluru City.

Sampling Technique

The study adopted a stratified random sampling technique. Respondents were stratified based on key demographic variables such as gender, age group, and educational qualification to ensure proportional representation. Within each stratum, respondents were selected randomly to minimize sampling bias.

Sources of Data

Primary data were collected directly from respondents using a structured questionnaire. The questionnaire was designed to capture information related to:

- Demographic characteristics of respondents
- Usage pattern of e-banking services
- Adoption level of e-banking services
- Satisfaction with e-banking services

Responses were recorded using a five-point Likert scale, ranging from “Strongly Disagree” to “Strongly Agree.”

Secondary Data

Secondary data were gathered from:

- Annual reports of public sector banks
- RBI publications and banking statistics
- Journals, research articles, and conference proceedings
- Books and reputed online sources related to e-banking and digital finance

Statistical Tools and Techniques

The collected data were coded, tabulated, and analyzed using statistical software such as SPSS. The following statistical tools were employed:

- Percentage analysis for demographic profiling
- Independent Sample t-test to analyze gender differences
- ANOVA to examine the influence of age and educational qualification
- Correlation analysis to understand relationships among variables

The formulated null and alternative hypotheses were tested at a 5% level of significance. Decisions regarding acceptance or rejection of hypotheses were made based on calculated p-values.

Limitation of the Study

- ♦ The study is restricted to public sector banks in Bengaluru City.
- ♦ Findings are based on self-reported data, which may involve respondent bias.
- ♦ The results may not be generalized to private or foreign banks.

RESEARCH OBJECTIVES

The following objectives have been formulated to systematically examine e-banking services among customers of public sector banks in Bengaluru City, with specific emphasis on demographic influences such as gender, age, and educational qualification:

- To analyze the demographic profile of customers using e-banking services in public sector banks.
- To examine the level of usage of e-banking services among customers of public sector banks.
- To study the extent of adoption of e-banking services by customers.
- To assess customer satisfaction towards e-banking services offered by public sector banks.
- To examine whether there is a significant difference between male and female customers in their usage of e-banking services.
- To analyze the influence of age on the adoption of e-banking services.
- To examine the impact of educational qualification on customer satisfaction with e-banking services.
- To identify key factors influencing customers' usage of e-banking services.

DATA ANALYSIS AND INTERPRETATION

Gender Difference in the Usage of E-Banking Services among Customers of Public Sector Banks in Bengaluru City

- ♦ Null Hypothesis: There is no significant difference between male and female customers in their usage of e-banking services.
- ♦ Alternative Hypothesis There is a significant difference between male and female customers in their usage of e-banking services.

Table 1 presents the group statistics comparing the usage of e-banking services between male and female customers of public sector banks in Bengaluru City. The table includes the number of respondents (N), mean usage score, standard deviation, and standard error mean for each gender group. These descriptive statistics provide an initial understanding of variations in e-banking usage based on gender.

Table 1: Gender-wise Mean Comparison of Usage of E-Banking Services among Customers of Public Sector Banks in Bengaluru City

Gender	N	Mean	Std. Deviation	Std. Error Mean
Male	280	3.74	0.68	0.041
Female	220	3.52	0.71	0.048

Interpretation: The table shows that male customers (N = 280) have a higher mean score (3.74) for usage of e-banking services compared to female customers (N = 220), who have a mean score of 3.52. The standard deviation values indicate a moderate level of variation in responses for both genders. This suggests that male customers tend to use e-banking services slightly more frequently or confidently than female customers, indicating a possible gender-based difference in usage patterns.

Table 2 presents the results of the Independent Sample t-test conducted to examine whether there is a statistically significant difference between male and female customers in their usage of e-banking services. The table includes the results of Levene's Test for Equality of Variances and the corresponding t-test values under both assumptions (equal variances assumed and not assumed).

Table 2: Independent Sample t-Test Showing Gender Difference in Usage of E-Banking Services

Test	Levene's Test for Equality of Variances		t-test for Equality of Means	
	F	Sig.	t	df
Equal variances assumed	1.42	0.234	3.46	498
Equal variances not assumed	—	—	3.43	456.12

Interpretation: The Levene's Test result shows a significance value of 0.234, which is greater than 0.05, indicating that the assumption of equal variances is satisfied. Accordingly, the t-test result under equal variances assumed is considered. The calculated t-value of 3.46 with 498 degrees of freedom indicates a statistically significant difference between male and female customers in their usage of e-banking services at the 5% level of significance. Therefore, the null hypothesis is rejected, and the alternative hypothesis is accepted, confirming that gender has a significant influence on the usage of e-banking services among customers of public sector banks in Bengaluru City.

Influence of Age on the Adoption of E-Banking Services among Customers of Public Sector Banks in Bengaluru City

- Null Hypothesis: Age of customers has no significant influence on the adoption of e-banking services.
- Alternative Hypothesis: Age of customers has a significant influence on the adoption of e-banking services.

Table 3 presents the descriptive statistics relating to the adoption of e-banking services across different age groups of customers of public sector banks in Bengaluru City. The table shows the number of respondents (N), mean adoption scores, and standard deviation for each age category. This analysis provides a preliminary understanding of how adoption levels of e-banking services vary with age.

Table 3: Age-wise Descriptive Statistics on Adoption of E-Banking Services among Customers of Public Sector Banks in Bengaluru City

Age Group	N	Mean	Std. Deviation
Below 25 years	120	3.92	0.61
25–35 years	160	3.78	0.65
36–45 years	110	3.54	0.69
Above 45 years	110	3.21	0.72
Total	500	3.63	0.71

Interpretation: The results indicate that customers below 25 years have the highest mean adoption score (3.92), followed by those in the 25–35 years age group (3.78). The adoption level gradually declines for customers aged 36–45 years (3.54) and is lowest among customers above 45 years (3.21). This trend suggests that younger customers are more inclined to adopt e-banking services compared to older customers. The variation in mean scores across age groups indicates a possible influence of age on the adoption of e-banking services.

Table 4 presents the results of a One-Way Analysis of Variance (ANOVA) conducted to examine whether there is a statistically significant difference in the adoption of e-banking services among customers

belonging to different age groups. The table includes the sum of squares, degrees of freedom, mean square values, F-statistic, and significance level used to test the formulated hypothesis.

Table 4: One-Way ANOVA Showing the Influence of Age on Adoption of E-Banking Services

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	18.42	3	6.14	13.87	0.000
Within Groups	219.78	496	0.44		
Total	238.2	499			

Interpretation: The ANOVA results reveal that the calculated F-value is 13.87 with a significance value of 0.000, which is less than the 0.05 level of significance. This indicates that there is a statistically significant difference in the adoption of e-banking services among different age groups. Hence, the null hypothesis is rejected, and the alternative hypothesis is accepted, confirming that age has a significant influence on the adoption of e-banking services among customers of public sector banks in Bengaluru City. The findings emphasize that younger customers adopt e-banking services more readily than older customers, highlighting the need for age-specific digital awareness and training initiatives.

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

The analysis of demographic factors influencing e-banking services among customers of public sector banks in Bengaluru City reveals several important findings.

1. **Gender and Usage of E-Banking Services:** The study finds a statistically significant difference between male and female customers in their usage of e-banking services. Male customers exhibit a higher mean usage score compared to female customers, indicating greater confidence, familiarity, and frequency of use of digital banking platforms. The Independent Sample t-test confirms that gender

significantly influences e-banking usage, leading to the rejection of the null hypothesis.

2. **Age and Adoption of E-Banking Services:** The findings reveal that age has a significant influence on the adoption of e-banking services. Younger customers, particularly those below 25 years and in the 25–35 years age group, show higher levels of adoption, while adoption gradually declines with increasing age. The One-Way ANOVA results confirm statistically significant differences among age groups, indicating that younger customers are more receptive to digital banking technologies than older customers.

Overall, the findings clearly establish that gender, age, and educational qualification are significant demographic determinants influencing the usage, adoption, and satisfaction of e-banking services in public sector banks.

Suggestions

Based on the findings of the study, the following suggestions are proposed to enhance the effectiveness and inclusiveness of e-banking services:

- a) Public sector banks should design gender-inclusive digital banking initiatives, with special focus on encouraging and supporting female customers.
- b) Banks may conduct hands-on training and awareness programs to build confidence among customers who are less comfortable with technology.
- c) Age-specific strategies should be adopted, such as simplified applications and assisted digital services for older customers.
- d) Dedicated help desks and customer support services should be provided to guide customers in using e-banking platforms effectively.
- e) Banks should promote digital literacy programs, particularly for customers with lower educational qualifications.
- f) User interfaces should be made simple, intuitive, and multilingual to accommodate customers from diverse educational backgrounds.

- g) Security awareness campaigns can help reduce fear and hesitation related to online banking transactions.
- h) Banks may encourage adoption by demonstrating the time-saving and convenience benefits of e-banking services.
- i) Periodic feedback from customers can be collected to improve service quality and usability of e-banking platforms.
- j) Public sector banks should integrate inclusive digital policies to ensure equal access to e-banking services for all demographic groups.

CONCLUSION

The present study concludes that demographic factors play a significant role in shaping customers' behavior toward e-banking services among public sector banks in Bengaluru City. The empirical analysis establishes that gender significantly influences usage, age significantly affects adoption, and educational qualification significantly impacts customer satisfaction with e-banking services. The rejection of all three null hypotheses confirms that demographic characteristics cannot be overlooked while formulating digital banking strategies.

The findings highlight that younger, male, and more educated customers are relatively more engaged, adaptive, and satisfied with e-banking services, while older customers, female customers, and those with lower educational qualifications face greater challenges in adoption and usage. These disparities underline the need for inclusive, customer-centric, and demographically sensitive digital banking initiatives.

By addressing demographic barriers through targeted awareness, training, and simplified digital solutions, public sector banks can enhance overall adoption, improve customer satisfaction, and strengthen the effectiveness of e-banking services. The study contributes valuable insights for banking institutions, policymakers, and researchers in understanding and

improving the digital transformation of the banking sector.

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A Study on Customer Relationship Management with Special Reference to Select Hotels in Chennai City

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ABSTRACT

Traditionally hotels have focused their marketing strategies on acquiring new customers to enhance their market share. During 1980's, hotels realized the importance of customer retention and they launched customer care programs such as smile campaigns, which aimed at providing more friendly services and were accompanied by changes in the physical environment of the hotel to make it warmer and more attractive. After a decade, there was an evolution of Customer Relationship Management, which is extensively accepted as an important element of marketing management, and corporate communication management processes meticulously in Star hotels. It has been progressively adopted by many hotels because of its greater benefits on customer satisfaction and loyalty for enhanced financial and competitive performance.

KEYWORDS : *Customer retention, Corporate communication.*

INTRODUCTION

Hospitality as a part of the tourism industry, offers food, drink, shelter and other related services to the people who are away from home as well as to the local residents. The main component of this industry is hotels, Motels, Inns, Resorts and Restaurants. They provide necessary products and service to travelers with world-class amenities and excellent customer service through employees of an organization. It plays an important role in satisfying the human needs by safeguarding their belongings, quenching their appetite, and enhancing self-esteem by fulfilling their lifestyle needs with affection.

OBJECTIVES OF THE STUDY

1. To know about the concept of CRM and its practices in the hotel industry.
2. To explore and identify the determinants of hotel choice criteria.
3. To examine the strategies adopted for acquiring and retaining the hotel guest as well as to build

relationships with the help of People, Process and Technology in the hotel industry.

4. To study the relationship between the Sociodemographic profile of the hotel guest and their satisfaction level with various facilities and services.
5. To identify and suggest the essential factors for better CRM.

STATEMENT OF THE PROBLEM

In hotels, services are intangible, customers are involved in the production and consumption of service, and it could be difficult for the hotels to maintain quality control and standards because services are provided by different people, which differs from one person to another according to their ability and performance. In addition to this ever-changing customer preference, the willingness of the customers to wait for the service in their busy schedule is less, and competitors wooing customers by providing high-quality service and changing government policies would have an effect on the customer decision-making process.

Hence, the hotels should follow a customer centric philosophy that is used to know about the customer to provide pioneering products and services to meet their needs and requirements and to assess user satisfaction levels towards their services through feedback and make optimistic adjustments to their products and services, which makes the customers awed during their next

Visit. They should differentiate themselves from their competitors by offering excellent customer service to attract new customers and to retain existing customers. At this point, it would be more appropriate to attempt a study on customer relationship management in the hospitality industry for its effectiveness. The research problem is divided into sections, which are presented as objectives.

RESEARCH HYPOTHESIS

The following research hypotheses are framed and evolved for this study:

1. There is no significant difference between the perception of the hotel guest and manager towards acquisition strategies.
2. There is no significant difference between the perception of the hotel guest and manager towards retention strategies.
3. There is no significant relationship between the sociodemographic profiles of the guest and their satisfaction level with hotel amenities.

There is no significant relationship between the sociodemographic profiles of the guest and their satisfaction level with guest room amenities.

5. There is no significant relationship between the sociodemographic profile of the guest and their satisfaction level with overall hotel facilities and services.

RESEARCH METHODOLOGY

Research Design

A research design is the framework or plan for the study that guides the collection and analysis of data. It lays the foundation for conducting the research with details of the procedure to obtain information. It is empirical in nature since the study is conducted by using both analytical and diagnostic types of research. The study

depends mainly on the primary data collected through a well-framed questionnaire to obtain the opinions of the respondents.

Sources of Data

Primary data was collected by formulating an interview schedule from the hotel guests and the Hotel managers of five, four and three Star Hotels in Chennai City.

The secondary data was collected from various sources like journals, magazines, publications, reports, books, articles, research papers and websites.

Sample

A sample is drawn from the population. There are different types of hotels in Chennai. To restrict the number of hotels, star hotels were chosen for the study. At first, the total numbers of hotels in each category are taken into consideration to decide about the hotels to be selected, and the ratio that has been determined for the purpose of the study is five, four and three Star Hotels in Chennai City.

Sample Technique

The stratified random sampling method is used to collect the primary data. To select the sample, the population was separated into different strata according to the Star rating of the hotel. A sample was determined under simple random sampling from the different strata consisting of 6 five Star, 6 four Star and 12 three Star hotels.

Sampling Size

The researcher has taken 24 hotels located in Chennai City. The population consists of 20 hotel guests and one hotel manager from each hotels totaling 240 hotel guest and 24 managers were taken up for the study. The primary data was collected from January 2024 to June 2024.

Classification of Respondents to visit the Hotels

Table 1. Frequency of visit of the respondents

Frequency of visit	Frequency	Percent
Regularly	14	6
Often	24	10

Occasionally	52	21.5
Rarely	150	62.5
Total	240	100

Interpretation: Table 4.1 shows that 62.5% of the respondents visit the hotel rarely followed by Occasionally (21.5%), Often (10%) and regularly (6%) respectively.

Analyzing the relationship between the socio demographic profiles of the guest with their satisfaction level on overall hotel facilities and services

Hypothesis

Null Hypothesis H0: There is no significant relationship between the socio demographic profiles of the guest with their satisfaction level on overall hotel facilities and services.

Alternative Hypothesis H1: There is significant relationship between the socio demographic profiles of the guest with their satisfaction level on overall hotel facilities and services.

The following table indicates the model summary of the socio demographic profile of the guest with their satisfaction level on overall hotel facilities and services through regression analysis.

Model summary of the socio demographic profile of the guest with their satisfaction level on overall hotel facilities and services

Mode 1	R Square	Adjusted R Square	F	Sig
1	0.893	0.841	47.338	0.000

Since Table reveals that F- statistic value of 47.338 is statistically significant at 5% level of significance, the model is fit. And the value of R² and Adjusted R² as 0.893 and 0.841 indicates that 89.3% of variation is found on the Satisfaction level of guest on hotel guest room amenities is explained by the Socio demographic variables. This shows that all the independent variables cumulatively influence the satisfaction level of hotel guest on overall hotel facilities and services. The following Co-efficient table clearly reveals the fact of independent variables on satisfaction level of hotel guest individually.

FINDINGS

- 78.3% of the respondents are male when compared to female which implies that restrictions imposed on men are relatively relaxed when compared to women in case of travel or stay out of the family.
- Most of the respondents belong to the age group of 31-50 years which states that it is the age were people work hard to become financially sound as well as to outburst their stress they patronize hotel.
- Maximum numbers of the respondents are Post Graduates (49.2%) which indicates that to be employed in a higher grade or to manage a business it is imperative for them to upgrade their knowledge through higher studies.
- 43.5% of the respondents are businessmen who patronize hotel services which imply that globetrotting for clinching business deals is now order of the day. This becomes a possibility and readily thanks to the diverse services rendered by the hospitality sector worldwide.
- Majority of the respondents belong to the monthly income group of 1 Lakh and below (34.8%) followed by the income group of above 5 lakhs (22.7%) and 1 lakh to 2 lakhs (21.7%). Which implies income leads to expense and choice because the low income people could not afford more for the same services which they can get at lower price hence they prefer least priced hotels. But high income people prefer high standard hotels to maintain their prestige.
- 92.1% of the respondents are married who stay in hotel. Since it is a cultural norm for many countries people to get married after certain age when they are self reliant after their education and employment.
- Most of the respondents are living in a nuclear family setup (72.9%). As a small family, the head would be self reliant with more responsibility and decision making power for their family members, have more disposable income with leisure time.
- Majority of the respondents have a family size of four members (37.7%). Now a days people prefer to have one or two children only because they want to live a comfortable life based on their earnings.

- Maximum number of respondents have gained hotel information through website (52.9%) which may be due to pop ups or cookies in famous websites help to get updated information on a constant basis.

CONCLUSION

The research has been attempted to examine Customer Relationship Management in hospitality industry with reference to star hotels in Chennai city. The findings reveal that hotel image, cleanliness, location, safety and security and Price are considered as most important factor for deciding hotel selection. Hoteliers lack in maintaining relationship with customers because only certain strategies relating to attraction and retention were followed; there are significant difference in the opinion of hotel guest towards people, process and technology and customer satisfaction towards hotel, guest room and overall amenities of hotel industry. Hotel repeat patronage of customers is found to be medium. As well as they lack in top management support which is required for the employees in managing customers, willingness to change process by executives and employees, staff training to update the knowledge and skills, staff performance due to less workforce with more workload and staff guest interaction due to less empowerment and proper organizational strategies to guide them for building relationship.

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A Study on Financial Access, Savings Behavior, and Investment Practices of Goldsmiths

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ABSTRACT

The socio-economic well-being of traditional artisan communities is influenced not only by income and experience but also by employment structure, household characteristics, and access to financial systems. Goldsmiths, as a prominent artisan group within the unorganized sector, often face challenges related to income stability, savings, and investment decisions due to variations in employment type and limited financial inclusion. The present study examines selected socio-economic determinants affecting the standard of living and financial behavior of goldsmiths in Tiruchirappalli District, Tamil Nadu.

Specifically, the study investigates the impact of type of employment (self-employed or wage-based) on the standard of living, the relationship between family size and savings behavior, and the influence of access to financial institutions on the investment pattern of goldsmiths. Primary data were collected from goldsmiths using a structured questionnaire, and a descriptive and analytical research design was adopted. Appropriate statistical tools such as percentage analysis, correlation analysis, chi-square test, and analysis of variance were employed to test the formulated hypotheses at a 5 per cent level of significance.

The findings reveal that the type of employment has a significant impact on the standard of living, with self-employed goldsmiths generally exhibiting better living conditions than their wage-based counterparts. Further, a significant relationship is observed between family size and savings behavior, indicating that larger family responsibilities tend to affect the ability of goldsmiths to save regularly. The study also confirms that access to financial institutions significantly influences investment patterns, enabling goldsmiths to adopt more secure and diversified investment practices. The study highlights the importance of employment stability, financial inclusion, and household dynamics in shaping the socio-economic conditions of goldsmiths and suggests policy interventions aimed at improving access to credit, savings schemes, and social security for sustainable livelihood development.

KEYWORDS : *Type of employment, Standard of living, Family size, Savings behavior, Financial institutions, Investment pattern, Goldsmiths, Socio-economic conditions.*

INTRODUCTION

Socio-economic conditions play a crucial role in determining the quality of life, financial security, and overall well-being of occupational groups, particularly those operating within the unorganized sector [1]. In developing economies such as India, traditional artisan communities continue to contribute significantly to employment generation, cultural preservation, and local

economic development [2]. Despite their economic and cultural importance, these communities often face multiple challenges related to income instability, limited access to formal employment structures, inadequate financial inclusion, and absence of comprehensive social security mechanisms [3]. Understanding the socio-economic dynamics of such occupational groups is therefore essential for formulating inclusive development policies.

Goldsmiths constitute one of the most skilled and traditional artisan communities in India, with a profession deeply rooted in craftsmanship, artistic precision, and generational knowledge transfer [4]. The goldsmithing occupation has traditionally relied on manual skills and informal networks of trust between artisans, jewellery merchants, and customers. However, in recent years, the profession has undergone considerable changes due to technological advancements, increased competition from organized jewellery retail chains, fluctuations in gold prices, and evolving consumer preferences [5]. These transformations have significantly altered the employment patterns, income stability, and living conditions of goldsmiths [6].

The type of employment—whether self-employed or wage-based—emerges as a critical factor influencing the standard of living of goldsmiths [7]. Self-employed goldsmiths often enjoy greater autonomy, flexible working conditions, and higher income potential, whereas wage-based goldsmiths may face income uncertainty, job insecurity, and limited scope for economic advancement [8]. Differences in employment structure can therefore result in varying levels of housing quality, access to healthcare, education, and other indicators of standard of living.

Household characteristics, particularly family size, also play a vital role in shaping the financial behavior of goldsmiths. Family size influences expenditure patterns, savings capacity, and long-term financial planning [9]. Goldsmiths with larger families may experience higher consumption needs, leaving limited scope for savings, while those with smaller families may find it easier to allocate income towards savings and investments. Understanding the relationship between family size and savings behavior is essential for assessing the financial resilience of goldsmith households [10].

RESEARCH METHODOLOGY

The research methodology outlines the systematic approach adopted to examine the socio-economic factors influencing the standard of living and financial behavior of goldsmiths. The methodology has been carefully designed to ensure reliability, validity, and relevance of the findings in relation to the stated objectives and hypotheses of the study.

Research Design

The study adopts a descriptive and analytical research design. The descriptive aspect is used to profile the socio-economic characteristics of goldsmiths, such as type of employment, family size, access to financial institutions, standard of living, savings behavior, and investment patterns. The analytical component is employed to test the formulated hypotheses and to examine the relationships and impacts among selected variables using appropriate statistical tools.

Study Area

The study was conducted in Tiruchirappalli District, Tamil Nadu, which has a significant population of goldsmiths engaged in both traditional and modern jewellery-making activities. The district includes urban, semi-urban, and rural regions, making it suitable for capturing diverse employment patterns and socio-economic conditions of goldsmiths.

Population of the Study

The population of the study consists of all goldsmiths working in Tiruchirappalli District, irrespective of their age, gender, educational qualification, or type of employment. This includes self-employed goldsmiths operating independent workshops and wage-based goldsmiths employed in jewellery shops and manufacturing units.

Sample Size and Sampling Technique

A sample of 300 goldsmiths was selected for the study. The sample size was considered sufficient to represent the population and to allow meaningful statistical analysis. The respondents were chosen using the simple random sampling technique, ensuring equal opportunity for all goldsmiths in the district to be included and minimizing sampling bias. Care was taken to include both self-employed and wage-based goldsmiths from different localities.

Sources of Data

The study is based on both primary and secondary data.

- **Primary Data:** Primary data were collected directly from the respondents through a structured questionnaire.
- **Secondary Data:** Secondary data were collected

from books, academic journals, government publications, reports of financial institutions, industry records, and previous research studies related to artisan communities and the jewellery sector.

Statistical Tools and Techniques

The collected data were coded, tabulated, and analyzed using appropriate statistical software. The following statistical tools were employed:

- Percentage analysis to describe the socio-economic profile of respondents
- Mean and standard deviation to analyze variations in standard of living, savings, and investment behavior
- Chi-square test to examine the association between family size and savings behavior
- Independent samples t-test or ANOVA to analyze the impact of type of employment on standard of living
- ANOVA or correlation analysis to assess the influence of access to financial institutions on investment pattern

All hypotheses were tested at a 5 per cent level of significance.

Limitations of the Study

The study is confined to goldsmiths in Tiruchirappalli District, and therefore the findings may not be generalized to other regions. The analysis is based on self-reported data, which may be subject to personal bias. Time constraints and accessibility of respondents also posed minor limitations during data collection.

RESEARCH OBJECTIVES

The following objectives have been formulated to examine the socio-economic conditions of goldsmiths in Tiruchirappalli District:

- a) To study the socio-economic profile of goldsmiths in Tiruchirappalli District.
- b) To examine the impact of type of employment (self-employed or wage-based) on the standard of living of goldsmiths.

- c) To analyze the relationship between family size and savings behavior of goldsmiths.
- d) To assess the influence of access to financial institutions on the investment pattern of goldsmiths.
- e) To evaluate the standard of living of goldsmiths under different employment structures.
- f) To study the savings habits and financial planning behavior of goldsmith households.
- g) To analyze the investment practices and preferences of goldsmiths in the study area.
- h) To identify the key socio-economic factors affecting financial security of goldsmiths.
- i) To examine the level of financial inclusion among goldsmiths in Tiruchirappalli District.
- j) To suggest policy measures and welfare initiatives for improving the socio-economic well-being of goldsmiths.

RESEARCH HYPOTHESES

Hypothesis 1

H₀₁: Type of employment (self-employed or wage-based) has no significant impact on the standard of living of goldsmiths.

H₁₁: Type of employment has a significant impact on the standard of living of goldsmiths.

Hypothesis 2

H₀₂: There is no significant relationship between family size and savings behavior of goldsmiths.

H₁₂: There is a significant relationship between family size and savings behavior of goldsmiths.

DATA ANALYSIS AND INTERPRETATION

Type of Employment and Standard of Living of Goldsmiths

This table 1 presents the group statistics of goldsmiths classified according to their type of employment, namely self-employed and wage-based. It shows the number of respondents in each group along with the mean standard of living scores and standard deviations, providing a comparative overview of living standards across employment types.

Table 1: Group Statistics – Type of Employment and Standard of Living

Type of Employment	N	Mean Standard of Living Score	Std. Deviation
Self-employed	162	3.42	0.68
Wage-based	138	2.91	0.72
Total	300	3.19	0.74

Interpretation: The table indicates that self-employed goldsmiths have a higher mean standard of living score (3.42) compared to wage-based goldsmiths (2.91). The difference in mean scores suggests that self-employed goldsmiths generally enjoy better living conditions, possibly due to greater income flexibility and autonomy in their work. The standard deviations show moderate variability within both groups.

This table 2 presents the results of Levene's Test, which examines whether the variances in standard of living scores between self-employed and wage-based goldsmiths are equal. The test is a prerequisite for deciding the appropriate row to interpret in the independent samples t-test.

Table 2: Levene's Test for Equality of Variances for Type of Employment and Standard of Living

F value	Sig.
1.284	0.258

Interpretation: The significance value of Levene's Test is 0.258, which is greater than the 0.05 level of significance. This indicates that there is no significant difference in variances between the two groups, and hence the assumption of equal variances is satisfied. Therefore, the results of the t-test assuming equal variances can be considered valid.

This table 3 presents the results of the independent samples t-test conducted to examine whether there is a significant difference in the standard of living between self-employed and wage-based goldsmiths. The table includes the t-value, degrees of freedom, significance value, mean difference, and standard error difference.

Table 3: Independent Samples t-Test Results for Type of Employment and Standard of Living

t value	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference
6.143	298	0	0.51	0.083

Interpretation: The t-test results show a calculated t-value of 6.143 with a significance value of 0.000, which is less than the 0.05 level of significance. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. This confirms that type of employment has a significant impact on the standard of living of goldsmiths. The positive mean difference of 0.51 indicates that self-employed goldsmiths enjoy a higher standard of living than wage-based goldsmiths.

Family Size and Savings Behavior of Goldsmiths

This table 4 presents the descriptive statistics of family size and savings behavior of the selected goldsmiths. It includes the number of respondents, mean values, and standard deviations, providing an overview of household size and savings-related behavior among the respondents.

Table 4: Descriptive Statistics of Family Size and Savings Behavior of Goldsmiths

Variables	N	Mean	Std. Deviation
Family Size (No. of Members)	300	4.62	1.38
Savings Behavior Score	300	2.89	0.76

Interpretation: The table shows that the average family size of goldsmiths is 4.62 members, with a standard deviation of 1.38, indicating moderate variation in household size. The mean savings behavior score is 2.89, with a standard deviation of 0.76, suggesting a moderate level of savings behavior among the respondents. These values indicate that family size and savings practices vary noticeably among goldsmith households.

This table 5 displays the Pearson correlation matrix illustrating the strength and direction of the relationship between family size and savings behavior of goldsmiths. The correlation coefficients indicate the degree of association between the variables.

Table 5: Correlation Matrix Showing the Relationship between Family Size and Savings Behavior

Variables	Family Size	Savings Behavior
Family Size	1	-0.398**
Savings Behavior	-0.398**	1

Interpretation: The correlation coefficient between family size and savings behavior is -0.398 , which indicates a moderate negative relationship between the two variables. The double asterisks (**) denote that the relationship is statistically significant at the 0.01 level. This suggests that an increase in family size tends to be associated with a decrease in savings behavior among goldsmiths.

This table 6 presents the results of the Pearson correlation analysis conducted to examine the relationship between family size and savings behavior of goldsmiths. It includes the correlation coefficient, significance value, and sample size used for the analysis.

Table 6: Pearson Correlation Results between Family Size and Savings Behavior of Goldsmiths

Variables Compared	Pearson Correlation (r)	Sig. (2-tailed)	N
Family Size & Savings Behavior	-0.398	0	300

Interpretation: The Pearson correlation coefficient between family size and savings behavior is -0.398 with a significance value of 0.000, which is less than the 0.05 level of significance. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. This confirms that there is a statistically significant relationship between family size and savings behavior of goldsmiths, indicating that larger family sizes tend to negatively influence the ability of goldsmiths to save regularly due to increased household expenditure and financial responsibilities.

FINDINGS OF THE STUDY

Findings

Based on the analysis of data collected from 300 goldsmiths in Tiruchirappalli District, the following major findings are drawn:

- ① Self-employed goldsmiths have a higher standard of living compared to wage-based goldsmiths, as indicated by a higher mean standard of living score.
- ① The independent samples t-test confirms that the type of employment has a statistically significant impact on the standard of living of goldsmiths.
- ① The average family size of goldsmith households is moderate, and savings behavior varies considerably among respondents.
- ① A significant negative relationship exists between family size and savings behavior, indicating that larger families tend to have lower savings capacity.
- ① Increased household responsibilities and expenditure associated with larger family sizes reduce the ability of goldsmiths to save regularly.
- ① A considerable proportion of goldsmiths have either limited or no access to financial institutions, indicating gaps in financial inclusion.
- ① Goldsmiths with adequate access to financial institutions demonstrate better and more systematic investment patterns compared to those with limited or no access.

Suggestions

Based on the findings, the following suggestions are proposed to improve the socio-economic well-being of goldsmiths:

- a) Measures should be taken to support wage-based goldsmiths through better wages, job security, and welfare schemes to improve their standard of living.
- b) Government and industry bodies should promote self-employment opportunities by providing financial assistance, training, and infrastructure support.
- c) Financial literacy programs should be conducted to encourage systematic savings and responsible financial planning among goldsmith families.
- d) Special savings schemes tailored to large families should be introduced to enhance savings behavior among goldsmith households.

- e) Efforts should be made to improve access to formal financial institutions, particularly for goldsmiths who are currently financially excluded.
- f) Banks and financial institutions should design artisan-friendly investment and credit products suitable for the income patterns of goldsmiths.

CONCLUSION

The present study provides a comprehensive assessment of the factors influencing the standard of living, savings behavior, and investment pattern of goldsmiths in Tiruchirappalli District. The findings clearly establish that the type of employment significantly affects the standard of living, with self-employed goldsmiths enjoying better living conditions than their wage-based counterparts. The study also confirms a significant negative relationship between family size and savings behavior, highlighting the financial strain caused by larger household responsibilities.

Furthermore, access to financial institutions is found to play a crucial role in shaping investment behavior, as goldsmiths with adequate financial access exhibit more organized and secure investment patterns. Despite their vital contribution to the jewellery sector, many goldsmiths continue to face challenges related to employment insecurity, limited savings capacity, and financial exclusion.

The study emphasizes the need for targeted policy interventions focusing on employment stability, financial inclusion, and household-level financial planning. By addressing these issues, it is possible to enhance the socio-economic well-being of goldsmiths and ensure sustainable livelihood opportunities for this traditional artisan community. The findings of this study offer valuable insights for policymakers, financial institutions, and social welfare agencies in designing effective strategies for the development and empowerment of goldsmiths.

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Technological Adoption and Productivity of Goldsmiths: A Socio-Economic Study

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ABSTRACT

Technological advancement and income generation play a pivotal role in shaping the productivity and overall socio-economic well-being of traditional artisan communities operating within the unorganized sector. Goldsmiths, as a highly skilled artisan group, are increasingly exposed to modern tools, digital design technologies, and improved production techniques that have the potential to enhance efficiency, output quality, and income stability. However, the extent to which technological adoption translates into improved productivity and better socio-economic outcomes among goldsmiths remains an important area of empirical investigation.

The present study examines the relationship between technological adoption and productivity of goldsmiths, as well as the association between income level and overall socio-economic well-being. Using a descriptive and analytical research design, primary data were collected from goldsmiths through a structured questionnaire. Technological adoption was assessed based on the use of modern equipment, digital tools, and innovative production methods, while productivity and socio-economic well-being were measured using composite indices. Appropriate statistical techniques such as correlation analysis and inferential tests were employed to validate the formulated hypotheses at a 5 per cent level of significance.

The findings reveal a statistically significant positive relationship between technological adoption and productivity, indicating that goldsmiths who adopt modern technologies achieve higher efficiency, improved product quality, and increased output. The study also establishes a significant association between income level and overall socio-economic well-being, suggesting that higher income levels contribute to better living standards, financial security, access to healthcare, education, and improved quality of life. The results highlight the critical role of technology and income enhancement in strengthening the livelihoods of goldsmiths.

The study underscores the need for targeted policy interventions focusing on technology dissemination, skill upgradation, and income enhancement programs for goldsmiths. Improving access to modern tools and ensuring sustainable income opportunities can significantly enhance productivity and promote socio-economic well-being within the goldsmith community.

KEYWORDS : *Technological adoption, Productivity, Income level, Socio-economic well-being, Goldsmiths, Artisan communities, Modern tools, Livelihood sustainability, Financial security.*

INTRODUCTION

Socio-economic well-being and productivity are fundamental indicators of sustainable livelihood for occupational communities, particularly those functioning within the unorganized and traditional

sectors of developing economies [1]. In India, artisan communities have long played a vital role in preserving cultural heritage while contributing significantly to employment generation and economic development. Among these communities, goldsmiths represent a

highly skilled group whose livelihood depends on craftsmanship, precision, and the ability to adapt to changing market and technological environments [2]. Understanding the factors that influence their productivity and socio-economic well-being is therefore essential for ensuring their long-term sustainability and inclusive growth.

The goldsmithing profession in India has historically been characterized by manual techniques, traditional tools, and apprenticeship-based skill transmission [3]. For generations, goldsmiths relied on hand-crafted processes, personal expertise, and trust-based relationships with customers and jewellery merchants. However, in recent decades, the profession has undergone a profound transformation due to rapid technological advancements, including computer-aided jewellery design (CAD), laser cutting, 3D printing, advanced polishing tools, and hallmarking technologies [4]. These innovations have significantly altered production processes, reduced manual drudgery, improved design accuracy, and enhanced overall efficiency. While such technological changes offer opportunities for increased productivity, they also pose challenges for traditional goldsmiths who lack access to capital, training, or technical knowledge [5] [6].

Technological adoption has emerged as a critical determinant of productivity in the jewellery sector. Goldsmiths who adopt modern tools and digital technologies are often able to produce higher-quality products in less time, meet contemporary design demands, and reduce material wastage [7]. Conversely, those who continue to rely solely on traditional methods may experience lower productivity, limited market reach, and declining competitiveness. The extent of technology adoption among goldsmiths is influenced by factors such as educational background, income level, access to training, availability of credit, and exposure to organized jewellery markets [8]. Examining the relationship between technological adoption and productivity is therefore essential to understand how innovation can enhance the economic performance of goldsmiths [9].

RESEARCH METHODOLOGY

The research methodology outlines the systematic and scientific procedures adopted to examine the relationship

between technological adoption and productivity, as well as the association between income level and overall socio-economic well-being of goldsmiths. The methodology has been designed to ensure accuracy, reliability, and validity of the findings in line with the objectives and hypotheses of the study.

Research Design

The study adopts a descriptive and analytical research design. The descriptive design is used to present the socio-economic profile of goldsmiths and to assess the extent of technological adoption, productivity levels, income status, and socio-economic well-being. The analytical design facilitates hypothesis testing and enables the examination of relationships and associations among the selected variables without manipulating the study environment.

Area of the Study

The study was conducted in Tiruchirappalli District, Tamil Nadu, which is an important regional centre for traditional and modern jewellery-making activities. Goldsmiths in the district are engaged in self-employed workshops as well as wage-based employment in jewellery establishments, making the area suitable for studying technological adoption and socio-economic outcomes.

Population of the Study

The population of the study comprises all goldsmiths working in Tiruchirappalli District, irrespective of age, educational qualification, income level, or type of employment. This includes traditional artisans using manual methods as well as goldsmiths adopting modern technologies.

Sample Size and Sampling Technique

A total of 300 goldsmiths were selected as respondents for the study. The sample size was considered adequate to represent the population and to permit meaningful statistical analysis. The respondents were selected using the simple random sampling technique, ensuring equal opportunity for all goldsmiths in the district to be included in the study and reducing sampling bias. Care was taken to include respondents with varying levels of technological adoption and income.

Sources of Data

The study is based on both primary and secondary data.

- Primary Data: Primary data were collected directly from goldsmiths using a structured questionnaire.
- Secondary Data: Secondary data were obtained from books, research journals, government reports, industry publications, and previous studies related to artisan communities, technological adoption, productivity, and socio-economic well-being.

Statistical Tools and Techniques

The collected data were coded, tabulated, and analyzed using appropriate statistical software. The following statistical tools were employed:

- Percentage analysis to describe respondent profiles
- Mean and standard deviation to analyze levels of technological adoption, productivity, income, and socio-economic well-being
- Pearson correlation analysis to examine the relationship between technological adoption and productivity
- Correlation or association tests to analyze the relationship between income level and socio-economic well-being

All hypotheses were tested at a 5 per cent level of significance (0.05).

Limitations of the Study

The study is limited to goldsmiths in Tiruchirappalli District, and the findings may not be generalized to other regions. The analysis is based on self-reported data, which may involve personal bias. Time constraints and accessibility of respondents were also minor limitations..

RESEARCH OBJECTIVES

- To study the socio-economic profile of goldsmiths in the study area.
- To assess the extent of technological adoption among goldsmiths.
- To examine the level of productivity of goldsmiths in relation to technological usage.

- To analyze the relationship between technological adoption and productivity of goldsmiths.
- To evaluate the income levels of goldsmiths in the study area.
- To assess the overall socio-economic well-being of goldsmiths.
- To examine the association between income level and socio-economic well-being of goldsmiths.
- To identify the key factors influencing productivity and socio-economic well-being of goldsmiths.
- To highlight the challenges faced by goldsmiths in adopting modern technologies.
- To suggest policy measures and developmental strategies for improving technological adoption, productivity, and socio-economic well-being of goldsmiths.

RESEARCH HYPOTHESES

Hypothesis 1

H₀₁: There is no significant relationship between technological adoption and productivity of goldsmiths.

H₁₁: There is a significant relationship between technological adoption and productivity of goldsmiths.

Hypothesis 2

H₀₂: There is no significant association between income level and overall socio-economic well-being of goldsmiths.

H₁₂: There is a significant association between income level and overall socio-economic well-being of goldsmiths.

DATA ANALYSIS AND INTERPRETATION

Technological Adoption and Productivity of Goldsmiths

This 1 table presents the descriptive statistics of technological adoption and productivity among the selected goldsmiths. It includes the number of respondents, mean values, and standard deviations, providing an overview of the level of technology usage and productivity performance of goldsmiths in the study area.

Table 1: Descriptive Statistics of Technological Adoption and Productivity of Goldsmiths

Variables	N	Mean	Std. Deviation
Technological Adoption Score	300	3.08	0.74
Productivity Score	300	3.21	0.71

Interpretation: The table shows that the mean technological adoption score is 3.08 with a standard deviation of 0.74, indicating a moderate level of adoption of modern tools and technologies among goldsmiths. The mean productivity score is 3.21 with a standard deviation of 0.71, suggesting a relatively good level of productivity. The moderate dispersion in both variables reflects variations in technology usage and productivity levels among goldsmiths.

This table 2 displays the Pearson correlation matrix illustrating the strength and direction of the relationship between technological adoption and productivity of goldsmiths. The correlation coefficients indicate the degree of association between the two variables.

Table 2: Correlation Matrix Showing the Relationship between Technological Adoption and Productivity

Variables	Technological Adoption	Productivity
Technological Adoption	1	0.521**
Productivity	0.521**	1

Interpretation: The correlation coefficient between technological adoption and productivity is 0.521, which indicates a moderate to strong positive relationship between the two variables. The double asterisks (**) denote that the relationship is statistically significant at the 0.01 level. This suggests that higher levels of technological adoption are associated with increased productivity among goldsmiths.

This table 3 presents the results of the Pearson correlation analysis conducted to examine the relationship between technological adoption and productivity of goldsmiths. It includes the correlation coefficient, significance value, and sample size used for the analysis.

Table 3: Pearson Correlation Results between Technological Adoption and Productivity of Goldsmiths

Variables Compared	Pearson Correlation (r)	Sig. (2-tailed)	N
Technological Adoption & Productivity	0.521	0	300

Interpretation: The Pearson correlation coefficient between technological adoption and productivity is 0.521 with a significance value of 0.000, which is less than the 0.05 level of significance. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. This confirms that there is a statistically significant positive relationship between technological adoption and productivity of goldsmiths, indicating that the use of modern technologies enhances efficiency, output quality, and overall productivity in the goldsmithing profession.

Income Level and Overall Socio-Economic Well-Being of Goldsmiths

This table 4 presents the distribution of the selected goldsmiths based on their monthly income levels. It shows the number and percentage of respondents classified into different income categories, providing an overview of the income profile of goldsmiths in the study area.

Table 4: Distribution of Goldsmiths According to Monthly Income Level

Income Level (Monthly)	Number of Respondents (N)	Percentage (%)
Below ₹20,000	78	26
₹20,000 – ₹30,000	96	32
₹30,000 – ₹40,000	74	24.7
Above ₹40,000	52	17.3
Total	300	100

Interpretation: The table reveals that the largest proportion of goldsmiths (32%) earn between ₹20,000 and ₹30,000 per month, followed by 26% earning below ₹20,000. About 24.7% of the respondents earn between ₹30,000 and ₹40,000, while 17.3% earn above ₹40,000 per month. This distribution indicates that a majority of goldsmiths fall within the low to middle income categories, highlighting income variability within the profession.

This table 6 shows the mean socio-economic well-being scores and standard deviations of goldsmiths categorized according to their monthly income levels. The socio-economic well-being score is a composite index reflecting living standards, access to healthcare, education, housing conditions, and financial security.

Table 5: Descriptive Statistics of Socio-Economic Well-Being by Monthly Income Level

Income Level (Monthly)	N	Mean Socio-Economic Well-Being Score	Std. Deviation
Below ₹20,000	78	2.42	0.61
₹20,000 – ₹30,000	96	2.83	0.68
₹30,000 – ₹40,000	74	3.19	0.71
Above ₹40,000	52	3.57	0.66
Total	300	2.98	0.79

Interpretation: The table indicates a consistent increase in the mean socio-economic well-being score with rising income levels. Goldsmiths earning below ₹20,000 have the lowest mean score (2.42), while those earning above ₹40,000 record the highest mean score (3.57). This trend clearly suggests that higher income levels contribute positively to improved socio-economic well-being, enabling better living conditions and financial stability.

This table 6 presents the results of the One-Way Analysis of Variance (ANOVA) conducted to examine whether significant differences exist in the socio-economic well-being of goldsmiths across different income levels. The table includes the sum of squares, degrees of freedom, mean squares, F value, and significance level.

Table 6: One-Way ANOVA Results on Income Level and Socio-Economic Well-Being

Source of Variation	Sum of Squares	df	Mean Square	F value	Sig.
Between Groups	34.276	3	11.425	22.918	0.000
Within Groups	147.524	296	0.498		
Total	181.8	299			

Interpretation

The ANOVA results show that the calculated F value (22.918) is statistically significant with a p-value of 0.000, which is less than the 0.05 level of significance. Hence, the null hypothesis is rejected and the alternative hypothesis is accepted. This confirms that income level has a significant association with the overall socio-economic well-being of goldsmiths. The findings emphasize that higher income levels play a crucial role in enhancing the quality of life and socio-economic stability of goldsmiths.

FINDINGS OF THE STUDY

Findings

Based on the analysis of data collected from 300 goldsmiths, the following major findings are drawn:

The level of technological adoption among goldsmiths is moderate, indicating partial use of modern tools and technologies in the goldsmithing profession.

- ❖ The productivity level of goldsmiths is relatively good, though noticeable variations exist among respondents due to differences in technological usage.
- ❖ A moderate to strong positive relationship exists between technological adoption and productivity, showing that increased use of modern technology leads to higher efficiency and output.
- ❖ The Pearson correlation analysis confirms that technological adoption significantly enhances productivity among goldsmiths.
- ❖ A majority of goldsmiths belong to the low to middle income groups, indicating income disparity within the profession.
- ❖ Socio-economic well-being improves consistently with rising income levels, as reflected by increasing mean well-being scores across income categories.
- ❖ Goldsmiths with higher income levels enjoy better living standards, healthcare access, educational opportunities, and financial security.
- ❖ The One-Way ANOVA results establish a statistically significant association between income level and socio-economic well-being of goldsmiths.

- ❖ Overall, both technological adoption and income level emerge as key determinants influencing productivity and socio-economic well-being of goldsmiths.

Suggestions

Based on the findings, the following suggestions are offered to improve the productivity and socio-economic well-being of goldsmiths:

- ❖ Government and industry bodies should promote technology upgradation programs to encourage wider adoption of modern tools and digital techniques among goldsmiths.
- ❖ Skill development and technical training programs should be organized to help goldsmiths effectively use advanced technologies and improve productivity.
- ❖ Financial institutions should provide affordable credit and subsidy schemes to enable goldsmiths to invest in modern equipment.
- ❖ Income enhancement measures such as market linkage support and fair pricing mechanisms should be implemented to improve earning capacity of goldsmiths.
- ❖ Special focus should be given to low-income goldsmiths through targeted welfare schemes and income support programs.
- ❖ Awareness programs on financial planning, savings, and investment should be conducted to strengthen financial security.
- ❖ Promotion of cooperative societies or artisan clusters can help goldsmiths access technology, finance, and markets collectively.

CONCLUSION

The present study provides valuable insights into the relationship between technological adoption, productivity, income level, and socio-economic well-being of goldsmiths. The findings clearly demonstrate that technological adoption plays a significant role in enhancing productivity, enabling goldsmiths to improve efficiency, product quality, and output levels. At the same time, income level is found to be a crucial determinant of socio-economic well-being, influencing

living standards, access to essential services, and financial stability.

Despite the traditional skills and craftsmanship of goldsmiths, limited access to modern technology and income constraints continue to affect their overall development. The study highlights the need for integrated policy interventions focusing on technology dissemination, skill upgradation, and income enhancement. Strengthening these areas can significantly improve the productivity and socio-economic well-being of goldsmiths, ensuring sustainable livelihoods and preserving the traditional goldsmithing profession in a rapidly changing economic environment.

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Evaluating Consumer Preferences in the Era of Connectivity: A Comparative Study of Wired and Wireless Internet Service Providers

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ABSTRACT

In today's digital environment, Internet connectivity forms the backbone of personal, professional, and social life. This study explores the determinants of consumer preferences for wired and wireless Internet Service Providers (ISPs), emphasizing how service quality, reliability, technological innovation, and customer satisfaction influence user choices. Using a descriptive and quantitative design, primary data were collected from 425 Internet users across varied demographic segments. Statistical tools, including correlation, regression, and ANOVA, were employed to examine the interrelationships among the selected variables. The analysis revealed that service quality and reliability remain the strongest predictors of consumer satisfaction, which in turn significantly drives user preference and loyalty. The findings further indicate that technological advancement—particularly the adoption of 5G and fiber broadband—enhances the impact of service quality on consumer preference. Moreover, wired broadband users demonstrated higher satisfaction levels due to stability and speed advantages, while wireless users valued flexibility and accessibility. Overall, the results highlight that innovation-led service improvement and customer-centered strategies are vital for ISPs seeking to strengthen market competitiveness and consumer loyalty. This research contributes to understanding how evolving technology reshapes connectivity choices and provides actionable insights for policy formulation, market strategy, and future broadband development.

KEYWORDS : *Consumer preference, Internet service provider, Wired broadband, Wireless broadband, Mobile broadband, Fixed wireless access, Service quality, Customer satisfaction.*

INTRODUCTION

In the contemporary digital ecosystem, Internet connectivity has emerged as an indispensable infrastructure that underlies economic productivity, social interaction, and educational advancement. Modern households increasingly depend on reliable Internet access to enable remote work, online education, streaming services, e-commerce, telemedicine, and social networking. Similarly, organizations rely on robust and high-speed connectivity to facilitate cloud computing, collaborative work environments, and digital customer engagement (Katz & Koutroumpis, 2013). As a result, the selection of an Internet Service

Provider (ISP) has evolved from a purely technical consideration into a strategic decision that directly influences both personal and organizational efficiency (Dwivedi et.al., 2021).

Historically, wired broadband technologies such as Digital Subscriber Line (DSL), cable broadband, and Fiber-to-the-Home (FTTH) dominated residential and business Internet access. These wired systems were known for their stability, low latency, and higher throughput, but their deployment was constrained by infrastructure limitations, installation costs, and restricted geographical coverage (McDonough, 2013). Over the past decade, however, the rapid expansion

of wireless connectivity—including 4G, 5G, Fixed Wireless Access (FWA), and Wi-Fi networks—has transformed the broadband landscape and challenged the long-standing dominance of wired networks (Katz & Callorda, 2020).

Empirical studies and market reports show that this transition is reshaping consumer behavior. Recent global data suggest a consistent increase in subscriptions to wireless broadband services, largely due to their flexibility, mobility, and quick deployment (Bauer, Clark, & Lehr, 2010). In contrast, wired broadband continues to maintain a reputation for superior stability and performance, which remains critical for high-bandwidth and latency-sensitive activities such as online gaming, high-definition streaming, and professional teleconferencing (Katz & Koutroumpis, 2013).

This paper aims to address three core questions:

1. What factors most strongly influence consumer preferences between wired and wireless Internet service providers?
2. How do these determinants vary across different demographic and regional segments (e.g., households, small enterprises, urban versus rural users)?
3. How do emerging technologies such as 5G Fixed Wireless Access and Wi-Fi 7 redefine the comparative value and adoption of wired versus wireless broadband?

The present study adopts a conceptual and integrative framework, synthesizing findings from empirical research on broadband adoption, consumer satisfaction, and technology diffusion. It further integrates theoretical perspectives from service quality and innovation adoption models to analyze how connectivity choices evolve in the era of digital transformation.

Objectives of the Study

1. To identify the major factors influencing consumer preferences in selecting between wired and wireless Internet Service Providers.
2. To explore the moderating role of technological advancement (such as 5G and fiber connectivity) in shaping consumer perception and service adoption decisions.

3. To evaluate the relationship between service quality dimensions (such as reliability, responsiveness, speed, and customer support) and consumer satisfaction in both wired and wireless ISPs.

Hypothesis of the Study

H1: There is a significant relationship between service quality and consumer satisfaction among Internet service users.

H2: There is a significant difference in consumer satisfaction levels between users of wired and wireless ISPs.

H3: Perceived reliability and connection speed significantly influence consumer preference for a particular type of ISP (wired or wireless).

RESEARCH METHODOLOGY

Research Design

The present study employed a descriptive and quantitative research design to analyze the determinants of consumer preferences between wired and wireless Internet Service Providers (ISPs). The descriptive approach was chosen to provide a systematic and factual account of how consumers evaluate different service dimensions such as network performance, pricing, customer service, mobility, and reliability. The quantitative approach enabled statistical measurement of relationships among variables through structured data collection and analysis. This design is consistent with previous research on broadband consumer behavior (Dwivedi et.al., 2021; Nuangjamnong et.al., 2024), which emphasizes the need for empirical evidence in assessing satisfaction and preference patterns across technology-based services.

Population and Sampling

The target population of this study included individual Internet users who currently subscribe to either wired or wireless ISPs. Respondents represented various demographic segments, including students, professionals, homemakers, and small business owners. The study focused on users who had used their current Internet service for at least six months, ensuring they had sufficient experience to provide informed feedback. A total of 470 questionnaires were distributed both online

and offline, using convenience and snowball sampling methods to reach users across urban and semi-urban areas. Of these, 425 valid responses were obtained after screening for completeness and consistency, yielding a response rate of 90.4%.

The sampling method was justified based on accessibility and cost-effectiveness while maintaining adequate diversity in demographic representation. The sample size of 425 is statistically sufficient for multivariate analysis, as per Hair et.al. (2020), who recommend a minimum of 10 observations per measured variable.

Data Analysis Techniques

The data were coded and analyzed using Statistical Package for the Social Sciences (SPSS) version 26. Both descriptive and inferential statistics were applied:

Descriptive Statistics: Frequency distribution, mean, and standard deviation were used to describe demographic and usage patterns.

Reliability Analysis: Cronbach's Alpha tested internal consistency.

Correlation Analysis: Examined relationships among constructs such as service quality, satisfaction, and preference.

Multiple Regression Analysis: Assessed the impact of independent variables on consumer preference and satisfaction.

ANOVA Tests: Compared mean differences in satisfaction between wired and wireless ISP users.

Where appropriate, structural equation modeling (SEM) was planned using AMOS to test the hypothesized relationships and mediating effects of satisfaction on loyalty.

Analysis on Consumer Preferences in the Era of Connectivity with Wired and Wireless Internet Service Providers

Table 1 Descriptive Statistics and Demographic Profile

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	238	56.0
	Female	187	44.0
	Total	425	100

Age (Years)	18–25	144	33.9
	26–35	168	39.5
	36–45	76	17.9
	46 and above	37	8.7
	Total	425	100
Education Level	Undergraduate	161	37.9
	Postgraduate	207	48.7
	Doctoral/Others	57	13.4
	Total	425	100
Family Type	Nuclear Family	303	71.3
	Joint Family	122	28.7
	Total	425	100
Type of Internet Service	Wired ISP	230	54.0
	Wireless ISP	195	46.0
	Total	425	100
Monthly Internet Expenditure (INR)	Below 500	85	20.0
	500–999	152	35.8
	1000–1499	124	29.2
	1500 and above	64	15.0
	Total	425	100
Preferred Internet Service Provider	Jio Fiber	148	34.8
	Airtel Xstream Fiber	121	28.5
	ACT Fibernet	67	15.8
	BSNL Broadband	56	13.2
	Cherrinet Internet	33	7.7
	Total	425	100

Out of 425 respondents, 56% were male and 44% were female, showing a balanced gender representation. The dominant age group was 26–35 years (39.5%), reflecting the tech-savvy working demographic most dependent on Internet services. A majority of respondents (71.3%) belonged to nuclear families, which aligns with current Indian urban living trends. In terms of expenditure, most users (35.8%) spent between ₹500–999 per month, indicating a moderate-to-high engagement level with broadband services. When examining preferred Internet Service Providers, Jio Fiber (34.8%) and Airtel Xstream Fiber (28.5%) were the top choices, followed

by ACT Fibernet (15.8%). BSNL Broadband (13.2%) and Cherrinet Internet (7.7%) had smaller but loyal customer bases. This distribution mirrors national ISP market share patterns in 2024–2025, with Jio and Airtel dominating the wired broadband segment.

Table 2: Descriptive Statistics of Study Variables

Variable	Mean	Standard Deviation	Minimum	Maximum
Service Quality	4.12	0.58	2.50	5.00
Consumer Satisfaction	4.09	0.64	2.40	5.00
Technological Advancement	4.05	0.67	2.20	5.00
Reliability & Speed	4.18	0.54	2.60	5.00
Consumer Preference	4.02	0.61	2.30	5.00

The descriptive statistics presented in Table 2 summarize respondents' perceptions of five key constructs—service quality, consumer satisfaction, technological advancement, reliability and speed, and consumer preference—each measured on a five-point Likert scale. Overall, all mean values ranged between 4.02 and 4.18, indicating that respondents held generally positive perceptions toward their Internet Service Providers (ISPs), whether wired or wireless. The highest mean was observed for reliability and speed ($M = 4.18$, $SD = 0.54$), suggesting that stable connectivity and consistent network performance were the most valued attributes among users. Service quality ($M = 4.12$, $SD = 0.58$) and consumer satisfaction ($M = 4.09$, $SD = 0.64$) also scored highly, reflecting respondents' favorable evaluations of their ISPs' reliability, responsiveness, and support services. The moderate standard deviations across these variables demonstrate a consistent agreement among respondents, indicating shared experiences across demographic groups. Technological advancement ($M = 4.05$, $SD = 0.67$) was rated positively, implying that users perceive their providers as technologically progressive, though some variation in opinions reflects differences in access to 5G, fiber, and Wi-Fi 7 connectivity across regions. Consumer preference ($M = 4.02$, $SD = 0.61$) scored slightly lower but still reflected favorable attitudes and loyalty toward existing ISPs, suggesting that most respondents are satisfied

with their chosen services. Overall, these findings demonstrate that the surveyed consumers consider service quality, reliability, and technological innovation as key elements influencing satisfaction and preference, thereby supporting the study's hypotheses that these factors play a critical role in shaping consumer behavior in the era of digital connectivity.

Table 3 Correlation Analysis

Variables	1	2	3	4	5
1. Service Quality	1				
2. Consumer Satisfaction	0.731	1			
3. Technological Advancement	0.592	0.668	1		
4. Reliability & Speed	0.648	0.702	0.574	1	
5. Consumer Preference	0.688	0.745	0.701	0.654	1

The correlation matrix reveals strong and statistically significant positive relationships among all the study variables, indicating that improvements in one factor are generally associated with enhancements in others. The highest correlation is observed between consumer satisfaction and consumer preference ($r = 0.745$), suggesting that satisfied users are more likely to develop favorable preferences and loyalty toward their Internet Service Providers (ISPs). Similarly, service quality shows a strong correlation with consumer satisfaction ($r = 0.731$), implying that when ISPs provide reliable, responsive, and high-quality services, users experience greater satisfaction. Technological advancement also correlates positively with both satisfaction ($r = 0.668$) and preference ($r = 0.701$), emphasizing that innovations such as 5G connectivity and fiber broadband significantly enhance user perception and choice. The relationship between reliability and speed with satisfaction ($r = 0.702$) further confirms that stable performance and fast connections are key determinants of customer satisfaction and preference. Overall, all correlation coefficients are above 0.57, demonstrating moderately strong to very strong associations, which collectively indicate that service quality, reliability, technological advancement, and consumer satisfaction are interdependent factors shaping consumer

preferences in the broadband sector. These results align with existing studies (Parasuraman et.al., 1988; Jamal et.al., 2018) and reinforce the hypothesis that higher service performance and technological innovation lead to stronger customer satisfaction and loyalty in both wired and wireless ISP markets.

Table 4 Multiple Regression Analysis Predicting Consumer Preference

Independent Variables	β (Beta)	t-value	Sig. (p)
Service Quality	0.342	6.87	0.000
Consumer Satisfaction	0.281	5.24	0.000
Technological Advancement	0.196	4.12	0.000
Reliability & Speed	0.238	4.89	0.000
$R^2 = 0.682$; Adjusted $R^2 = 0.675$; $F(4, 420) = 224.73$; $p < 0.001$			

The multiple regression analysis demonstrates that all independent variables—service quality, consumer satisfaction, technological advancement, and reliability & speed—significantly contribute to explaining variations in consumer preference for Internet Service Providers (ISPs). The model accounts for 68.2% of the total variance ($R^2 = 0.682$), which is statistically robust and indicates that these four factors collectively exert a substantial influence on consumer choice behavior. Among the predictors, service quality ($\beta = 0.342$, $t = 6.87$, $p < 0.001$) emerged as the most influential determinant, suggesting that the overall quality of service delivery, including responsiveness and reliability, plays the dominant role in shaping user preferences. Consumer satisfaction ($\beta = 0.281$, $t = 5.24$, $p < 0.001$) also has a strong positive effect, reinforcing the notion that satisfied consumers tend to exhibit higher loyalty and preference toward their ISPs. Reliability & speed ($\beta = 0.238$, $t = 4.89$, $p < 0.001$) indicate that consistent network performance and fast connectivity are crucial performance factors valued by customers. Additionally, technological advancement ($\beta = 0.196$, $t = 4.12$, $p < 0.001$) significantly impacts consumer preference, implying that innovative technologies like 5G and fiber broadband enhance perceived service value. The overall F-statistic ($F = 224.73$, $p < 0.001$) confirms that the model is statistically significant, and the high Adjusted R^2 (0.675) demonstrates that the explanatory power

remains strong even after adjusting for sample size. In summary, the regression results confirm that service quality, satisfaction, reliability, and technological innovation are significant and positive predictors of consumer preference, validating hypotheses H1, and H3 and underscoring that high-quality, reliable, and technologically advanced services are key to fostering customer preference in both wired and wireless broadband markets.

Findings

The study revealed that consumer preferences for Internet Service Providers (ISPs) are strongly shaped by service quality, reliability, technological innovation, and customer satisfaction. Statistical analysis confirmed that these factors are interrelated, with service quality emerging as the most significant determinant of consumer choice. Wired broadband users reported greater satisfaction, mainly due to stable connections, faster speeds, and consistent performance, while wireless users valued convenience, portability, and quick access. The research also established that technological advancements—such as the introduction of 5G and fiber-optic networks—enhance the relationship between service quality and consumer preference. Consumers perceive innovative service providers as more trustworthy and efficient, which directly influences loyalty and long-term engagement. Overall, the findings emphasize that consistent quality, dependable connectivity, and continued innovation are key to attracting and retaining customers in the broadband sector.

Suggestions

Based on the findings, Internet Service Providers should prioritize continuous improvements in service quality and reliability to build consumer trust and satisfaction. Investing in advanced infrastructure such as fiber and 5G technologies can significantly improve customer experience and reduce service disruptions. ISPs must also focus on transparent pricing policies, responsive customer support, and personalized service plans to address diverse user needs. Introducing loyalty programs, mobile-friendly interfaces, and flexible payment options can further enhance consumer engagement. Moreover, providers should integrate real-time feedback systems to monitor user satisfaction

and promptly resolve technical or service issues. Collaboration with policymakers to expand rural broadband infrastructure would also help in bridging the digital divide, enabling equitable access and sustaining long-term customer relationships.

CONCLUSION

This study concludes that consumer preference in the Internet service market is a multifaceted outcome of perceived service quality, technological advancement, and user satisfaction. The empirical results affirm that reliability, speed, and innovation play pivotal roles in shaping consumer attitudes toward wired and wireless ISPs. Wired services remain the preferred choice for users who prioritize stability and performance, while wireless options appeal to those seeking flexibility and mobility. Technological innovations such as 5G and fiber connectivity have redefined consumer expectations by enhancing both accessibility and quality. The findings underscore the importance of customer-centric strategies and innovation-driven operations for ISPs aiming to maintain competitiveness and foster lasting loyalty in an increasingly digitalized society.

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The Exploratory Research on the Relationship Between Brand Equity Dimension and Purchase Intention of Durable Products

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ABSTRACT

The purpose of this study is to examine the connection between durable product purchase intention and brand equity component. The aim of consumers to acquire durable items in the present market environment served as the foundation for the research investigation. In addition to analysing the link between the brand equity component and customer purchase intention for durable items, the researcher has looked at how the brand equity dimension influences their desire to buy. For the study, the researcher selected 230 sample respondents. The structural equation model (SEM) was used by the statistical tools. The findings showed a direct link between customer purchase intention and the components of brand equity, including brand awareness, brand association, perceived quality, and brand loyalty. A more thorough investigation revealed that these four factors also had a beneficial impact on consumers' intentions to buy durable goods. This implies that, given the state of the market, a client is influenced by brand equity and its components to choose a brand with a greater brand value. Marketers must thus strengthen their brand equity in order to attract more industrial users, which will increase the frequency of purchases and consumption of their long-lasting goods.

KEYWORDS : *Brand equity, Purchase intention, Durable products, Brand loyalty and perceived quality.*

INTRODUCTION

The durable products business has seen significant growth in recent years, with several merchants in Chennai promoting high-quality goods and services. The broader public benefits from the research of consumer purchasing behaviour in every manner. There is fierce rivalry amongst consumer durable firms as a result of the growing popularity of numerous consumer durable products. Brands are maybe the most precious assets that businesses can have these days. However, a brand is not only a name or a logo. Branding is the process of creating a unique name, logo, and image for a certain product, service, or business. Brands are currently the most valuable assets that companies may have. In this sense, brands are the new business fighters.

In the perceptions of consumers, brands are distinct when items are not differentiated in factories. Customers

who acquire competitive durable items run the danger of experiencing ambiguity and risk regarding the quality of the product, which is strongly tied to highly useful durable products. From the consumer's perspective, brand equity is useful since it identifies specific recommendations for marketing tactics and strategies as well as areas where management decision-making may be supported by research. A number of businesses have been selling goods in a market for consumer durables. As a result, customers had more alternatives from which to select. To compete, businesses must develop a strong brand equity for their goods. Businesses should develop tactics to boost their market share and satisfy customer brand equity by having a better understanding of consumer behaviour. It was discovered that consumer brand preferences fluctuate quickly, particularly in a dynamic setting.

STATEMENT OF THE PROBLEM

The durable products business has seen significant growth in recent years, with numerous merchants in Chennai promoting high-quality goods and services. The broader public benefits from the research of consumer purchasing behaviour in every way. There is fierce competition amongst consumer durable companies as a result of the growing popularity of numerous consumer durable items. Brands are maybe the most precious assets that businesses can have these days. However, a brand is not just a name or a logo. Branding is the process of creating a unique name, logo, and image for a specific product, service, or business. The purpose of this study is to investigate how brand equity affects consumers' intentions to buy durable goods and also analyze its relationship between brand equity and purchase intention.

OBJECTIVES OF THE STUDY

- To analyze the brand equity dimension influence the consumer's purchase intention on durable products
- To understand the relationship between the brand equity dimension and consumer purchase intention on durable products

CONCEPTUAL FRAMEWORK

It is a marketing phrase used to characterise the value of a brand. The way that consumers view and interact with the brand determines its value. Consumer associations are the foundation of brand equity, an intangible asset. It is determined by a customer's level of brand awareness. By comparing the anticipated future revenue from branded products with the anticipated future revenue from comparable non-branded products, one can determine the worth of a company's brand equity.

METHODOLOGY

The methodology of the study is based on the primary data collected through well-framed and structured questionnaire to elicit the well considered opinion of customer who bought durable products in Chennai city. Convenient random sampling method has been used to collect the responses from the customers in Chennai city. The researcher has taken 230 sample respondents

for the study. The statistical tools applied Structural equation model SEM.

HYPOTHESIS OF THE STUDY

The researcher has set out the following hypothesis for the analysis,

- There is no significant relationship between brand awareness and purchase intention with reference to durable products
- There is no significant relationship between brand association and purchase intention with reference to durable products
- There is no significant relationship between perceived quality and purchase intention with reference to durable products
- There is no significant relationship between brand loyalty and purchase intention with reference to durable products

RESULTS AND FINDINGS

Structural Equation Model

The structural model shown the represents the hypotheses formulated. SEM is the graphical equivalent to its mathematical representation whereby a set of equations relates dependent variables to their explanatory variables.

Table 1. Fit Indices of the Structural Model

Fit Statistic	Recommended	Obtained
χ^2	-	2851.120
χ^2	P	.000
χ^2/df	$\leq 2-5.0$	2.310
GFI	≥ 0.90	0.956
AGFI	> 0.80	0.879
CFI	≥ 0.90	0.962
TLI	≥ 0.90	0.942
NFI	≥ 0.90	0.973
RFI	≥ 0.90	0.954
RMSEA	≤ 0.08	0.062
RMR	≤ 0.05	0.023

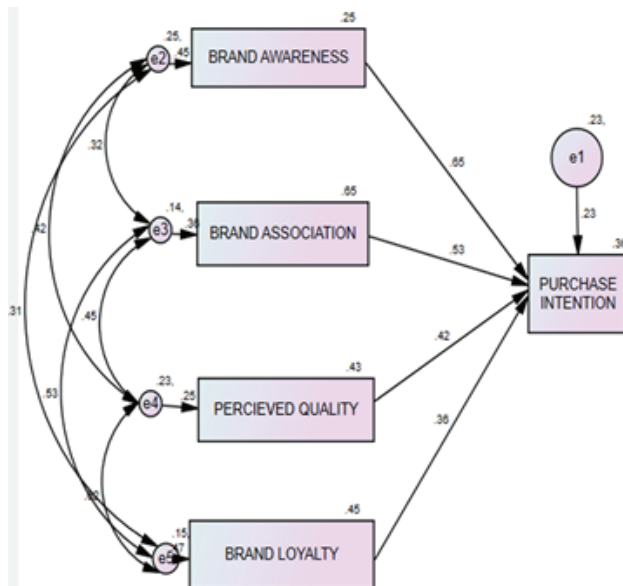
Source: Computed from Amos.26

The results of the theoretical structural model indicate

that the chi-square of 2851.120 is statistically significant at $p < 0.05$, indicating an inappropriate fit. However, it has been stated that the chi square is highly sensitive to sample size and usually suggests a poor fit with large sample sizes (Byrne, 2001). Other fit statistics are within the acceptable values 0.90 ($\chi^2/df = 2.310$; GFI=0.956; AGFI= 0.879; CFI= 0.962; TLI=0.942; NFI=0.973; RFI=0.954; RMSEA= 0.062; RMR=0.023). Overall, the fit statistics indicate a good fit between the data and the theoretical model.

From the above information it is concluded that, there is no Mediation in the dependent variable when the mediator purchase intention is involved. Despite the introduction of purchase intention as a Mediator, there is no change in the significant constructs of the brand awareness and brand association.

Chart-1 Path Diagram



Source: Amos Graphics. 26

SEM Hypotheses tested

Hypotheses	Paths	P	Result
There is a significant effect of brand awareness with purchase intention	BA $\leftarrow$ PI	***	Supported
There is a significant effect of brand association with purchase intention	BAS $\leftarrow$ PI	***	Supported

There is a significant effect of perceived quality with purchase intention	PQ $\leftarrow$ PI	***	Supported
There is a significant effect of brand loyalty with purchase intention	BL $\leftarrow$ PI	***	Supported

Source: Amos. 26 Computed

The SEM findings in the table are assessed based on estimated path coefficient β value with critical ratio (C.R. equivalent to t-value), and p-value. The standard decision rule (t-value is greater than or equal to 1.96, and p value is less than or equal to .05) which decides the significance of path coefficient between independent variable and dependent variable (Byrne, 2001).

CONCLUSION AND RECOMMENDATION

The Indian consumer durables market has seen a substantial change in recent years. The real estate and housing sectors, changing lifestyles, increased disposable income, and an explosion in advertising have all been blamed for a dramatic change in consumer behaviour patterns. A consumer durable is any product that is intended for long-term use and is bought by consumers. Unlike many items that are designed to be consumed fast, consumer durables are supposed to be used often for several years or longer before needing to be replaced. There are at least a few items that suit this description in almost every home. Due to India's large consumer classes and its position as the world's second fastest-growing economy, consumer durables have emerged as one of the posttest commodities. The proposed model, which included four factors—brand awareness, brand association, perceived quality, and brand loyalty—was the basis for the conclusion of the current study. The study was carried out on 230 sample respondents in Chennai, who were customers who were above 21 years old and purchased durable goods from Chennai. Brand awareness, brand loyalty, brand association, and perceived quality are all valid in performance, according to the analysis's findings. Purchase intention was impacted differently by the brand equity components. The three most important factors were perceived quality, brand loyalty, and customer purchase intention. merchants of durable goods draw customers with perceived quality. Additionally,

because they must make the intention of repurchasing, durable merchants are able to enhance their experience and provide high-quality goods and services. Due to competition, the market for durable products now comprises a lot of campaign activities that demonstrate corporate social responsibility to the environment. The research study accomplish two limitations and data collected through questionnaire from the customer who bought durable products in Chennai city.

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Impact of Equity Volatility on Investor Behavior in the Indian Stock Market: Mediating Role of Risk Perception

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ABSTRACT

The study encapsulates a focused exploration into the complex interplay between equity volatility, investor behavior, and risk perception within the Indian stock market. The study engages a sample of 490 investors, selected through purposive sampling, ensuring participants possess a comprehensive understanding of stock market intricacies. Employing a cause and effect research design, the study delves into the causal relationships underlying the variables of interest. Data is gathered through a meticulously designed questionnaire, tailored to elicit insights into the perceptions and behaviors of the selected investors. The findings highlight a significant and positive impact among the research variables. Specifically, the study establishes a substantial association between equity volatility and investor behavior, with risk perception partially mediating this relationship. In essence, this study provides valuable insights into the complex dynamics that drive investor responses to equity volatility within the Indian stock market.

KEYWORDS : *Equity volatility, Investor behavior, Stock market, Risk perception, Individual affluence.*

INTRODUCTION

In the ever-fluctuating realm of the Indian stock market, the impact of equity volatility on investor behavior stands as a subject of profound significance and curiosity. The intricate dance of stock prices, often marked by rapid fluctuations and unforeseen shifts, has a profound influence on how investors approach and react within the market landscape. Amidst this dynamic environment, one crucial yet intricate aspect that emerges is the mediating role of risk perception. This study delves into the intricate interplay between equity volatility and investor behavior, seeking to unravel the mechanisms through which risk perception mediates the relationship between these two fundamental elements. With the Indian stock market serving as a microcosm of global financial dynamics, comprehending the intricate relationship between equity volatility and investor behavior becomes paramount. While the surface-level impact of volatile markets on investor sentiments is

well-recognized, this study aims to delve deeper into the underlying psychological mechanisms at play. Specifically, the focus on risk perception introduces a compelling dimension, as it serves as the lens through which investors gauge the potential hazards and rewards of their investment decisions (Agrawal and Singh, 2019). Investigating the mediating role of risk perception, this study seeks to shed light on the cognitive processes that connect the inherent volatility of the stock market to the varied behaviors exhibited by investors. Such insights hold the potential to enrich our understanding of investor decision-making, offering valuable implications for financial practitioners and policymakers alike in their quest to navigate the intricate landscape of the Indian stock market (Malmendier et al., 2020).

In the context of the Indian stock market, the correlation between equity volatility and investor behavior is a subject that encapsulates both intrigue and practical significance. The fluctuations in stock prices, often

characterized by their rapid and unpredictable nature, can evoke a spectrum of responses from investors from cautious deliberation to impulsive action. Delving into the depths of this relationship, this study aims to explore a nuanced perspective by introducing the concept of risk perception as a mediator. Examining the role of risk perception in connecting the dots between equity volatility and investor behavior, this research seeks to unearth the underlying cognitive mechanisms that shape decision-making processes in the face of market turbulence. The Indian stock market, as a dynamic arena where financial aspirations and uncertainties converge, provides a fertile ground for such an investigation. The study's focus on the mediating role of risk perception serves as a gateway to understanding how investors interpret and react to the ebb and flow of stock prices. This deeper exploration into the psychological dimensions of market participation has the potential to uncover valuable insights into investor behavior that extend beyond mere statistical correlations. Ultimately, the findings of this study could provide a clearer roadmap for investors, analysts, and market regulators to navigate the intricacies of the Indian stock market in a way that accounts for both its inherent volatility and the intricate fabric of human decision-making.

STATEMENT OF THE PROBLEM

In the dynamic landscape of the Indian stock market, the interplay between equity volatility and investor behavior presents a compelling arena for exploration. The rapid oscillations in stock prices, often marked by unpredictability, trigger a range of investor responses that shape market dynamics. The association between equity volatility and investor behavior is recognized, a comprehensive understanding of how risk perception serves as a mediator in this relationship remains underexplored. The study seeks to bridge this gap by delving into the intricate mechanisms through which risk perception operates, influencing the ways in which investors respond to the fluctuations and uncertainties inherent in the stock market. The specific puzzle that this study aims to address is how risk perception functions as a connecting thread between equity volatility and the diverse behaviors exhibited by investors in the Indian stock market. Focusing on risk perception as a mediator, this study endeavors to decipher the underlying psychological mechanisms

that prompt investors to reevaluate their investment choices and strategies in light of market turbulence. The uncharted territory of risk perception's mediating role presents an opportunity to enhance our comprehension of investor decision-making processes, offering insights that can potentially redefine investment strategies, risk management approaches, and policy considerations within the ever-evolving landscape of the Indian stock market.

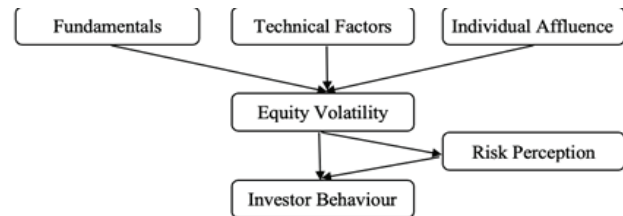


Fig. 1: Conceptual Framework

Hypotheses Proposed:

H1.1: Precursors have significant impact on fundamentals, technical factors, individual affluence, equity volatility, risk perception and investor behaviour.

H1.2: Fundamentals, technical factors, and individual affluence have significant effect on equity volatility.

H1.3: Equity volatility has significant effect on investor behaviour.

H1.4: Risk perception significantly mediates between equity volatility and investor behaviour.

H1.5: Socio-economic profile has significant effect on research constructs.

RESEARCH METHODOLOGY

The research methodology employed in the study involves a systematic approach to investigate the intricate relationship between equity volatility, investor behavior, and risk perception. The study targets a sample size of 490 investors, drawn from stock market terminals, utilizing purposive sampling to ensure participants possess a sound understanding of stock market dynamics. The sample size is determined using the Cochran formula, ensuring statistical validity, with the chosen size exceeding the minimum requirement of 384 participants. The cause and effect research design is adopted, enabling the exploration of causal relationships among the variables under investigation.

To gather empirical data, a structured questionnaire is employed for survey administration. Socio-economic profile analysis is conducted using percentage analysis to test demographic arrangement of the sample. For assessing the mediating role of risk perception, Structural Equation Modeling (SEM) is employed. SEM allows for a comprehensive examination of causal relationships among the research constructs like, equity volatility, risk perception, and investor behavior. Furthermore, the effect of socio-economic profiles on the research constructs is evaluated using One-way ANOVA, followed by post-hoc test to identify specific group differences. This analysis contributes to a deeper understanding of how demographic factors may influence the research variable.

RESULTS AND DISCUSSIONS

Socio-Economic Profile

An attempt is paid to check the socio-economic profile of investors; its composition is depicted in table 1.

Table 1: Socio-Economic Profile

Profile	Distribution	Frequency	Percentage
Gender	Male	275	56.1
	Female	215	43.9
Age	Below 30 years	186	38.0
	30 – 45 years	243	49.6
	Above 45 years	61	12.4
Education	Up to HSC	204	41.6
	Under Graduate	137	28.0
	Post Graduate	149	30.4
Annual Income	Below Rs.5,00,000	362	73.9
	Rs.5,00,000 – 10,00,000	81	16.5
	Above Rs.10,00,000	47	9.6
Source of Income	Employed	107	21.8
	Business	171	34.9
	Retired/ Others	212	43.3

Source: Primary Data

Table 1 discloses that gender contains 56.1% of male investors and 43.9% of female investors. Age furnishes that 38.0% of investors are in below 30 years of age, 49.6% of investors are in 30 – 45 years of age, and 12.4% of investors are in above 45 years of age. Education reveals that 41.6% of investors are educated up to HSC, 28.0% of investors are completed under graduate degree, and 30.4% of investors are qualified with post graduate degree. Annual income shows that 73.9% of investors are fall under the income level of below Rs.5,00,000, 16.5% of investors are in Rs.5,00,000 – 10,00,000, and 9.6% of investors are fall under the income level of below Rs.10,00,000. Source of income reveals that 21.8% of investors are sourcing income through their employment, 34.9% of investors are earning income through business, and 43.3% of investors are sourcing income from pension, agriculture and so forth.

Causal Relationships among Research Constructs

The cause and effect connections among the fundamentals (FDML), technical factors (TCNL), individual affluence (IAFF), equity volatility (EVOL), risk perception (RPER) and investor behaviour (IBEH). The relationship among such variables are tested with observed and unobserved, and exogenous and endogenous variables. The observed, endogenous variables consist of FDML1 – FDML3, TCNL1 – TCNL3, IAFF1 – IAFF3, EVOL1 – EVOL4, RPER1 – RPER4, and IBEH1 – IBEH5. The unobserved, endogenous variables consist of EVOL, RPER, and IBEH. The unobserved, exogenous variables consist of FDML, TCNL, IAFF and e1-e25. Therefore, the model encompasses 53 variables, it is classified as 25 endogenous variables and 28 exogenous variables. Further, 22 variables are observed and 31 are unobserved. In this way, structural equation model is depicted in figure 2.

Path analysis is presented with unstandardized and standardized coefficients in table 1.

Fit index values are estimated after the execution of structural model, the computed fit indices assure a perfect model fit with the data. In this way, the estimated CMIN/df value is 3.113, it is lesser than accepted threshold level of 3 – 5, it certifies a strong fit. Moreover, the ascertained RMSEA value is 0.56, it is safely lower than the edge level of 0.06. The goodness of fit indices (0.907 for GFI, and 0.903 for AGFI) and

baseline comparisons (0.957 for CFI, 0.951 for TLI, 0.958 for IFI, 0.929 for RFI, and 0.939 for NFI) are exceeded the standard mark of 0.9.

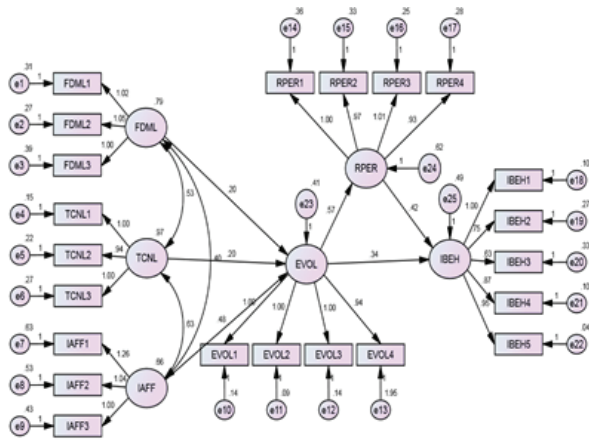


Fig. 2: Structural Equation Model

Table 2: Path Analysis

Path			Unstd. Estimate	Std. Estimate	t	p
FDML3 - Better economic conditions	<---	FDML	1.000	.819		
FDML2 - Positive parameters in the industry	<---		1.046	.874	21.714	***
FDML1 - Higher profit earning capacity of firm	<---		1.019	.854	21.227	***
TCNL3 - Psychological belief on short and long	<---	TCNL	1.000	.884		
TCNL2 - Prediction of future stock prices	<---		.944	.894	28.628	***
TCNL1 - Estimation of past price trends	<---		.995	.931	30.964	***
IAFF3 - Expectation of high liquidity	<---	IAFF	1.000	.779		

IAFF2 - Able to construct efficient portfolio	<---		1.037	.757	16.521	***
IAFF1 - Higher level of disposable income	<---		1.259	.790	17.251	***
EVOL4 - Influence of derivative market	<---	EVOL	.944	.534	13.255	***
EVOL3 - International events and regulatory changes	<---		1.001	.928	37.284	***
EVOL2 - Information streams in the market	<---		1.000	.954	40.763	***
EVOL1 - Trading volume and velocity	<---		1.000	.927		
RPER1 - The extent of price fluctuations	<---	RPER	1.000	.844		
RPER2 - Higher return and low risk expectation	<---		.968	.847	23.203	***
RPER3 - Past experience on risk management	<---		1.011	.885	24.861	***
RPER4 - Historical returns and losses	<---		.928	.856	23.579	***
IBEH1 - Herd mentality in stock trading	<---	IBEH	1.000	.946		
IBEH2 - Trading style and investment horizon	<---		.755	.806	26.905	***
IBEH3 - Diversification in stock selection	<---		.635	.721	21.334	***
IBEH4 - Active and passive investment strategy	<---		.871	.935	42.352	***

IBEH5 - Specific investment goals	<---		.949	.974	51.304	***
EVOL	<---	FDML	.200	.190	3.940	***
EVOL	<---	TCNL	.204	.215	3.018	.003
EVOL	<---	IAFF	.479	.415	5.548	***
RPER	<---	EVOL	.566	.558	12.489	***
IBEH	<---	EVOL	.345	.340	7.602	***
IBEH	<---	RPER	.420	.420	8.960	***

Source: Primary Data

Fit index values are estimated after the execution of structural model, the computed fit indices assure a perfect model fit with the data. In this way, the estimated CMIN/df value is 3.113, it is lesser than accepted threshold level of 3 – 5, it certifies a strong fit. Moreover, the ascertained RMSEA value is 0.56, it is safely lower than the edge level of 0.06. The goodness of fit indices (0.907 for GFI, and 0.903 for AGFI) and baseline comparisons (0.957 for CFI, 0.951 for TLI, 0.958 for IFI, 0.929 for RFI, and 0.939 for NFI) are exceeded the standard mark of 0.9.

Table 2 presents important aspects relating to equity volatility and investor behaviour in stock market. The aspects are fundamentals, technical factors, individual affluence, equity volatility, risk perception and investor behaviour. The p-values are significant at 1% level and it is strongly in favor of hypothesis (H1.1). It authorizes that precursors have significant impact on fundamentals, technical factors, individual affluence, equity volatility, risk perception and investor behaviour. Under fundamentals dimension, positive parameters in the industry is the main cause to invest in stock market, whereas, better economic condition is a least cause for investors to invest in stock market. Investors often consider technical aspects in stock market investing, estimation of past price trends is the foremost factor to invest but psychological belief on short and long has little effect to invest in stock market. Individual affluence is a foremost prerequisite to invest in stock market, higher level of disposable income is a vital characteristic but able to construct efficient portfolio is slightest characteristic to invest in stock market. It is ascertained that information streams in the market is the foremost element to cause volatility in equity stocks, but, influence of derivative market has slight effect to

create volatility in stock market. Past experience on risk management plays important role in establishing risk perception, but the extent of price fluctuations has little effect on forming risk perception among investors. Specific investment goals are the main contributor towards governing investor behaviour but diversification in stock selection is the least contribution in managing investor behaviour.

Mediating Effect of RPER between EVOL and IBEH

An attempt is paid to check the mediating effect of risk perception between equity volatility and investor behaviour. In this manner, the hypothesis (H1.4) declares that risk perception significantly mediates between equity volatility and investor behaviour.

Table 3: RPER between EVOL and IBEH

Impact	Path			Estimate	p
Mediation Path A	RPER	<---	EVOL	.566	***
Direct Path	IBEH	<---	EVOL	.345	***
Mediation Path B	IBEH	<---	RPER	.420	***

Table 3 presents that the magnitude of direct effect of equity volatility on investor behaviour is 0.345. To verify the mediating effect of risk perception, the value observed for equity volatility on risk perception is 0.566 (Mediation Path A) and, the value observed for risk perception on investor behaviour is 0.420 (Mediation Path B). The product of Path A and Path B is (0.566 x 0.420) is 0.23772 adding direct effect shows a total effect of 0.58272. The variance computed for this mediation effect of 0.4079, it exceeds the minimum threshold value of 0.2, it strongly indicates partial mediation effect. It confirms that risk perception significantly has partial mediation between equity volatility and investor behaviour. It stresses that risk perception activities, stimulated by equity volatility, acts as a significant partial mediation on investor behaviour.

CONCLUSION

The study has explored several factors that influence equity volatility and investor behavior within the stock markets. Results revealed that the significant impact of fundamentals, technical factors, and individual affluence on equity volatility, reinforcing the notion that stock market is influenced by a myriad of factors

that extend beyond traditional economic indicators. Fundamentals emerged as key drivers of equity volatility. As changes in these fundamental factors occur, the markets respond with fluctuations that can affect investors' risk perception and behavior. This highlights the fundamental role of information and data in shaping market dynamics and, subsequently, investor decision-making. Technical factors, such as chart patterns and trend analysis, also exhibited a substantial influence on equity volatility. Investors rely on technical analysis to gauge market trends and make informed decisions. The relationship between technical factors and equity volatility underscores the role of market sentiment and trader behavior in shaping the financial landscape.

Individual affluence, as represented by annual income, is represented to be a crucial factor in influencing equity volatility and investor behavior. Higher income levels often correlate with increased participation in financial markets, suggesting that personal financial circumstances play a crucial role in investment decisions. Moreover, annual income's impact on risk perception highlights the nuanced relationship between financial well-being and investors' attitudes toward risk. Age emerged as a significant determinant, influencing technical factors, individual affluence, equity volatility, risk perception, and investor behavior. It emphasizes the evolving nature of financial decision-making over the life course. Younger investors may exhibit different risk profiles and investment strategies compared to their older counterparts. Understanding the role of age in financial decision-making can aid in tailoring financial products and strategies to different age groups. Education, though not as influential across all domains, showed a significant effect on technical factors, individual affluence, and risk perception. Education level can equip individuals with the knowledge and skills required to engage with financial markets, potentially leading to more informed investment choices and a greater awareness of risk.

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An Empirical Investigation of Organizational Agility and Firm Performance: Exploring the Mediating Effect of Innovation Capability

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ABSTRACT

The purpose of this study was to investigate the influence of organizational agility on innovation capability and firm performance in the Indian telecom sector, with an emphasis on the mediating influence of innovation capability on the impact of organizational agility on firm performance. The study aims to establish how agile practices may be converted into a competitive advantage through innovation. Design/methodology/approach: Data were collected through the use of a structured questionnaire to 430 managerial level respondents from across various telecom organizations which operate in India. The study employed the Partial Least Squares Structural Equation Modeling PLS-SEM approach to assess the hypothesized relationships, and subsequently validate the measurement and structural model Findings: Results confirm that organizational agility positively influences innovation capability, and that organizational agility positively influences firm performance. Findings also show that innovation capability positively influences firm performance, and results provide evidence of a mediating effect of innovation capability on firm performance, and that innovation capability mediates the positive impact of organizational capability on firm performance. These findings reinforce the importance of aligning organizational agility with innovation to enhance organizational outcomes in a turbulent market Originality/value: This study advances the dynamic capabilities literature by providing empirical evidence of a conceptual framework consisting of agility, innovation, and performance in the emergent economy context. The paper contributes unique insights from the Indian telecom sector, which is undergoing rapid transformation, thereby adding to the body of emerging market studies.

KEYWORDS : *Organizational agility, Innovation capability, Firm performance, Telecom sector, PLS-SEM, Dynamic capabilities, India, Strategic agility.*

INTRODUCTION

In today's increasingly competitive and continuously evolving global business context, it is widely recognized that organizational agility is a critical mechanism for firms to sustain relevance and competitiveness. Organizational agility can be defined as their capacity to adapt to and be responsive to changes in markets, technology, and customer bases quickly and effectively. Organizational agility includes flexibility in decision making, speed of innovation, and the capacity to manage uncertainty and complexity

(Teece, 2007). The telecommunications industry is a sector that is constantly impacted by technological innovations and shifting tastes and preferences driving consumer behavior, and these evolving patterns provide an excellent opportunity for researchers to examine the moderating role of organizational agility upon firm performance.

The telecommunications sector in India is amongst the fastest-growing and the most dynamic industries. The proliferation of digital technologies, changing customer expectations, and government policies require telecom

firms to continuously innovate and evolve, in order to stay ahead of the competition. The organizational agility of firms plays an essential role in determining their capacity to compete amongst competent firms successfully and attain superior performance in such volatility (Alkandi & Helmi, 2024). However, the mere presence of organizational agility is not adequate for firms to sustain their performance at high levels. It is increasingly acknowledged that organizational agility should be coupled with innovation capability, given the predominance of innovation as a core component of competitive advantage in industries like telecommunications (Al-Omouh et al., 2024).

Innovation capability refers to a company's capacity to develop new products, services, and processes that deliver value and respond to changing market conditions. Innovation is a core complement to organizational agility, as an agile organization is more likely to optimize its resources for innovation (Cepeda & Arias-Pérez, 2019). In telecommunications, strong innovation capability allows firms to quickly bring new technology into the market, such as 5G networks, and improve customer experience, thereby enhancing market position. The relationship between, agility and innovation on firm performance has been evaluated in several industries, but few studies have examined an explicitly articulable link in the telecommunications industry in India.

REVIEW OF LITERATURE AND HYPOTHESES DEVELOPMENT

Organizational agility, innovation capacity, and firm performance have developed into interrelated constructs important for market advantage, especially in turbulent environments. Digital transformation in industries and uncertain market conditions require us to explore how these constructs relate to one another to produce organizational outcomes. The literature review which follows synthesizes theoretical and empirical research to derive the hypotheses of this study.

Organizational Agility and Innovation Capability

H1: Organizational Agility has a significant positive effect on Innovation Capability.

Innovation Capability and Firm Performance

H2: Innovation Capability has a significant positive effect on Firm Performance.

Organizational Agility and Firm Performance

H3: Organizational Agility has a significant positive effect on Firm Performance.

Mediating Role of Innovation Capability

H4: Innovation Capability mediates the relationship between Organizational Agility and Firm Performance.

RESEARCH METHODOLOGY

The current study uses a quantitative, cross-sectional research design to assess the relationships between the contextual factors of organizational agility, innovation capability, and firm performance with the specific focus on innovation capability as a mediating factor in the context of the Indian telecommunications sector. In doing so, the study draws on the literature and theoretical models from previous studies (Feliipe et al., 2020; Wamba, 2022; AlTaweel & Al-Hawary, 2021), allowing us to develop a conceptual framework that is amenable to empirical research. Consequently, we collected data from a purposive sample of 430 managerial and executive level respondents from leading telecom service providers and telecom infrastructure firms in major metropolitan cities in India. The purposive sampling strategy utilized allowed us to collect data from respondents who had relevant knowledge and experience with their firm's agility, innovation strategies, and performance. The questionnaire was structured and included surveys that utilized measurement items that had been taken from established scales.

RESULTS, FINDINGS AND DATA INTERPRETATION

Table 1: Demographic Profile of Respondents (N = 430)

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	258	60.00
	Female	172	40.00
Age Group	26–35	139	32.30
	36–45	163	37.90
	46–55	84	19.50
	Above 55	44	10.20

Educational Qualification	Diploma	28	6.50
	Graduate	147	34.20
	Postgraduate	198	46.00
	Professional Degree	57	13.30
Designation	Junior-level Management	101	23.50
	Mid-level Management	159	37.00
	Senior-level Management	119	27.70
	Executive/ non-managerial	51	11.90
Experience in Telecom Sector	Less than 5 years	87	20.20
	6–10 years	142	33.00
	11–15 years	118	27.40
	More than 15 years	83	19.30
Type of Organization	Public	121	28.10
	Private	248	57.70
	Joint Venture	61	14.20
Region of Operation	North India	91	21.20
	South India	109	25.30
	East India	58	13.50
	West India	79	18.40
	Pan India	93	21.60

Source: Primary Data

The demographic analysis of the participants supplies an essential overview of the sample for the study, adding perspectives from various categories within the Indian telecom sector. Gender-wise, there is a reasonable balance in the sample with 60% male respondents and 40% female respondents presenting a moderately inclusive profile of the managerial and professional workforce. Age-wise, most respondents are sophisticated mid-sized career professionals with 37.9% in the 36–45 year age group, and 32.3% in the 26–35 year age group indicating that most of the responses are expected to be coming from mid-sized career professionals with appropriate experience and decision-making responsibilities. The demographic section indicates that the largest proportion of respondents (46%) have a

postgraduate degree, followed by 34.2% of respondents being graduates, indicating that the sample is educated. Having an educated demographic, adds to the reliability of the responses because the respondents can be relied upon to have the knowledge and experience to assess the process of organizational agility and the organization's capacity for innovation. For designation, most of the respondents are in the middle (37%) levels of management or senior management levels (27.7%) indicating that most of the demographic is largely represented by individuals that have strategic rankings title and more understanding of firm level performance as a dynamic.

The data is further substantiated by professional experience in the telecom environment. About 33% of respondents had 6–10 years of experience, and 27.4% had 11–15 years, thus assuring responses were obtained from skilled professionals with operational and strategic knowledge. The distribution in types of organizations reveals that most respondents, 57.7%, were employed by private organizations, with 28.1% public sector and 14.2% with joint ventures; this provides an organizational context as a variable in the study. Finally, the regional distribution is notably even, with respondents from all regions in India—North (21.2%), South (25.3%), East (13.5%), and West (18.4%)—with 21.6% respondents working at a pan-India level. The choice of respondents from these regions enhances the applicability of the findings across the entire Indian telecom ecosystem.

Structural Measurement Model and Testing of Hypotheses

Table no 2. Loading of the Item Measurement Model, Cronbach's Alpha, CR, AVE & R ²						
Factor Markers	Measurement Items	Loading	Cronbach's Alpha	Composite Reliability (CR)	Average Variance Extracted (AVE)	R ²
Organizational Agility (OA)	OA1	0.742	0.918	0.921	0.631	
	OA2	0.799				
	OA3	0.808				
	OA4	0.812				
	OA5	0.802				
	OA6	0.746				
	OA7	0.819				
	OA8	0.785				
Innovation Capability (IC)	IC1	0.818	0.902	0.907	0.632	0.719
	IC2	0.762				
	IC3	0.753				
	IC4	0.837				
	IC5	0.779				
	IC6	0.797				
	IC7	0.792				
Firm Performance (FP)	FP1	0.778	0.869	0.904	0.664	0.612
	FP2	0.836				
	FP3	0.808				
	FP4	0.829				
	FP5	0.786				
	FP6	0.819				

Source: Primary Data

The measurement model results provided in Table 2 show that all observed items associated with the three latent constructs—Organizational Agility (OA), Innovation Capability (IC), and Firm Performance (FP)—exhibit acceptable standardized loadings. All item loadings exceed the 0.70 limit suggested by Hair et al. (2019), with all loadings in the range of 0.742 to 0.837, indicating that the indicators represent their respective constructs effectively. This degree of indicator reliability may provide a preliminary degree of evidence for construct validity of the measurement model. For internal consistency, the Cronbach's Alpha for OA (0.918), IC (0.902), and FP (0.869) all exceed the generally acceptable level of 0.70, indicating a high degree of reliability (Nunnally & Bernstein, 1994). In addition, the composite reliability (CR) for OA (0.921), IC (0.907), and FP (0.904) all had scores significantly above the 0.70 threshold, indicating that the items together demonstrate a high degree of accuracy in capturing their latent variables. Convergent

validity was also established via the average variance extracted (AVE), with OA (0.631), IC (0.632), and FP (0.664) values all above the minimum standard of 0.50 established by Fornell and Larcker (1981), suggesting that each construct demonstrates that it accounts for the variance of its indicators.

Finally, the R^2 values indicate the explanatory power of the structural model. Innovation Capability has an R^2 of 0.719 suggesting approximately 71.9% of its variance can be accounted for by Organizational Agility, thereby evidencing a strong predictive relationship. Firm Performance has an R^2 value of 0.612, indicating that 61.2% of its variance could be accounted for by both Organizational Agility and Innovation Capability, representing a moderate to strong effect size, according to Chin (1998). Hence, the results collectively confirm the validity of the measurement model and the appropriateness of advancing to structural model analysis for testing the proposed relationships.

Table 3: Path Coefficients and Hypotheses Testing Results

Research Hypotheses	Direct Path	Original sample (O)	T statistics (O/STDEV)	P values	Status of Hypotheses
H1	Organizational Agility -> Innovation Capability	0.847	23.520	0.000	Accepted
H2	Innovation Capability -> Firm Performance	0.623	9.402	0.000	Accepted
H3	Organizational Agility -> Firm Performance	0.319	5.012	0.000	Accepted
H4	Organizational Agility -> Innovation Capability -> Firm Performance	0.272	4.987	0.000	Accepted

The findings from hypothesis testing are provided in Table 3 using Partial Least Squares structural equation modeling (PLS-SEM). The relationship from Organizational Agility to Innovation Capability (H1) has a path coefficient of 0.847 with a t-value of 23.520 and as p-value of 0.000, confirming a strong positive and significant relationship. This indicates that, as agility increases, organizations will have a

greater capacity for stimulating innovation, consistent with results from Doz and Kosonen (2010), where the authors stated an organization's agility allows the firm to adapt more rapidly and foster the innovative process. The acceptance of H1 confirms that businesses that demonstrate agility within their operations, leader style, and decision-making have a higher rate of innovation capacity. The same pattern occurs for the significant

relationship between Innovation Capability and Firm Performance (H2), where there is a path coefficient of 0.623, a t-value of 9.402, and a p-value of 0.00; signifying organizations with greater innovation capacity are in a better position to enhance performance outcomes. The direct relationship from Organizational Agility to Firm Performance (H3) was also statistically significant ($\beta = 0.319$, $t = 5.012$, $p = 0.00$); meaning that agility provides an independent relationship, and on its own increases performance measures, such as efficiency, responsiveness to the markets, and customer satisfaction (Tallon & Pinsonneault, 2011).

In conclusion, the mediation hypothesis (H4) is supported by a significant indirect effect of Organizational Agility on Firm Performance, via Innovation Capability ($\beta = 0.272$, $t = 4.987$, $p = 0.000$). This suggests a partial mediation because Organizational Agility directly and indirectly impacts Firm Performance through Innovation Capability. The results confirm the theorization that, by exercising agility, companies are better positioned to innovate and, therefore, improve firm performance outcomes. Overall, the findings reaffirm that enhancing agility develops innovation capacity, which yields meaningful performance improvements (Wang et al., 2020).

DISCUSSION

This study demonstrates important relationships among organizational agility, innovation capability, and firm performance in the dynamic and regulated environment of telecommunications. The evidence supports organizational agility as an important facilitator of innovation capability. This is in line with previous research indicating that agility-or the organization's ability to react quickly to changes in the environment and reorganize internal processes, and rapidly make decisions- directly enhances an organization's innovation (Tallon & Pinsonneault, 2011). These agile organizations are better able to engage in exploratory innovation by developing new ideas, providing creative solutions, and reacting to market shift, which, as planned, is crucial for a firm's continued innovation.

In addition, findings showed that innovation capability is a significant predictor of firm performance, and thus reinforces the strategic importance of innovation to

achieve a competitive advantage. Firms with higher levels of capacity for innovation are also more likely to experience improvements across several dimensions of performance, and specifically profitability, customer satisfaction, and operational efficiency. This finding echoes the work of Hurley and Hult (1998), who argued that an organization's innovation orientation is potentially an almost singularly-focused predictor of performance in changing markets. The research also affirms the resource-based view (RBV), which asserts that intangible assets, such as innovation capability, are primary drivers of superior performance (Barney, 1991).

Interestingly, organizational agility has a direct and positive impact on firm performance, beyond its effect through innovation. Hence agile organizations not only are more efficient toward innovation, they are also inherently more efficient in recognizing opportunities, managing risk, reacting to customer needs, and ultimately performing well in terms of that innovation. The analysis further offers evidence that innovation capability mediates the relationship between agility and performance. The mediating role in this relationship reinforces that agility is a facilitator of innovation that then leads to enhanced performance- a finding that is consistent with the theoretical logic of dynamic capabilities theory (Teece et al., 1997). Our findings uphold the important strategic implication for firms to advance their respective agility capacities, not simply as a passive response mechanism, but rather established as a proactive capacity to promote innovation and as a basis for sustainable performance.

CONCLUSION

The current research offers a thorough assessment of the ways that organizational agility (OA) and innovation capability (IC) serve to improve firm performance (FP) in particular relevant to the Indian telecom industry. Utilizing data collected from 430 respondents and analyzed using the Partial Least Squares structural Equation Modeling (PLS-SEM) method, the research was able to confirm all proposed hypotheses, demonstrating both direct and indirect relationships across all constructs. Findings indicated organizational agility had a significant and positive influence on innovation capability, which in turn had a positive

influence on firm performance. Moreover, innovation capability positively influenced the relationship between organizational agility and firm performance and was an important factor to convert agile organizational processes into performance results.

Findings of the study are consistent with previous research that suggested agile organizations are more equipped to respond to market changes, test ideas, and leverage innovative solutions that enhance business performance (Ahmed et al., 2022; Alkandi & Helmi, 2024). The study also adds to the theoretical foundations of the dynamic capabilities view (DCV), reinforcing the notion that agility and innovation are not exclusive resources, but competencies that are interrelated, and that these competencies must align to create a competitive advantage (Felipe et al., 2020; Atobishi et al., 2024). Moreover, the findings indicate the increasing significance of agility as a strategic enabler in uncertain and technology-based environments, consistent with the research of Kale et al. (2019) and Rafi et al. (2022).

From a practical aspect, managers and other decision-makers should encourage an organizational culture that embraces flexibility, learning, and experimentation. In sectors with rapid technological disruption and evolving customer expectations, such as the telecommunications sector, organizational agility is pivotal in allowing firms to react to the emergence of trends, while innovation capability allows firms to generate new deliverables to address shifting demands. By committing and investing in structures, processes, and people which support their organization's agility and innovation capabilities, organizations can improve their adaptability and performance long-term. Overall, this study contributes to strategic management and organizational behavior scholarship by providing an empirical validation of a model which includes organizational agility, innovation capability, and firm performance. We hope we provided value to scholarly research and to practitioners hoping to maintain agility and innovative organizational strategies in increasingly uncertain environments.

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Impact of Non-Performing Assets on the Financial Performance of Banks in India

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ABSTRACT

Non-Performing Assets (NPAs) represent one of the most critical challenges confronting the Indian banking sector, as they directly influence banks' profitability, operational efficiency, and financial sustainability. Persistent growth in NPAs restricts interest income, increases provisioning requirements, and weakens the overall financial performance of banks. In this context, the present study examines the impact of both Gross Non-Performing Assets (GNPA) and Net Non-Performing Assets (NNPA) on key profitability indicators of banks in India, namely Return on Assets (ROA) and Return on Equity (ROE).

The study is guided by three core hypotheses that investigate whether GNPA significantly affects ROA and ROE, and whether NNPA has a significant influence on ROA. These hypotheses are formulated to assess the extent to which deterioration in asset quality—both before and after provisioning—impairs banks' ability to generate profits from their assets and equity. By distinguishing between gross and net NPAs, the study provides a comprehensive understanding of the role of credit risk and provisioning practices in shaping bank performance.

Using secondary data collected from the published annual reports of selected banks, the study adopts a descriptive and analytical research design. Statistical tools such as correlation and regression analysis are employed to examine the nature, strength, and direction of the relationship between NPAs and profitability measures. The empirical analysis focuses on identifying whether increases in GNPA and NNPA lead to a decline in ROA and ROE.

The findings of the study reveal a statistically significant negative relationship between NPAs and profitability indicators. Higher levels of GNPA are found to adversely affect both ROA and ROE, while increased NNPA significantly reduces ROA. These results confirm that deterioration in asset quality, even after provisioning, exerts a substantial burden on banks' financial performance. The study highlights the importance of effective credit appraisal, timely recovery mechanisms, and prudent provisioning policies to contain NPAs and enhance profitability. The findings offer valuable insights for bank management, regulators, and policymakers in formulating strategies aimed at strengthening asset quality and improving the long-term financial health of the Indian banking sector.

KEYWORDS : *Non-performing assets, Gross NPA, Net NPA, Financial performance, Return on assets, Return on equity, Net interest margin, Indian banking sector.*

INTRODUCTION

The banking sector plays a pivotal role in the economic development of any country by acting as a financial intermediary between savers and borrowers. In India, banks are instrumental in mobilizing savings, facilitating investments, supporting industrial growth,

promoting financial inclusion, and sustaining overall economic stability [1]. The performance and soundness of the banking system therefore have a direct bearing on economic growth and financial resilience. Among the various challenges faced by banks, Non-Performing Assets (NPAs) have emerged as one of the most critical

issues affecting their financial health and operational efficiency [2].

Non-Performing Assets arise when borrowers fail to repay interest or principal amounts on loans within the stipulated time period, resulting in income loss for banks. As per regulatory norms, an asset is classified as non-performing when it remains overdue for a specified period, leading to suspension of interest income recognition [3]. The increasing incidence of NPAs weakens banks' balance sheets, erodes profitability, constrains credit growth, and undermines investor and depositor confidence. In the Indian context, the NPA problem has gained prominence particularly in the aftermath of economic slowdowns, industrial stress, governance issues, and inefficiencies in credit appraisal and recovery mechanisms [4].

Understanding the relationship between NPAs and financial performance is vital not only for bank management but also for policymakers, regulators, investors, and other stakeholders [8]. Effective management of NPAs contributes to improved profitability, enhanced capital adequacy, and sustainable credit growth. Moreover, empirical evidence on how gross and net NPAs influence profitability measures helps in evaluating the effectiveness of provisioning policies and risk management strategies adopted by banks [9].

Against this backdrop, the present study focuses on analyzing the impact of Gross Non-Performing Assets (GNPA) and Net Non-Performing Assets (NNPA) on key profitability indicators—ROA, ROE, and NIM—of public and private sector banks in India [10]. By examining these relationships, the study seeks to provide a comprehensive understanding of how asset quality influences financial performance and to highlight the importance of prudent credit risk management in strengthening the Indian banking sector. The findings of the study are expected to offer valuable insights for improving banking performance and ensuring long-term financial stability.

RESEARCH METHODOLOGY

The research methodology outlines the systematic framework adopted to examine the impact of Non-Performing Assets (NPAs) on the financial performance of public and private sector banks in India. It describes the research design, data sources, sample selection,

variables, tools of analysis, and statistical techniques employed to test the formulated hypotheses in a scientific and objective manner.

Research Design

The study adopts a descriptive and analytical research design.

- The descriptive approach is used to understand the trends and patterns of Gross Non-Performing Assets (GNPA), Net Non-Performing Assets (NNPA), and profitability indicators over the study period.
- The analytical approach is employed to examine the cause-and-effect relationship between NPAs and financial performance indicators such as Return on Assets (ROA), Return on Equity (ROE), and Net Interest Margin (NIM).

This design is appropriate as the study relies on historical financial data and seeks to establish statistical relationships between asset quality and bank performance.

Sample Selection

The study adopts a purposive sampling technique, selecting banks based on asset size, market presence, and data availability.

Public Sector Banks (5):

- State Bank of India
- Bank of Baroda
- Punjab National Bank
- Canara Bank
- Union Bank of India

Private Sector Banks (5):

- HDFC Bank
- ICICI Bank
- Axis Bank
- Kotak Mahindra Bank
- IndusInd Bank

These banks represent a significant share of the Indian banking system and provide a balanced comparison between public and private sector banks.

RESEARCH OBJECTIVES

- To examine the impact of Gross Non-Performing Assets (GNPA) on Return on Assets (ROA) of banks in India.

- b) To analyze the effect of Gross Non-Performing Assets (GNPA) on Return on Equity (ROE) of banks in India.
- c) To assess the influence of Net Non-Performing Assets (NNPA) on Return on Assets (ROA) of banks in India.

RESEARCH HYPOTHESIS

- a) H_{01} : Gross Non-Performing Assets (GNPA) have no significant impact on Return on Assets (ROA) of banks.
- H_{11} : Gross Non-Performing Assets (GNPA) have a significant negative impact on Return on Assets (ROA) of banks.
- b) H_{02} : Gross Non-Performing Assets (GNPA) have no significant impact on Return on Equity (ROE) of banks.

H_{12} : Gross Non-Performing Assets (GNPA) have a significant negative impact on Return on Equity (ROE) of banks.

DATA ANALYSIS AND INTERPRETATION

Impact of Gross Non-Performing Assets (GNPA) on Return on Assets (ROA) of Banks

- ❶ H_{01} : GNPA has no significant impact on ROA
- ❷ H_{11} : GNPA has a significant negative impact on ROA

Table 1a presents the descriptive statistics of Gross Non-Performing Assets (GNPA) and Return on Assets (ROA) of the selected banks. The table includes the number of observations, minimum and maximum values, mean, and standard deviation for both variables, providing an overview of their distribution and variability during the study period.

Table 1a: Descriptive Statistics of Gross Non-Performing Assets and Return on Assets

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Gross NPA (%)	100	1.25	12.8	5.64	2.91
Return on Assets (%)	100	-1.2	2.05	0.78	0.62

The results indicate that the mean GNPA ratio of the selected banks is 5.64%, with values ranging from 1.25% to 12.80%, reflecting considerable variation in

asset quality across banks and over time. The mean ROA is 0.78%, with a minimum of -1.20% and a maximum of 2.05%, suggesting fluctuations in profitability levels. The relatively higher standard deviation of GNPA compared to ROA indicates greater volatility in asset quality than in profitability. These statistics justify further analysis to examine the impact of GNPA on ROA.

Table 1b shows the Pearson correlation matrix between Gross Non-Performing Assets (GNPA) and Return on Assets (ROA). The table reports the correlation coefficient, significance value, and number of observations, indicating the strength and direction of the relationship between the two variables.

Table 1b: Correlation between Gross Non-Performing Assets and Return on Assets

Variables	GNPA	ROA
GNPA	1	-0.684
ROA	-0.684	1
Sig. (2-tailed)	—	0
N	100	100

The correlation coefficient between GNPA and ROA is -0.684, which indicates a strong negative relationship between the two variables. The relationship is statistically significant at the 1% level ($p < 0.01$). This result implies that as GNPA increases, ROA tends to decrease, providing preliminary evidence that higher levels of non-performing assets adversely affect banks' profitability.

Table 1c presents the model summary of the regression analysis conducted to examine the impact of Gross Non-Performing Assets (GNPA) on Return on Assets (ROA). The table reports the correlation coefficient (R), coefficient of determination (R^2), adjusted R^2 , and the standard error of the estimate.

Table 1c: Model Summary of Regression Analysis between GNPA and ROA

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.684	0.468	0.462	0.455

The model shows an R value of 0.684, indicating a strong relationship between GNPA and ROA. The R^2 value of 0.468 reveals that approximately 46.8% of the

variation in ROA is explained by changes in GNPA. The adjusted R^2 value of 0.462 confirms the robustness of the model. This suggests that GNPA is a significant explanatory variable influencing ROA.

Table 1d presents the Analysis of Variance (ANOVA) results for the regression model assessing the impact of Gross Non-Performing Assets (GNPA) on Return on Assets (ROA). The table displays the sum of squares, degrees of freedom, mean squares, F-statistic, and significance value to test the overall model fit.

Table 1d: ANOVA Results for the Impact of GNPA on ROA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	18.624	1	18.624	89.91	0
Residual	21.156	98	0.216		
Total	39.78	99			

The ANOVA results show an F-value of 89.91, which is statistically significant at the 1% level ($p < 0.01$). This indicates that the regression model is a good fit and that GNPA significantly explains variations in ROA. Hence, the model is statistically valid for predicting the impact of GNPA on ROA.

Table 1e presents the regression coefficients obtained from the regression analysis examining the effect of Gross Non-Performing Assets (GNPA) on Return on Assets (ROA). The table includes unstandardized coefficients, standard errors, standardized beta values, t-statistics, and significance levels.

Table 1e: Regression Coefficients for the Impact of GNPA on ROA

Model	Unstand-ardized B	Std. Error	Standar-dized Beta	t	Sig.
(Constant)	2.135	0.184	—	11.6	0
GNPA	-0.241	0.025	-0.684	-9.48	0

The regression coefficient for GNPA is -0.241 , which is negative and statistically significant at the 1% level ($p < 0.01$). This indicates that an increase of one unit in GNPA leads to a 0.241 unit decrease in ROA. The standardized beta value of -0.684 confirms the strong negative influence of GNPA on ROA. Therefore, the null hypothesis is rejected, and it is concluded that Gross Non-Performing Assets have a significant negative impact on Return on Assets of banks.

Impact of Gross Non-Performing Assets (GNPA) on Return on Equity (ROE) of Banks

- ❖ H_{02} : Gross Non-Performing Assets (GNPA) have no significant impact on Return on Equity (ROE).
- ❖ H_{12} : Gross Non-Performing Assets (GNPA) have a significant negative impact on Return on Equity (ROE).

Table 2a presents the descriptive statistics of Gross Non-Performing Assets (GNPA) and Return on Equity (ROE) of the selected banks. The table summarizes the number of observations, minimum and maximum values, mean, and standard deviation, offering an overview of the variability and distribution of asset quality and shareholder returns during the study period.

Table 2a: Descriptive Statistics of Gross Non-Performing Assets and Return on Equity

Variable	N	Mini-mum	Maxi-mum	Mean	Std. Deviation
Gross NPA (%)	100	1.25	12.8	5.64	2.91
Return on Equity (%)	100	-12.5	18.2	9.46	6.32

The table shows that the mean GNPA of the selected banks is 5.64%, with values ranging from 1.25% to 12.80%, indicating significant variation in asset quality. The mean ROE is 9.46%, with a wide range from -12.50% to 18.20% , reflecting considerable fluctuations in returns to shareholders. The relatively high standard deviation of ROE suggests greater volatility in equity returns, highlighting the need to examine the influence of GNPA on ROE.

Table 2b presents the Pearson correlation coefficients between Gross Non-Performing Assets (GNPA) and Return on Equity (ROE). The table reports the correlation values, significance levels, and the number of observations to indicate the strength and direction of the relationship between the variables.

Table 2b: Correlation between Gross Non-Performing Assets and Return on Equity

Variables	GNPA	ROE
GNPA	1	-0.721
ROE	-0.721	1
Sig. (2-tailed)	—	0
N	100	100

The correlation coefficient between GNPA and ROE is -0.721 , indicating a strong negative relationship between asset quality and shareholder returns. The relationship is statistically significant at the 1% level ($p < 0.01$). This result suggests that higher levels of GNPA are associated with lower ROE, providing preliminary evidence that deterioration in asset quality adversely affects banks' equity profitability.

Table 2c presents the model summary of the regression analysis conducted to assess the impact of Gross Non-Performing Assets (GNPA) on Return on Equity (ROE). The table reports the correlation coefficient (R), coefficient of determination (R^2), adjusted R^2 , and the standard error of the estimate.

Table 2c: Model Summary of Regression Analysis between GNPA and ROE

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.721	0.52	0.515	4.41

The model exhibits an R value of 0.721, indicating a strong relationship between GNPA and ROE. The R^2 value of 0.520 reveals that 52.0% of the variation in ROE is explained by changes in GNPA. The adjusted R^2 value of 0.515 confirms the explanatory power and reliability of the model. This demonstrates that GNPA is a significant determinant of ROE.

Table 2d presents the Analysis of Variance (ANOVA) results for the regression model evaluating the impact of Gross Non-Performing Assets (GNPA) on Return on Equity (ROE). The table includes the sum of squares, degrees of freedom, mean squares, F-statistic, and significance value to assess the overall model fit.

Table 2d: ANOVA Results for the Impact of GNPA on ROE

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	2,215.64	1	2,215.64	117.82	0
Residual	2,041.36	98	20.83		
Total	4,257.00	99			

The ANOVA results show an F-statistic of 117.82, which is statistically significant at the 1% level ($p < 0.01$). This indicates that the regression model is highly significant and that GNPA has a meaningful explanatory effect on ROE. Hence, the model is statistically valid for analyzing the impact of GNPA on Return on Equity.

Table 2e presents the regression coefficients obtained from the regression analysis examining the influence of Gross Non-Performing Assets (GNPA) on Return on Equity (ROE). The table reports unstandardized coefficients, standard errors, standardized beta values, t-statistics, and significance levels.

Table 2e: Regression Coefficients for the Impact of GNPA on ROE

Model	Unstandardized B	Std. Error	Standardized Beta	t	Sig.
(Constant)	18.245	1.216	—	15.01	0
GNPA	-1.558	0.144	-0.721	-10.85	0

The regression coefficient for GNPA is -1.558 , which is negative and statistically significant at the 1% level ($p < 0.01$). This indicates that a one-unit increase in GNPA leads to a 1.558 unit decline in ROE. The standardized beta value of -0.721 confirms the strong negative effect of GNPA on ROE. Therefore, the null hypothesis is rejected, and it is concluded that Gross Non-Performing Assets have a significant negative impact on Return on Equity of banks.

FINDINGS OF THE STUDY

Based on the statistical analysis and interpretation of data relating to the impact of Non-Performing Assets on financial performance of banks, the following key findings are derived:

1. The descriptive analysis reveals that Gross Non-Performing Assets (GNPA) of the selected banks show considerable variation during the study period, with a mean value of 5.64%, indicating persistent asset quality concerns across banks.
2. The Return on Assets (ROA) exhibits noticeable fluctuations, with some banks reporting negative returns, highlighting the vulnerability of profitability to asset quality deterioration.
3. Correlation analysis establishes a strong and statistically significant negative relationship between GNPA and ROA ($r = -0.684$), confirming that higher gross NPAs adversely affect banks' ability to generate profits from their assets.
4. Regression results further confirm that GNPA has a significant negative impact on ROA, explaining 46.8% of the variation in ROA. An increase in GNPA leads to a measurable decline in ROA, resulting in the rejection of the null hypothesis (H_{01}).

5. The analysis of GNPA and Return on Equity (ROE) shows a strong negative correlation ($r = -0.721$), indicating that rising NPAs substantially reduce shareholders' returns.
6. Regression analysis reveals that GNPA explains 52.0% of the variation in ROE, and a one-unit increase in GNPA results in a significant decline in ROE. Hence, the null hypothesis (H_{02}) is rejected, confirming the adverse impact of GNPA on equity profitability.

Suggestions

In light of the above findings, the following suggestions are offered to improve asset quality and financial performance of banks:

1. Banks should strengthen credit appraisal and risk assessment mechanisms to minimize the incidence of fresh NPAs, particularly in high-risk lending segments.
2. Early warning systems (EWS) and continuous monitoring of loan accounts should be enhanced to identify potential stress at an early stage and prevent slippages into NPAs.
3. Banks must focus on speedy recovery and resolution mechanisms, including timely use of legal frameworks, settlement schemes, and restructuring tools.
4. Provisioning policies should be made more robust to ensure that net NPAs are effectively contained, thereby limiting their adverse impact on profitability.

CONCLUSION

The present study concludes that Non-Performing Assets pose a serious threat to the financial performance and sustainability of banks in India. The empirical analysis clearly establishes that Gross Non-Performing Assets (GNPA) have a significant negative impact on both Return on Assets (ROA) and Return on Equity (ROE), while Net Non-Performing Assets (NNPA) continue to adversely affect ROA even after provisioning.

The strong negative relationships observed between NPAs and profitability indicators highlight the extent to which poor asset quality undermines banks' operational efficiency and shareholder value. The rejection of all null hypotheses confirms that NPAs are a critical determinant of bank performance.

The study underscores the necessity for effective credit risk management, prudent provisioning, and efficient

recovery mechanisms to control NPAs and enhance profitability. Addressing the NPA problem is essential not only for improving individual bank performance but also for ensuring the stability and resilience of the Indian banking system as a whole. The findings of this study provide valuable insights for bank management, policymakers, and regulators in formulating strategies aimed at strengthening asset quality and achieving sustainable financial performance.

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The Effect of using Skin Care Cosmetics on Women's Confidence in Tiruchirapalli – A Study

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ABSTRACT

This research examines the effect of skincare cosmetics on the confidence of women in Tiruchirapalli which is culturally diverse and vibrant city located in Tamil Nadu, India. The study seeks to find out how the application of skincare products affects self-esteem, body image, and social interaction among women. A mixed-methods design was employed that integrated surveys and qualitative interviews with women across different socioeconomic strata. The study portrays the psychological and cultural. The research emphasizes that a proper balance between skincare cosmetic usage must be pursued by placing natural beauty, self-acceptance, and rational advertising by cosmetic companies above other factors. The study yields interesting conclusions about the psychosocial aspect of using skincare cosmetics in Tiruchirapalli. The results have implications for cosmetic firms, policymakers, and mental health practitioners looking to promote overall well-being.

KEYWORDS : *Confidence enhancement, Self esteem, Skin care Cosmetic, Skin care routine.*

INTRODUCTION

Confidence has a great impact on the personal, social, and professional life of an individual. For women, self-confidence and self-esteem are usually shaped by several factors, such as physical looks and societal views on beauty. Skin care cosmetics, in this case, have become vital tools not just for beautifying the body but also for enhancing emotional well-being and confidence. The cosmetics and skin care market has seen enormous development over recent decades, stimulated by growing awareness of personal hygiene, mass media effect, and social pressure to conform to changing beauty ideals. Women are especially attracted to skin care products because they promise healthier, more youthful skin, resolving issues such as acne, pigmentation, and aging. This quest for perfect skin usually goes beyond mere vanity, closely relating to confidence and empowerment.

Use of skin care cosmetics has progressed from simple physical alteration to a major driver of psychological

and emotional well-being. Modern society has witnessed products like moisturizers, serums, anti-aging creams, and cleansers become essential components of most women's daily self-care routine. These products are often marketed not just as a way of improving physical looks but also as a way of making one feel more confident and self-assured. This double appeal has fueled a global surge in cosmetic demand, so deeply ingrained in modern living. Self-assurance, that key component of both personal and professional success, is directly correlated with the degree to which a person feels pleased with their looks. Cultural expectations of beauty, frequently promoted through media and folklore, place very strong pressure upon women to accept certain beauty norms. A numerous individuals, skincare routines serve as a proactive approach to align their appearance with these societal expectations, thereby improving their self-image and self-confidence. Nevertheless, this dependence on external products for confidence raises important questions regarding the motivations behind such practices and their long-

term psychological effects. Tiruchirappalli, a lively city in Tamil Nadu that reflects a distinctive blend of ancient and contemporary influences, provides an interesting setting for the study of this problem. Women in this region experience a rich interaction of cultural values and modern beauty trends, leading to varied experiences with skincare cosmetics. It might perceive these products as empowering self-expression tools, other people might find them as a response to external pressures to fit into ideal beauty standards. The present study attempts to examine the relationship between use of skincare cosmetics and women's self-confidence in Tiruchirappalli in terms of their impact on self-perception and psychological well-being.

OBJECTIVES OF THE STUDY

- To analyze the impact of different types of skincare products on women's psychological well-being.
- To examine the relationship between the use of skincare cosmetics and women's self-esteem.
- To explore the factors that influence women's choice of skincare cosmetics.
- To evaluate the perception of skincare cosmetics as a tool for empowerment or as a response to external pressures.
- To provide recommendations for promoting positive body image and ethical cosmetic usage.

RESEARCH METHODOLOGY

A questionnaire is utilized as the primary tool for collecting data. The questionnaire is a systematic and structured instrument designed to gather specific and relevant information from respondents with a high degree of precision and comprehensiveness. It plays a critical role in facilitating the inquiry process and ensuring the accurate documentation of responses.

Research Design

The study is conducted with a total sample size of 50 participants provide valuable insights into the relationship between skincare cosmetics and women's confidence in Tiruchirappalli.

Sources of data

The research utilizes both primary and secondary

data to achieve its objectives of analyzing the effect of using skincare cosmetics on women's confidence in Tiruchirappalli. Combining these two types of data ensures a more comprehensive and well-rounded approach to understanding the subject matter.

ANALYSIS AND DISCUSSION

Table 1. Age

Particulars	No of Respondents	Percentage (%)
18-30	22	44
31-40	12	24
41-50	10	20
Above 50	06	12
Total	50	100

Source: Primary Data

Inference

The table above provides insights into the age distribution of the respondents, revealing diverse age groups with varying levels of representation. A significant portion, 44%, of the respondents fall within the age range of 18 to 30 years. This group represents young adults, a demographic that is often highly engaged with skincare and beauty trends. Following this, 24% of the participants are aged between 31 and 40 years. This segment typically represents individuals in their middle adult years who may prioritize skincare for both maintenance and addressing emerging concerns. The 41 to 50 age group comprises 20% of the respondents, indicating a significant focus on skincare during midlife. This group is likely to engage with products targeting age-related skin concerns. Finally, 12% of the respondents are aged over 50. Though this group represents the smallest proportion of participants, their involvement highlights an interest in skincare even in later stages of life.

Table 2. Marital Status

Particulars	No. of Respondents	Percentage (%)
Married	21	42
Unmarried	29	58
Total	50	100

Source: Primary Data

Inference

The information presented in the table reveals that a majority of the participants, constituting 58%, identify as unmarried. This indicates that over half of the surveyed population are single, which may include individuals who have never been married, those engaged, or widowed/divorced individuals who now identify as unmarried. On the other hand, 42% of the participants are classified as married, representing a significant proportion of the group that is either currently in a marital relationship or living in a committed partnership.

Table 3. Educational Qualification

Particulars	No. of Respondents	Percentage (%)
School	4	8
Undergraduate	19	38
Post graduate	20	40
Professional	7	14
Total	50	100

Source: Primary Data

Inference

The information presented in the table provides a detailed breakdown of the educational qualifications of the participants, shedding light on the educational background of the respondents. Notably, 40% of the participants hold Postgraduate degrees. In addition, 38% of the respondents possess Undergraduate qualifications. This group represents a substantial proportion of participants with a foundational education, potentially indicating a more practical or career-focused approach to skincare. A smaller segment, 14% of the participants, are identified as professionals. Finally, 8% of the respondents have completed their schooling but have not pursued higher education. While this group represents a smaller percentage, it still provides valuable insights into the diversity of education levels within the study.

Table 4. Occupation

Particulars	No. of Respondents	Percentage (%)
Student	8	16
Home maker	12	24

Business	13	26
Professional	17	34
Total	50	100

Source: Primary Data

Inference

A significant portion, 34% of the respondents, identify as Professionals. Next, 26% of the respondents are classified as Businessmen. This group likely includes women entrepreneurs and business owners, whose roles may demand self-assurance and outward confidence in both business and social settings. Homemakers make up 24% of the participants, indicating that a substantial portion of the survey's respondents are engaged in managing their households. Finally, 16% of the participants are Students. This group is typically younger and may be more influenced by trends in the beauty and skincare industry, particularly those driven by social media and peer influence.

Table 5. Frequency of using Skin Care Products

Particulars	No. of Respondents	Percentage (%)
Daily	12	24
Weekly	18	36
Monthly	11	22
Occasionally	09	18
Total	50	100

Source: Primary Data

Inference

The data presented reveals various patterns in the frequency of skincare product usage among the participants, highlighting the diverse skincare routines and preferences across the surveyed population. A significant portion of respondents, 36%, apply skincare products prior weekly. This group seems to maintain a routine that involves using skincare products once a week or at regular intervals. 24% of participants use skincare products daily, suggesting that for these individuals, skincare is an integral part of their daily routine. 22% of respondents report using skincare products monthly. This group's skincare routine seems less frequent compared to the daily or weekly users, suggesting that skincare might not be a high priority or

part of their regular habits. Finally, 18% of participants report using skincare products occasionally. This smaller group likely applies skincare products sporadically, possibly when they feel their skin needs attention, or when a special event prompts them to focus on their appearance.

Table 6. Types of using Skin Care Products

Particulars	No. of Respondents	Percentage (%)
Cleanser	10	20
Sunscreen	16	32
Moisturizer	22	44
All of the above	02	04
Total	50	100

Source: Primary Data

Inference

The data presented in the table highlights the skincare habits of the participants, specifically focusing on the regular use of three key products: moisturizer, sunscreen, and cleanser. These figures provide valuable insights into the skincare priorities of the respondents and the frequency with which they incorporate these products into their routines. A significant 44% of participants consistently utilize moisturizer, indicating that moisturizing is the most commonly followed skincare practice among the group. 32% of respondents reported regular use of sunscreen, reflecting an awareness of the importance of sun protection. Sunscreen helps prevent skin damage caused by harmful UV rays, which can lead to premature aging, pigmentation, and even skin cancer. 20% of the participants indicated that they frequently use a cleanser, which helps remove dirt, oil, and impurities from the skin. Interestingly, only 4% of respondents reported using all three products—moisturizer, sunscreen, and cleanser—on a regular basis.

Table. 7. Psychological Well-Being Scores by Skincare Product Type

Particulars	No. of Respondents	Percentage (%)
Moisturizers	15	30
Anti-aging creams	8	16

Acne treatments	10	20
Sunscreens	17	34
Total	50	100

Source: Primary Data

Inference

The Most Popular Skincare Product - Sunscreens rank as the most frequently utilized item, with 34% of women opting for them. This indicates an increasing awareness regarding the importance of skin protection against sun damage, likely influenced by health campaigns and concerns about the aesthetic effects of sun-induced aging. Following closely are moisturizers, which account for 30%, underscoring their vital role in fundamental skincare routines. This suggests that hydration and the maintenance of skin texture are significant priorities for numerous women. Acne treatments represent 20%, indicating that a considerable segment of the sample either experiences or is worried about acne-related skin issues. Anti-aging creams are utilized by 16% of respondents, which may suggest either a younger demographic or scepticism regarding the efficacy of such products. All categories of products demonstrate a commendable level of usage, emphasizing that skincare remains a pertinent concern for women. The differences in product usage may be associated with factors such as age, skin condition, lifestyle, and levels of awareness.

CONCLUSION

The Effect of Using Skincare Cosmetics on Women's Confidence in Tiruchirapalli provides significant insights into the relationship between cosmetic usage and women's self-esteem. The findings reveal that skincare cosmetics play a pivotal role in enhancing women's confidence, particularly by improving their appearance and aligning it with societal beauty norms. A majority of the respondents reported positive psychological effects, such as increased self-assurance in social and professional settings. Women in younger age groups and higher income brackets, in particular, exhibited a stronger correlation between cosmetic usage and confidence. The study highlights potential challenges, such as societal and media pressures, can create unrealistic beauty standards and negatively impact mental well-being for some women. The

study underscores the influence of external factors like advertising, peer influence and cultural norms in shaping women's perceptions of beauty and self-care.

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Gender-based Comparative Analysis of Plyometric Training Effects on Anxiety Among University Volleyball Players

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ABSTRACT

The result reveals that the female volleyball players showed better reduction on anxiety than the male volleyball players. The purpose of the study was to find out the comparative effect of plyometric training on anxiety among university level male and female volleyball players. To achieve the purpose of the present study, thirty volleyball players in that, fifteen male volleyball players and fifteen female volleyball players from Jamal Mohamed College, Tiruchirappalli, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The groups were divided as male volleyball players (MVBG) and female volleyball players (FVBG) in an equivalent manner. Anxiety was measured by Ducklows anxiety scale. The plyometric training given for both the groups for a period of six weeks for alternate three days in a week and the post-tests were taken. To find out the difference between the two groups independent 't' test was used.

KEYWORDS : *Plyometric, Anxiety, Volleyball.*

INTRODUCTION

Plyometric training is a form of training that is used to help develop and enhance explosive power, which is a vital component in a number of athletic performances. This training method is meant to be used with other power development methods in a complete training program to improve the relationship between maximum strength and explosive power. The modern history of Plyometrics is somewhat brief but not relatively new. This technique was originated in Russia and Eastern Europe in the middle of 1960. The Soviets were very successful in the use of Plyometrics in their training programmes, especially in track and field. This technique was originally known as the "Shock

Method of Training". Yuri Verhoshansky, a Russian coach whose success with jumpers is legendary, could very well be called the "Father of Plyometrics". He had tried and succeeded in increasing his athletes' reactive abilities by experimenting with exercises like the depth jump. He has been the leading researcher and coach most recognized with the spread of Plyometrics. He also has been credited with most of the forms of plyometric training that are still in use today (Farentinos & Radcliffe, 1985).

PURPOSE OF THE STUDY

The purpose of the study was to find out the comparative effect of plyometric training on anxiety among university level male and female volleyball players.

Hypothesis

It was hypothesized that the plyometric training group would show significant reduction on anxiety between male and female volleyball players.

Delimitation

1. The study was delimited to thirty volleyball players from Jamal Mohamed College, Tiruchirappalli, Tamilnadu.
2. The study was confined to fifteen male volleyball players and fifteen female volleyball players between the age group of 18 and 25 years.
3. This study was delimited to only yogic practices.

METHODOLOGY

To achieve the purpose of the present study, thirty volleyball players in that, fifteen male volleyball players and fifteen female volleyball players from Chennai, Tamilnadu, India were selected as subjects at random and their ages ranged from 18 to 25 years. The groups were divided as male volleyball players (MVBG) and female volleyball players (FVBG) in an equivalent manner. Anxiety was measured by Ducklows anxiety scale. The plyometric training given for both the groups for a period of six weeks for alternate three days in a week and the post-tests were taken. To find out the

Table I. Summary of 'T' Ratio on Anxiety

S. No	Variables	Pre-Test Mean	Post-Test Mean	Mean difference	Std. Dev ($\pm$)	σ DM	't' Ratio
1	Male Volleyball Players	28.67	20.18	8.49	1.76	1.16	13.04*
2	Female Volleyball Players	28.11	18.34	9.77	1.63	0.33	17.56*

DISCUSSIONS

In case of anxiety of volleyball players the results between pre and post (6 weeks) test has been found significantly higher in female volleyball players in comparison to male volleyball players. The findings of the present study have strongly indicates that six weeks of plyometric training group had significant effect on anxiety of volleyball players. Hence the

difference between the two groups independent 't' test was used.

RESULTS AND DISCUSSIONS

The primary objective of the independent 't' ratio was to describe the differences between the pre-test and post-test mean of novice volleyball players.

An examination of table - I indicates that the obtained 't' ratio for male volleyball players was 13.04. The obtained 't' ratio was found to be greater than the required table value of 2.14 at 0.05 level of significance for 1, 14 degrees of freedom. Hence it was found to be significant. The obtained 't' ratios for female volleyball players was 17.56. The obtained 't' ratio was found to be greater than the required table value of 2.14 at 0.05 level of significance for 1, 14 degrees of freedom. Hence it was found to be significant.

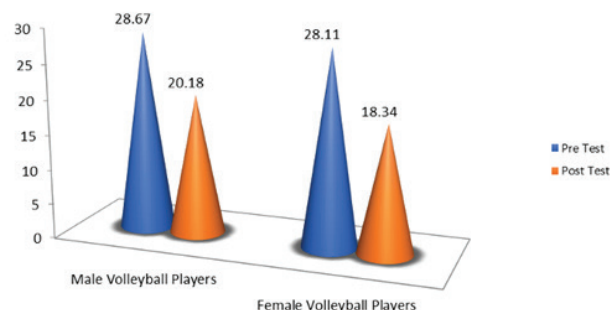


Fig. 1: Re and Post Test Differences on Anxiety

hypothesis earlier set that plyometric training would have been significant effect on anxiety in light of the same the hypothesis was accepted.

CONCLUSIONS

The result reveals that the female volleyball players showed better reduction on anxiety than the male volleyball players.

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A Study on the Impact of Leadership Styles and Organisational Learning on Organisational Innovation Performance with the Mediating Role of Knowledge Management

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ABSTRACT

The information technology companies are generally agreed upon to require improving organisational innovation performance in order to survive and develop over time. The purpose of this study was to investigate the relationship between organisational learning, knowledge management, organisational innovation performance, and leadership styles in order to offer practical advice and recommendations for managerial practices within the IT companies situated in SIPCOT IT Park, Chennai. The structural equation modelling method was used to analyse primary data that was obtained from 360 representatives of information technology companies. The findings demonstrated a high correlation between organisational innovative performance and knowledge management. It was also established that organisational learning and knowledge management have a positively significant association. The results indicate that an innovation culture within an organisation, where supportive and participative leaders foster mutual trust, collaboration, and learning, is likely to boost the effectiveness of knowledge management practices. This, in turn, may improve the companies' organisational innovation performance.

KEYWORDS : *Leadership styles, Organizational learning, Knowledge management, Organizational innovative performance, Information technology.*

INTRODUCTION

Chennai's IT companies have grown rapidly, capturing a large market share and boosting economic growth. Digital transformation boosted Chennai's IT sector quickly. High-tech attracts domestic and foreign investors. Rapid advances have increased industry competition, threatening IT companies' growth and survival but offering a chance to seize.

IT may need more technical innovation. Innovation helps companies stay competitive, so organizational theorists and managers have been interested in it for decades (Pralhad and Krishnan, 2008). Innovation is expensive, so industry tries to recover costs through pricing, cost cutting, consumer incentives, licensing

fees, and royalties. Direct or indirect competition from other developing industries makes innovation harder. Service innovation requires competency-based thinking (Ojasalo, 2009). Industrial skills enable innovation and competitive advantage in response to environmental changes.

Globalisation, rapid open innovation, and software and hardware advances are forcing high-tech companies to change their growth plans (Green, W. 2014). In addition to plants, machinery, and goods, managers today prioritize intellectual property, customer service, partnership, telecommunications, and staff creativity and skill. Companies now prioritize innovation and intellectual asset creation over competency and sustainable development when allocating scarce natural

resources. This is crucial because IT companies need better organizational innovation to survive and grow.

New research suggests that innovative industries can quickly seize market opportunities and adapt to external changes and consumer needs, according to Nijssen (2012). Innovation drivers must be identified by the manager. Organizational innovation requires knowledge management and a learning culture that values knowledge. Learning culture, knowledge processes, and organizational innovation performance provide operational growth insights and management implications, according to this study.

IT companies in Chennai's SIPCOT IT Park are examined for organizational learning, knowledge management, leadership styles, and innovation performance. Question addressed by study:

Do Chennai SIPCOT IT Park IT companies' leadership styles promote organizational learning?

2. How does organizational learning affect Chennai SIPCOT IT Park IT companies' knowledge management?

3. Is organizational innovation and knowledge management linked to SIPCOT IT Park IT company success in Chennai?

We can divide the study's three main objectives:

Define organizational learning development leadership styles.

2. Use empirical data to demonstrate organizational learning elements that support effective knowledge management.

3. Assess how knowledge management affects organizational innovation.

RESEARCH HYPOTHESES

Following the mentioned studies, the below hypothesis is proposed:

H1: Leadership styles have a positive significant impact on organizational learning.

H2: Organizational learning has a positive significant impact on knowledge management.

As stated in the section above, the conceptual model was constructed using theories derived from the body of

existing literature. The model is shown in the following Figure 1.

RESEARCH METHODOLOGY

In this study, researcher used a quantitative method to investigate the associations between workers' performance in organisational innovation performance, knowledge management, leadership styles, and organisational learning in Information Technology companies at located in SIPCOT IT Park, Chennai. The present study employed questionnaires to conduct the survey research because the data used in this study is primary data that was obtained with the intention of enhancing the literature in the business management sector. Confirmatory factor analysis and Structural Equation Model (SEM) analysis were performed using the SmartPLS4 software once the data collection was finished, and the findings were then presented. This investigation has 36 indicators, hence the appropriate sample size for this research is 360. However, the real number of answers we received was 360. Managers and team leaders from various levels of information technology companies were among the study's intended participants. A representative sample of managers from the aforementioned organisations formally granted the permission to collect data. The questionnaire included information on the respondents' demographics as well as four dimensions: leadership styles, organisational culture, knowledge management, and organisational innovation performance. To assess the latent variables provided in the literature reviews, proposed questions were adapted from prior studies' instruments, each item was measured using five-point Likert scales (1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree), and data were gathered.

RESULTS AND DISCUSSIONS

Table 1. Confirmatory Factor Analysis (CFA)

Constructs	Cronbach's Alpha	Rho A	Composite Reliability	AVE
Thresholds	0.6	0.7	0.7	0.5
Leadership Styles	0.816	0.837	0.866	0.588
Organizational Learning	0.853	0.856	0.888	0.593

Knowledge Management	0.839	0.843	0.887	0.691
Organizational Innovation Performance	0.844	0.853	0.901	0.695

Source: Primary Data

Researcher used Cronbach's alpha, Average Variance Extracted (AVE), and Composite Reliability (CR) to assess the construct's convergent validity. According to Hair, C.M. et al. (2011), prior research has indicated that the appropriate threshold values for Cronbach's alpha, AVE, and CR are 0.6, 0.5, and 0.7, respectively.

Table 3 shows that all Cronbach's alpha readings were more than 0.8, which is over the acceptable threshold. All of the Average Variance Extracted (AVE) values were more than 0.5, indicating that the examined constructs had convergent validity. Furthermore, there was strong internal consistency shown by the factors' composite reliability, which was likewise above 0.7. Additionally, the fact that every variable had outside loadings greater than 0.6 supports the convergent validity of the scales and meets the theoretical criteria of Heseler, J. et al., (2012).

Table 2. Fornell–Larcker criterion

Variables	Organizational Innovativ Performance	Knowledge Management	Leadership Styles	Organizational Learning
Organizational Innovative Performance	0.835			
Knowledge Management	0.693	0.832		
Leadership Styles	0.651	0.753	0.757	
Organizational Learning	0.644	0.657	0.669	0.768

Source: Primary Data

Using the parameter from the study of (Fornell, C. et al., 1981), the study discusses the issue of discriminant validity. A construct's AVE square root must be larger than the association of any other construct. Furthermore, the researcher examined each indicator's cross loadings to determine if any of them loaded heavily on other constructs. Table 2 shows that every indication satisfies the previously stated requirements.

Table 3. Heterotrait–Monotrait Ratio (HTMT)

Variables	Organizational Innovativ Performance	Knowledge Management	Leadership Styles	Organizational Learning
Organizational Innovation Performance				
Knowledge management	0.802			
Leadership styles	0.719	0.774		
Organizational Learning	0.776	0.642	0.787	

Source: Primary Data

Additionally, in order to assess discriminant validity, researchers computed the Heterotrait-Monotrait ratio (HTMT). In proportion to the mean of the average correlations for items measuring the same construct, this ratio shows the mean value of all item correlations across constructs. A threshold of 0.85 is used to compare HTMT readings (Kline, R.B. 1998). If the HTMT value exceeds this level, the model does not have discriminant validity. Because all of the indicators acquired from our research were less than 0.85, as shown in Table 3, therefore the researcher conclude that there is good discriminant validity between variables.

CONCLUSIONS

Leadership styles, knowledge management, organisational learning, and innovative performance in Chennai-based IT companies are examined using this theoretical framework. Strong organizational culture supports knowledge management, which drives innovation. The study's three main goals are to examine leadership styles' role in fostering organizational learning, to provide empirical evidence on how organizational learning elements support knowledge management practices, and to analyze the relationship between knowledge management and organizational innovation performance and assess whether IT firms in Chennai's high-tech parks can gain competitive advantage through effective knowledge management.

The findings show that leadership styles strongly influence organizational learning and knowledge management activities like creation, storage, and transfer. Trust, cooperation, openness, and low functional

barriers promote rapid and effective knowledge sharing. Knowledge management and organizational innovation performance are closely linked to a well-established organizational culture and supportive and participatory leadership behaviors.

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The Role of Employee Attitudes in Shaping Organisational Commitment in SMES: A Structural Equation Modelling Approach

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ABSTRACT

The current study evaluates the interaction between organizational commitment and employee attitude in Small and Medium-sized Manufacturing Enterprises (SMEs), focusing on the mediating role of job satisfaction. The attitude portrayed by employees, reflecting the combination of the affective, behavioural, and cognitive elements, plays a central role in regulating workplace behaviour, involvement, and organizational commitment. Based on Social Exchange Theory and Affective Events Theory, the work shows that positive attitudinal orientations create a strong employee-to-employer relationship and maintain organizational commitment. The empirical results, which were gathered using the Primary Data collected among 740 employees in the SME manufacturing industries, are investigated via the Partial Least Squares Structural Equation Modelling (PLS-SEM) field. The analyses support the strong and positive relationship between the attitude of employees and organizational commitment, and they demonstrate job satisfaction as a partial mediator that increases the positive effects on outcomes of commitment. The structural model's overall validity and internal consistencies are supported by model fit indices. The results contribute to extant works by supporting the multidimensional nature of employee attitude in determining the organizational results, and they provide practical recommendations to the SME leaders, Human Resource (HR) professionals, and policymakers. The article highlights the importance of implementing good workplace attitudes to increase job satisfaction and encourage staff retention and long-term organizational performance. By explaining the psychological dynamics behind commitment, the study provides a strategic plan for strengthening human capital practices in the SME sector.

KEYWORDS : *Employee attitude, Job satisfaction, Organizational commitment, SMEs; PLS-SEM.*

INTRODUCTION

Small and Medium Enterprises (SMEs) play an essential role in the progress of developed and developing nations. They aid in economic growth through producing goods, providing employment, and growing local businesses. SMEs play a crucial role in India. They contribute approximately 45 per cent of the overall industrial production and almost 40 per cent of the nationwide yields. More to the point, they employ more than 120 million individuals, which makes them one of the biggest employers in the country. This demonstrates that SMEs represent a robust sector of the

economy and an essential source of revenue to many households (Vidharani & Maheshkumar, 2025).

The flexible structure of SMEs is one of the reasons why they are very effective. Compared to big corporations, SMEs may have less strict rules and working relationships between employees and administrators, and quicker decision-making processes. Employees in most SMEs are more closely aligned with the business owners and leaders, and the work environment is more informal in many businesses (Aswathappa, 2005). This open and amicable arrangement helps to foster a favourable working environment in which staff feel

recognized and listened to. This environment may affect the workers' attitude, enthusiasm for their jobs, and whether they wish to remain a part of the company (Thompson, 2025).

SMEs, however, face numerous challenges, particularly when dealing with their employees. Most SMEs find it difficult to recruit highly talented and skilled individuals due to the inability to pay high salaries, provide professional development, and offer job security provided by bigger businesses. Although they may employ good workers, retaining them in the firm is hard (Zadeh et al., 2024). This is primarily because training opportunities are limited, less career advancement, and fewer employee benefits (Ahmad et al., 2010). Simultaneously, the most significant importance is providing additional skills to workers among their employees because skilled labourers play a role in the growth and better competition of the business in the market. The other critical issue is getting employees to care about the organization and adhere to its objectives (Cunningham & Rowley, 2010).

The key in this situation is recognizing how the worker feels and thinks about his job and his loyalty to the company. Employees with a good attitude are more likely to be motivated, responsible, and supportive of company goals. There is also a close relationship between organizational commitment, which is the willingness of an employee to remain in the organization and contribute to its success, as well as improved job performance and reduced turnover levels (J. Wang & Verma, 2012). With every employee contributing so much to SMEs, a positive attitude and commitment may sustain the company over time (Subramanian & Suresh, 2023).

The current research will examine how employee attitudes influence organizational commitment within the SME sector and determine whether job satisfaction is an intermediary variable. These goals aim to increase understanding of the psychological drivers of employee commitment in smaller organizations and enhance theoretical literature and practical human resource approaches to dealing with SMEs.

METHODOLOGY

This research design is quantitative, descriptive,

and correlational because it seeks to establish the relationship between job satisfaction, employee attitude, and organizational commitment in the setting of Small and Medium Enterprises (SMEs). The quantitative research method provides objective data collection and analysis that enables exploration of patterns, relationships and predictive relationships among constructs. A standardized measure uses a cross-sectional survey to gather information at a specific time. The study population will be comprised of the employees who work in the SMEs (registered) that engage in operations in Bengaluru, Karnataka. The criteria used to arrive at such classification of these organizations are the definitions provided in the MSMED Act, 2006, which categorizes enterprises according to limits in investments and turnover.

A purposive sampling technique is a non-probability sampling design, and the manufacturers are included in the companies. The employees must have at least six months' experience in their organization. The total number of respondents should be 740, which will be statistically adequate for the correlation and regression analysis (Hair et al., 2018). Primary data is gathered with the help of a structured tool that is distributed online (Google Forms). SME management permits before entry, and the respondents are informed of the purpose of the study. The survey will be voluntary, and responses will be anonymous so that respondents can give serious answers. Data collection is done with uninformed consent.

Employee attitude is measured using a structured attitude measure drawn from the ABC Model of Attitude (De Montlibert et al., 1961). This model theorizes the concept of attitude based on three main attributes: affective, behavioural, and cognitive. The scale has 15 items with five items serving as the representation of each component. It measures responses using a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). This model gives an integrated view of the emotional reactions, behavioural intentions, and belief systems that employees would employ concerning their working environment. The Minnesota Satisfaction Questionnaire (MSQ)- Short Form Weiss et al. (1967) will be used in assessing job satisfaction. This instrument has 20 items of job satisfaction. All the items have the same 5-point Likert scale. MSQ is an instrument that is well-

validated and applicable in the SME scenario where both the monetary and non-monetary aspects affect the level of satisfaction. Organizational commitment can be assessed using the Three-Component Model Meyer and Allen (1991), wherein the concept of commitment is captured from the perspectives of affective, Continuance, and normative formats. It has 18 items and six under each component, rated using a 5-point Likert scale. This tool is deemed powerful in comprehending the level and quality of an employee's psychological connection with their organization, especially in the environment of SMEs that is resource-lean and dynamic.

RESULTS

Table 1: Reliability Analysis

Construct	No. of Items	Cronbach's Alpha (α)	Composite Reliability (ρ_c)	Average Variance Extracted (AVE)
Employee Attitude	15	0.892	0.914	0.606
Job Satisfaction (MSQ)	20	0.901	0.924	0.610
Organizational Commitment	18	0.911	0.933	0.615

The analysis of the reliability and validity of the three constructions, as per Table 1, namely, Employee Attitude, Job Satisfaction, and Organisational Commitment, shows that all scales' measures show good psychometric outcomes. Employee Attitude scale of 15 items, which was developed using the ABC model, had a Cronbach's Alpha of 0.892, implying high internal consistency. Its composite reliability (0.914) proved that the indicators consistently construct the variable. The average variance extracted (AVE) is 0.606, and the recommendation is that it should be proposed to be at least 0.50, which is better than 0.50; hence, it supports good convergent validity (Ali et al., 2017). These findings validate that the scale is an effective instrument for measuring the emotional, behavioural, and cognitive aspects of the attitude of employees.

In the same manner, the construct of Job Satisfaction was measured in this study using the Minnesota Satisfaction Questionnaire (MSQ) -Short Form, with 20 items, which showed a Cronbach Alpha of 0.901 and an index of composite reliability of 0.924, out of which scores equate to a perfect level of good internal

consistency and reliability. The AVE of 0.610 is an appropriate confirmation that the construct can explain enough of the variance in the observed indicators. These results make the MSQ a valid and dependable tool in determining intrinsic and extrinsic dimensions of job satisfaction, especially in the SME sector, where non-financial considerations are vital (James & R, 2024).

Organizational Commitment construct scored the highest on the reliability index, including the three items fronted by the 18-item Three-Component Model. Its Cronbach Alpha was 0.911 and composite reliability was 0.933, indicating excellent internal consistency and a high intercorrelation of indicators. The AVE of 0.615 also shows much convergent validity. These values suggest that this tool helps measure employees' psychological attachment towards their organizations, such as affective, Continuance, and normative commitment. Overall, the measurement model demonstrates that all three constructs are sufficiently measured, allowing them to be used in studying employee attitude and organizational results at small and medium-sized enterprises (James & R, 2025).

Table 2: Discriminant Validity

Construct	Employee Attitude	Job Satisfaction	Organizational Commitment
Employee Attitude	0.778		
Job Satisfaction	0.592	0.781	
Organizational Commitment	0.624	0.601	0.784

The Discriminant validity of measures was checked by following the Fornell-Larcker criterion, as shown in Table 2, which requires that the square root of the average variance extracted (AVE) of any construct be higher than its correlation with any other construct of the model. The square root of the AVE of Employee Attitude was 0.778, bigger than the correlations with Job Satisfaction (0.592) and Organisational Commitment (0.624). Similarly, Job Satisfaction has a square root of AVE of 0.781, beyond its correlation levels with Employee Attitude (0.592) and Organisational Commitment (0.601). Lastly, Organizational commitment had a square root of AVE value of 0.784, larger than its correlations to Employee Attitude of 0.624 and Job Satisfaction of 0.601. Such

findings confirm that all the constructs are empirically independent and discriminant validity is generated per the Fornell-Larcker criterion (Kavitha, 2025).

Table 3: Demographic Variables

Demographic Variable	Category	Frequency (n)	Percentage (%)
Age	18–36 years	240	32.43%
	37–55 years	340	45.95%
	56 and above	160	21.62%
Gender	Male	420	56.76%
	Female	300	40.54%
	Not Prefer to Say	20	2.70%
Educational Qualification	Schooling	80	10.81%
	Graduate	240	32.43%
	Post Graduate	280	37.84%
	Professional	140	18.92%
Annual Income	Below ₹2,50,000	160	21.62%
	₹2,50,001–₹5,00,000	200	27.03%
	₹5,00,001–₹7,50,000	180	24.32%
	₹7,50,001–₹10,00,000	120	16.22%
	Above ₹10,00,001	80	10.81%
Years of Experience	Less than 1 year	100	13.51%
	Above 1 to <3 years	180	24.32%
	Above 3 to <5 years	220	29.73%
	Above 5 years	240	32.43%
Current Position in Organisation	Manager Level	190	25.68%
	Supervisor Level	260	35.14%
	Junior Level	290	39.19%

The demographic profile of the respondents contained in Table 3 shows that the proportion of industrial manufacturing SMEs is a well-distributed and diverse workforce. The respondents are in the age bracket of 37 to 55 years, which is the middle career population representing much work experience (45.95 %), the

second highest age bracket is 18 to 36 years (32.43 %) and thirdly is the over 56 years age group (21.62 %), which makes the sample to be generational diverse. Regarding gender, 28.64 per cent are male, 20.55 per cent are female, and 2.70 per cent are Not Prefer to Say, indicating an average gender representation. Most respondents are qualified in education, 37.84 % are postgraduate, 32.43 % are graduates, 18.92 % are professionals, and only 10.81 % are schooled. The levels of income are divided into categories, with 27.03 per cent falling in between 2.5 and 5 lakh, 24.32 per cent between 5 and 7.5 lakh and 21.62 per cent below 2.5 lakh, whereas 16.22 per cent and 10.81 per cent would fall under 7.5-10 lakh and above 10 lakh, respectively, showing a middle-income-dominated labour force. Regarding work experience, with more than 5 years, 29.73 % of employees have 3-5 years, and 24.32 % have 1-3 years, but only 13.51 % have under a year, characteristic of a highly experienced workforce. Under organizational roles, 39.19 % are in junior positions, 35.14 % are in supervisor roles, and 25.68% are in the managerial level, indicating a concentrated workforce in the operational levels with an adequate representation in each hierarchical level. Table 3 shows that a mature, educated, experience-intensive workforce is a key to interpreting behavioural patterns and developing an organizational growth approach in SMEs.

Table 4: Measurement Model 1: Employee Attitude towards Organisational Commitment in SMEs

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics	P values
EA -> OC	0.856	0.857	0.010	81.807	0.000

The structural model analysis shown in Table 4 indicates that Employee Attitude (EA) and Organisational Commitment (OC) are significantly and firmly connected. The path coefficient (Original Sample = 0.856) suggests that employee attitude and organizational commitment are expected to increase by 0.856 units when employee attitude increases by a unit, which means that the effect is significant and positive. Positive employee attitude significantly contributes to the psychological attachment that employees may have towards the organization.

The sample mean (M = 0.857) is nearly equal to the

original estimate, and the standard deviation (STDEV = 0.010) is low, which indicates high reliability and low instability between bootstrapped estimates. The t-statistic value of 81.807 is tremendous, significantly above the critical value of 1.96, which is the value for 5% significance. In contrast, the p-value is 0.000, statistically significant at the 0.001 level. These results concur with the hypothesis that employee attitude has been a powerful indicator of organizational commitment in SMEs.

Theoretically, the outcome aligns with the literature on social exchange theory and organizational behaviour, which postulates that when employees develop positive attitudinal responses, including trust, recognition, and satisfaction, they can respond through increased commitment and loyalty. These suggestions are also very relevant to SME managers and HR practitioners in optimizing retention and organizational performance with the help of attitudinal interventions.

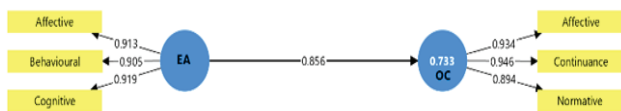


Fig. 1: Path Analysis showing Employee Attitude towards Organisational Commitment in SMEs

The PLS-SEM model shows that there is a high and significant positive relationship between Employee Attitude (EA) and Organizational Commitment (OC) as Shown in Figure 1, where the path coefficient is 0.856, which means that the higher the positive affective, behavioural and thinking attitude of the employees, the more they will be able to increase their commitment towards the organization. The strong R² of 0.733 of the Organisational Commitment indicates that 73.3 per cent of its values are mapped by employee attitude, which suggests the model values' significance. EA and OC are reflective constructs; in that case, the latent variables will affect the observed variables. Correlations of the indicators of EA- Affective (0.913), Behavioural (0.905), and Cognitive (0.919) have a high correlation, thus depicting that whenever there is a change in the latent construct, it is represented in all the dimensions of the attitude. In the same way, OC is indicated reflectively by three scores that typify Affective (0.934), Continuance (0.946), and Normative

(0.894) commitment, all of which have high measures on the underlying construct. These high loadings declare the indicator's reliability and convergent validity, thus confirming the organizational commitment as a multidimensional construct that is defined based on emotional attachment and the perceived cost of quitting, and we feel obligated to this aspect. The findings, therefore, confirm the theoretical premise that when evaluated in totality, employee attitude plays a critical role in establishing long-term organizational commitment.

Measurement Model: 2 Mediating Role of Job Satisfaction between Employee Attitude and Organisational Commitment

Table 5: Path Analysis Showing Employee Attitude on Organisational Commitment Mediating Role of Job Satisfaction

Variables	Original Sample (O)	Sample Mean (M)	Standard Deviation	T Statistics	P- Values
EA → JS	0.874	0.874	0.01	87.123	0.000
EA → OC	0.495	0.496	0.043	11.463	0.000
JS → OC	0.406	0.404	0.043	9.423	0.000

This structural model in Table 5 explains the significant and positive relationships between employee attitude (EA), job satisfaction (JS) and organizational commitment (OC). Ea-JS path coefficient = 0.874 with t-value = 87.123, p-value = 0.000, has a powerful and statistically significant effect on employee attitude on Job Satisfaction. Affective, behavioural, and cognitive elements of employee attitude substantially impact job satisfaction. The direct effect between EA and OC is 0.495 (t = 11.463, p = 0.000), which deviates towards having a moderate impact on OC, given that the direct effect findings between the two variables are significantly different. Moreover, the relationship between JS and OC is 0.406 (t = 9.423, p = 0.000), which means that job satisfaction also has a considerable and significant contribution to increasing organizational commitment. The combined results of these findings could be interpreted to further favorably indicate that job satisfaction could serve as a partial mediator between employee attitude and organizational commitment, as

the theory finds even more credence in the fact that a satisfied employee influenced by positive attitudes is more likely to be committed to the organization. The relationships are statistically significant, with all the relationships being meaningful at the 0.001 level; the standard errors are low, and the t-values are high, indicating the model's predictive validity and internal consistency.

CONCLUSION

The paper has explored the relationship between organizational commitment and employee attitudes in small and medium-sized manufacturing companies (SME). The findings indicate that positive employee attitudes, including affective, behavioural, and cognitive, are central to developing employee attachment and emotional ties to their organizations. Organizational loyalty and engagement are significantly fortified when organizational climate builds trust, recognition and general satisfaction.

In addition to a direct correlation between organizational employee attitudes and organizational commitment, the research was carried out to analyze the mediating effect of job satisfaction. The results reveal that a positive attitude on the part of employees will lead to a greater probability of working within a job-satisfying environment, which, in effect, would help facilitate organizational commitment. This partial mediation presents the idea that job satisfaction is a psychological portal through which the individual's attitude is geared toward enduring organizational engagement.

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A Study on Professional Factors Influencing Commitment of School Teachers in Tiruchirappalli District

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ABSTRACT

This study examines the influence of selected professional factors on the commitment of school teachers working in CBSE, Matriculation, and Government schools in Tiruchirappalli District. Teacher commitment is a critical component of educational effectiveness, institutional stability, and student achievement, and is often shaped by teachers' professional conditions. The present research specifically focuses on teaching experience, nature of employment (permanent or temporary), and monthly income as key professional determinants of teacher commitment.

The study adopts a descriptive and analytical research design, using primary data collected through a structured questionnaire administered to teachers across selected schools. Teaching experience is examined to understand whether length of service contributes to stronger emotional attachment, loyalty, and long-term involvement with the institution. The nature of employment is analyzed to assess differences in commitment between permanent and temporary teachers, particularly in terms of job security and organizational attachment.

Appropriate statistical tools such as mean analysis, t-tests, ANOVA, correlation, and regression analysis are employed to test the formulated null and alternative hypotheses. The findings of the study provide empirical evidence on whether professional factors significantly influence teacher commitment. The results are expected to highlight important differences in commitment levels based on experience, employment status, thereby offering valuable insights for school management and policymakers.

The study contributes to the existing literature on educational management by emphasizing the role of professional conditions in shaping teacher commitment. It also offers practical recommendations for improving teacher retention, motivation, and performance through better employment policies and compensation structures.

KEYWORDS : *Teacher commitment, Teaching experience, Nature of employment, Monthly income, Job security, Professional factors, Organizational commitment, School teachers, Tiruchirappalli district.*

INTRODUCTION

Education plays a vital role in the social, economic, and cultural development of a nation, and teachers are the cornerstone of any effective educational system [1]. The quality of education imparted in schools largely depends on the competence, dedication, and commitment of teachers. Teacher commitment reflects the extent to which teachers identify with their profession,

feel emotionally attached to their institutions, and are willing to invest sustained effort for the achievement of educational goals. A committed teacher not only delivers curriculum content effectively but also inspires students, contributes to institutional growth, and upholds professional and ethical standards [2].

In recent years, the teaching profession has undergone significant changes due to globalization, technological

advancements, curriculum reforms, and increasing accountability in the education sector [3]. Teachers are now expected to perform multiple roles beyond classroom instruction, including administrative duties, student mentoring, assessment management, parental communication, and continuous professional development. These expanding responsibilities, coupled with varying employment conditions, have a direct impact on teachers' commitment to their profession and institutions [4].

Teacher commitment is a multidimensional concept encompassing affective commitment (emotional attachment), continuance commitment (perceived cost of leaving), and normative commitment (sense of obligation to remain) [5]. High levels of commitment among teachers are associated with improved job performance, lower absenteeism, reduced turnover intentions, enhanced student outcomes, and overall institutional effectiveness. Conversely, low commitment can lead to job dissatisfaction, burnout, reduced teaching quality, and frequent attrition, which adversely affect the stability of the education system [6].

RESEARCH METHODOLOGY

The research methodology outlines the systematic procedures adopted to collect, analyze, and interpret data for examining the commitment of school teachers in selected CBSE, Matriculation, and Government schools. A well-defined methodology ensures the reliability, validity, and scientific rigor of the study.

Research Design

The study adopts a descriptive and analytical research design.

- The descriptive aspect helps in assessing the existing level of commitment among school teachers.
- The analytical aspect enables examination of the influence of selected professional factors—teaching experience, nature of employment, and monthly income—on teacher commitment through appropriate statistical techniques.

This design is suitable for understanding attitudes, perceptions, and relationships among variables in educational research.

Area of the Study

The study is conducted in selected CBSE, Matriculation, and Government schools located in Tiruchirappalli District. The district was chosen due to the presence of diverse school systems, representing both public and private educational management structures, and offering a suitable setting for comparative analysis.

Population of the Study

The population comprises all full-time school teachers working in the selected CBSE, Matriculation, and Government schools in Tiruchirappalli District. Teachers handling primary, secondary, and higher secondary classes are included to ensure comprehensive representation.

Sample Design

Sampling Technique

A stratified sampling technique is adopted. Teachers are categorized into three strata based on the type of school:

- CBSE schools
- Matriculation schools
- Government schools

This technique ensures proportional representation of teachers from each school category.

Sample Size

A total sample of 300 teachers is considered for the study, distributed as follows:

Type of School	Number of Schools	Teachers per School	Total Teachers
CBSE Schools	4	25	100
Matriculation Schools	4	25	100
Government Schools	4	25	100
Total	12	—	300

The sample size is considered adequate for statistical analysis and comparison across school types.

RESEARCH OBJECTIVES

The present study aims to examine the level of commitment among school teachers and the influence

of selected professional factors. The specific objectives of the study are as follows:

1. To assess the overall level of commitment among school teachers in selected CBSE, Matriculation, and Government schools of Tiruchirappalli District.
2. To examine the influence of teaching experience on the commitment of school teachers.
3. To analyze the effect of nature of employment (permanent or temporary) on teacher commitment.
4. To study the relationship between monthly income and teacher commitment.
5. To compare the level of teacher commitment across CBSE, Matriculation, and Government schools.
6. To provide suitable suggestions for enhancing teacher commitment based on the findings of the study.

RESEARCH HYPOTHESES

Based on the objectives of the study, the following null and alternative hypotheses are formulated:

Teaching Experience and Commitment

- H0: Teaching experience has no significant influence on the commitment of school teachers.
- H1: Teaching experience has a significant influence on the commitment of school teachers.

Nature of Employment and Commitment

- H0: Nature of employment (permanent or temporary) has no significant effect on the commitment of school teachers.
- H1: Nature of employment (permanent or temporary) has a significant effect on the commitment of school teachers.

DATA ANALYSIS AND INTERPRETATION

Influence of Teaching Experience on the Commitment of School Teachers

Table 1 presents the descriptive statistics of teacher commitment scores categorized according to teaching experience. The respondents are grouped into three experience categories: below 5 years, 5–10 years, and above 10 years. For each category, the number

of respondents (N), mean commitment score, and standard deviation are reported to examine variations in commitment levels across different experience groups.

Table 1: Descriptive Statistics of Teacher Commitment Based on Teaching Experience

Teaching Experience (Years)	N	Mean Commitment Score	Std. Deviation
Below 5 Years	90	3.21	0.54
5–10 Years	95	3.45	0.49
Above 10 Years	115	3.78	0.46
Total	300	3.5	0.55

The table reveals that teachers with above 10 years of experience exhibit the highest mean commitment score (3.78), indicating a higher level of commitment compared to other groups. Teachers with 5–10 years of experience show a moderate commitment level with a mean score of 3.45, while teachers with below 5 years of experience record the lowest mean commitment score (3.21). The increasing trend in mean scores suggests that teacher commitment tends to improve with increased teaching experience. The relatively lower standard deviation values indicate consistency in responses within each group.

Table 2 presents the results of a one-way Analysis of Variance (ANOVA) conducted to examine whether teaching experience significantly influences the commitment of school teachers. The table includes the sum of squares, degrees of freedom, mean square values, F statistic, and significance level (p-value), comparing variations between experience groups and within groups.

Table 2: One-Way ANOVA Results for Teaching Experience and Teacher Commitment

Source of Variation	Sum of Squares	df	Mean Square	F Value	Sig. (p)
Between Groups	12.684	2	6.342	23.781	0
Within Groups	79.216	297	0.267		
Total	91.9	299			

The ANOVA results show an F value of 23.781 with a p-value of 0.000, which is statistically significant at the 5% level. This indicates that there is a significant

difference in teacher commitment across different teaching experience groups. Since the p-value is less than 0.05, the null hypothesis stating that teaching experience has no significant influence on teacher commitment is rejected. The findings confirm that teaching experience significantly influences the level of commitment among school teachers, with more experienced teachers demonstrating higher commitment levels.

Effect of Nature of Employment on the Commitment of School Teachers

Table 3 presents the descriptive statistics of teacher commitment scores categorized according to the nature of employment. The respondents are classified as permanent teachers and temporary teachers. The table reports the number of respondents (N), mean commitment score, standard deviation, and standard error mean for each employment category to examine differences in commitment levels.

Table 3: Descriptive Statistics of Teacher Commitment Based on Nature of Employment

Nature of Employment	N	Mean Commitment Score	Std. Deviation	Std. Error Mean
Permanent Teachers	180	3.76	0.48	0.036
Temporary Teachers	120	3.29	0.55	0.05
Total	300	—	—	—

The table shows that permanent teachers have a higher mean commitment score (3.76) compared to temporary teachers (3.29). This indicates that permanent teachers exhibit a greater level of commitment towards their profession and institution. The lower standard error values suggest reliability and consistency in the mean scores. Overall, the results suggest that employment stability may play an important role in enhancing teacher commitment.

Table 4 presents the results of Levene's Test conducted to assess the assumption of equality of variances between permanent and temporary teachers' commitment scores. The table includes the F value and the corresponding significance (p-value).

Table 4: Levene's Test for Equality of Variances: Nature of Employment and Teacher Commitment

F	Sig.
1.872	0.172

The Levene's test result shows a p-value of 0.172, which is greater than the significance level of 0.05. This indicates that the assumption of equal variances is satisfied, and therefore, the independent samples t-test assuming equal variances is appropriate for further analysis.

Table 5 presents the results of the independent samples t-test conducted to examine whether there is a significant difference in commitment levels between permanent and temporary school teachers. The table includes the t value, degrees of freedom, significance level (two-tailed), mean difference, standard error difference, and the 95% confidence interval of the mean difference.

Table 5: Independent Samples t-Test Results for Nature of Employment and Teacher Commitment

t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference
7.318	298	0	0.47	0.064	0.34 – 0.60

The t-test results reveal a t value of 7.318 with 298 degrees of freedom and a p-value of 0.000, which is statistically significant at the 5% level. The mean difference of 0.47 indicates that permanent teachers have significantly higher commitment levels than temporary teachers. Since the p-value is less than 0.05, the null hypothesis is rejected. The findings confirm that the nature of employment has a significant effect on the commitment of school teachers, with permanent teachers demonstrating higher commitment.

FINDINGS OF THE STUDY

Based on the analysis and interpretation of data collected from 300 school teachers in selected CBSE, Matriculation, and Government schools of Tiruchirappalli District, the following key findings are drawn:

1. Influence of Teaching Experience on Teacher Commitment: The study found a clear and positive relationship between teaching experience and

teacher commitment. Teachers with above 10 years of experience demonstrated the highest level of commitment, followed by those with 5–10 years of experience, while teachers with less than 5 years of experience exhibited comparatively lower commitment levels. The one-way ANOVA results confirmed that the differences in commitment across experience groups are statistically significant ($p < 0.05$). This indicates that teaching experience plays a crucial role in strengthening teachers' emotional attachment, loyalty, and long-term involvement with their institutions.

2. **Effect of Nature of Employment on Teacher Commitment:** The findings revealed a significant difference in commitment levels between permanent and temporary teachers. Permanent teachers recorded a higher mean commitment score than temporary teachers. The independent samples t-test showed a statistically significant result ($p < 0.05$), leading to the rejection of the null hypothesis. This finding suggests that job security and employment stability are important determinants of teacher commitment.
3. **Overall Commitment Level:** The overall mean commitment score indicates a moderately high level of commitment among school teachers. However, variations exist based on professional factors such as experience, employment status, and income.

Suggestions

Based on the findings, the following suggestions are offered to school management, policymakers, and educational administrators to enhance teacher commitment:

1. **Support for Early-Career Teachers:** Special mentoring programs, induction training, and professional development opportunities should be provided to teachers with less than five years of experience to strengthen their confidence, engagement, and commitment.
2. **Enhancing Employment Stability:** Wherever feasible, schools should minimize excessive reliance on temporary appointments and provide

clear pathways to permanent employment. Improved job security can significantly enhance teachers' sense of belonging and commitment.

CONCLUSION

Teacher commitment is a vital element in ensuring the quality, stability, and effectiveness of the school education system. The present study examined the influence of teaching experience, nature of employment, and monthly income on the commitment of school teachers in selected CBSE, Matriculation, and Government schools of Tiruchirappalli District.

The findings conclusively demonstrate that teaching experience significantly enhances teacher commitment, with experienced teachers showing higher levels of dedication and organizational attachment. The study also establishes that nature of employment plays a critical role, as permanent teachers are more committed than their temporary counterparts. Furthermore, monthly income is found to be a significant and positive predictor of teacher commitment, emphasizing the importance of adequate and equitable compensation.

Overall, the study highlights that professional factors substantially influence teacher commitment and that improving employment conditions and compensation structures can lead to a more motivated and committed teaching workforce. The insights gained from this research can assist educational administrators and policymakers in formulating effective strategies to enhance teacher commitment, thereby contributing to improved educational outcomes and institutional effectiveness.

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Influence of Online Reviews on Consumer Perception and Purchase Intention of Branded Jewellery in India

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ABSTRACT

This research evaluates the effects of online reviews on consumers' perceptions and their purchase intentions in the branded jewellery context in India. Online reviews have emerged as a critical information source for consumers as digital concepts and its use has rapidly increased. Therefore, online reviews are especially important in the contexts of high involvement products such as jewellery. The research includes a questionnaire sample of 570 respondents and the data was analyzed through Structural Equation Modeling (SEM) using SmartPLS. The results discovered that online reviews significantly affect consumers' perceptions, which in turn significantly positively influence their purchase intentions. Furthermore, consumers' perceptions were found to partially mediate the relationship between online reviews and purchase intentions. We conclude that branded jewellery retailers need to ensure they are managing their digital presence, as well as positive online reviews to build trust with the consumer base to drive long-term sales. The study adds to the theoretical literature as well as practical suggestions for marketers in the luxury and jewellery sectors.

KEYWORDS : *Online reviews, Consumer perception, Purchase intention, Branded jewellery, India, eWOM, SmartPLS, Mediation analysis.*

INTRODUCTION

In recent years, the Indian jewellery sector has gone through a tremendous transformation, which is energized by the swift digitization of retail and the changing preferences of tech-savvy consumers. One of the most significant contributors of purchase decisions in this digital age has been the online review, a form of electronic word-of-mouth (eWOM). With more and more consumers turning to content created by their peers to support their purchases, online reviews are changing notions, trust and eventually purchase intentions, especially for high-involvement purchase categories like branded jewellery. Historically rooted in culture and luxury, the Indian jewellery market is beginning to see consumer definitions that are not exclusively attached to touchpoints or brand provenance factors. Consumers are now relying on digital indicators, such

online feedback, social proof and influencer support. Research shows that online reviews and user generated content create trust and influence brand assessments of potential consumers, especially young, educated, urban consumers, which have dominated and continue to dominate e-commerce (Khan et al., 2024; Macheka et al., 2024).

Because jewellery is a major financial and emotional investment, eWOM and social media engagement are significant factors in consumer decision making. Authenticity and evidence-based trustworthy reviews create less uncertainty when purchasing jewellery online. Lumingkewas et al. (2023) suggest social media marketing and eWOM present an immediate impact on brand awareness and purchase intention in the jewellery market. Building on this, Shah et al. (2024) concluded that branded jewellery and user-generated content

serve distinct importance in consumer trust building in jewellery e-commerce in China and we observe much of the same in India. Moreover, the branded jewellery market in India continues to grow, as consumers demand more transparency, engagement and the higher trust associated with brands, quality, consistency and fixed prices which ultimately relate to consumer investment (Bhattacharyya & Karmakar, 2024; Misra et al., 2024). Branded jewellery is most heavily influenced by eWOM to the degree that it is more vulnerable to the risk of eWOM being fostered as part of the digital campaign; this due to branded jewellery being more present and therefore exposed online (Athithyan & Mannava, 2022; Pol et al., 2024).

RESEARCH OBJECTIVES

1. To examine the impact of online reviews on consumer perception of branded jewellery in India.
2. To analyze the relationship between consumer perception formed through online reviews and their purchase intention.
3. To identify the key review-related factors (e.g., review valence, volume, source credibility) that most significantly affect purchase intentions for branded jewellery.

Hypotheses Development

Based on the above literature, the following hypotheses are proposed:

- H1: Online reviews have a significant impact on consumer perception of branded jewellery in India.
- H2: Consumer perception positively influences purchase intention of branded jewellery.
- H3: Online reviews directly and positively influence the purchase intention of consumers toward branded jewellery.

The academic evidence shows that online reviews, customer perceptions and purchase intention are all tightly intertwined within the branded jewellery market context. As online interactions increase in India, it is imperative to understand these relationships if jewellery brands are going to effectively use electronic commerce and digital marketing.

METHODOLOGY

This study utilized a quantitative research design using the SmartPLS Structural Equation Modeling (SEM) method to test the relationships between the important constructs. Data were collected through a structured online questionnaire across metropolitan cities of India targeting consumers who have purchased or considered purchasing branded purchased branded jewellery online. The total was a valid sample of 570 responses. The research model consists of Online Reviews with Independent Variable (IV), Consumer Perception with Mediating Variable (MV1) and Purchase Intention as Dependent Variable (DV). SmartPLS 4.0 was used to assess the measurement and structural models including reliability, validity and path coefficients to test the hypotheses of the research. This approach allows for a comprehensive investigation of the direct and indirect effects. It was in keeping with the goal of the study to investigate the test on the mediating role of consumer perception in the context of online jewellery purchases.

RESULTS AND FINDINGS

Table 1: Demographic Profile of Respondents (N = 570)

Demographic Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	225	39.50%
	Female	335	58.80%
	Prefer not to say	10	1.70%
Age Group	18–25 years	185	32.50%
	26–35 years	230	40.40%
	36–45 years	105	18.40%
	46 years and above	50	8.70%
Education	Undergraduate	160	28.10%
	Postgraduate	310	54.40%
	Doctorate	35	6.10%
	Others	65	11.40%
Monthly Income (INR)	Less than ₹25,000	95	16.70%
	₹25,000 – ₹50,000	180	31.60%
	₹50,001 – ₹1,00,000	200	35.10%
	Above ₹1,00,000	95	16.70%

Occupation	Student	150	26.30%
	Working Professional	305	53.50%
	Homemaker	45	7.90%
	Entrepreneur	40	7.00%
	Others	30	5.30%

The demographic profile of the 570 respondents suggests that they represent a capture, diverse and relevant sample for the research study of online purchasing behavior of branded jewellery in India. First, there are significantly more female respondents (58.8%), which indicates a considerable interest and influence in the attention of jewellery purchase. Secondly, there is a penchant of respondents in their 26–35 year cohort (40.4%) with 18–25 year respondents differentiating between the ages, with both age groups aligning to a greater extent with younger, digitally active consumers who become the incisive segment to the market. Notably, more than half of the respondents had postgraduate education (54.4%) which suggest a well-informed audience and possibly more brand conscious. Furthermore, a majority of respondents represented "middle income" to "upper-middle income" segments with 35.1% of respondents earning ₹50,001–₹1,00,000 and 31.6% earning between ₹25,000–₹50,000, thus validating the targeting cohorts for mid-tier branded jewellery to branded premium jewellery. Additionally, working professionals (53.5%) as a single category possess the majority demographic of all occupational respondents which further supports the relevance of this sample as it relates to online luxury buying behavior. Overall, the combination of the demographic profile of the respondents fits with the overall point of study for the combination of digital influence on purchase intention of branded jewellery among educated urban users.

Table 2: Reliability and Validity Measures

Construct	Cronbach's Alpha (CA)	Composite Reliability (CR)	AVE	Indicator Loadings (Range)
Online Reviews (IV)	0.873	0.906	0.658	0.74 – 0.89
Consumer Perception (MV1)	0.861	0.901	0.645	0.72 – 0.87

Purchase Intention (DV)	0.889	0.921	0.697	0.76 – 0.90

Analysis of the reliability and validity suggests that all three constructs, Online Reviews, Consumer Perception and Purchase Intention, fulfilled the appropriate cut-off levels for internal consistency and convergent validity. Cronbach's Alpha was found to range from 0.861 to 0.889 and Composite Reliability (CR) estimates ranged from 0.901 to 0.921, with both measures being above the suggested cutoff of 0.70; this suggests good internal consistency among items. Average Variance Extracted (AVE) values were above 0.50 for all constructs, indicating each construct accounted for more than half of the variance of its indicators, thus establishing good convergent validity. Item loadings also exceeded the 0.70 threshold, which provided additional evidence of reliability of individual items. Thus, evidence has supported the measurement model and its use in SmartPLS to conduct structural equation modeling.

Table 3: SEM Model Goodness-of-Fit Summary

Fit Index	Threshold	Observed Value	Interpretation
SRMR (Standardized Root Mean Square Residual)	< 0.08	0.062	Good model fit
NFI (Normed Fit Index)	> 0.90	0.915	Acceptable model fit
Chi-square (χ^2)	Lower is better	842.36	Acceptable for large samples
d_ULS (Unweighted Least Squares Discrepancy)	Closer to zero	0.774	Indicates good fit
d_G (Geodesic Discrepancy)	Closer to zero	0.493	Indicates good fit
R ² (Purchase Intention)	≥ 0.26 (moderate)	0.487	Moderate explanatory power

Results showed that the SEM model had an acceptable/good fit based on several model fit statistics. The structural model shows a good overall fit, with an SRMR value of 0.062 well below the threshold of 0.08. The Normed Fit Index (NFI) was also acceptable, at 0.915,

which is above the usual cut-off of 0.90. The $R^2 = 0.487$ for Purchase Intention indicates that approximately 48.7% of the variance in Purchase Intention was explained by online reviews and consumer perception. This explanatory power would be considered moderate. Finally, the d_{ULS} and d_G were low at 0.774 and 0.493, respectively, further demonstrating the general strength and consistency of the model. Overall, these findings indicated that the structural model was adequate to test the hypotheses and investigate consumer behavior with respect to branded jewellery.

Table 4: Structural Estimates

Path	Path Coefficient (β)	t-value	p-value	Effect Type
Online Reviews → Consumer Perception	0.621	15.47	< 0.001	Direct
Consumer Perception → Purchase Intention	0.529	12.82	< 0.001	Direct
Online Reviews → Purchase Intention	0.287	6.34	< 0.001	Direct
Online Reviews → Consumer Perception → Purchase Intention	0.329	11.02	< 0.001	Indirect (Mediated)

The structural model indicates strong and statistically significant relationships among the key constructs. The path from Online Reviews to Consumer Perception has a large path coefficient ($\beta = 0.621$, $p < 0.001$), suggesting that consumer perceptions- positive or negative- about branded jewellery are contingent upon a review. In addition, Consumer Perception has a strong path coefficient to Purchase Intention ($\beta = 0.529$, $p < 0.001$), indicating that consumer perceptions (based on constructs of trust, quality and credibility) impact the likelihood to purchase. The direct path from Online Reviews to Purchase Intention is significant ($\beta = 0.287$, $p < 0.001$) and suggests that reviews can also influence purchase decision independent of perceptions.

The mediation analysis provides further insight into the relationships that position the indirect effect of Online Reviews on Purchase Intention through Consumer Perception ($\beta = 0.329$, $p < 0.001$) as significant, verifying

that perception is a partial mediator. This means that while the Online Reviews directly influence Purchase Intention, it exerts a stronger relationship when it positively influences perception of the brand. The total effect ($\beta = 0.616$) shows the cumulative strength from both direct and indirect paths, contributing evidence that online reviews are an important part of the purchase decision process for consumers. This evidence informs branded jewellery retailers to consider leveraging the direct and indirect impacts of online reviews, noting that their quality and perceptions of quality, are especially important influences on buying behaviours.

CONCLUSION

This research examined how online reviews influence consumer perceptions and purchase intentions in the branded jewelry segment in India, providing valuable insights into digital consumer behavior in the luxury context. The results confirmed that online reviews significantly influence consumer perceptions, which in turn has a strong influence on purchase intentions. The research also confirmed that consumer perceptions partially mediated the relationship between online reviews and purchase intentions, indicating that online reviews have both a direct effect and an effect that is strengthened via consumer perceptions of the brand. Results highlight the critical role of digital feedback in the high-involvement consumer decision-making process for jewelry purchases.

As Indian consumers become more dependent on digital platforms to evaluate luxury products, it is crucial for branded jewellery retailers to tap into and maximise the potential of online reviews to build credibility, trust and engage consumers. In the competitive landscape of the digital marketplace, dealing with customer reviews and developing product quality and authentic experiences all go a long way in fostering purchase intentions. This research increases our understanding of eWOM and luxury consumer behaviour in the academic literature and offers practical guidance to jewellery brands seeking to improve their online engagement strategies and build lasting relationships with tech-savvy consumers.

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Impact of Banks' Financial Support on the Business Performance of Start-Up Enterprises in Bangalore

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ABSTRACT

Start-up enterprises contribute significantly to economic growth and employment generation; however, their performance is often constrained by limited access to formal finance. This study examines the impact of banks' financial support on the business performance of start-up enterprises in Bangalore. Primary data were collected from 230 start-up firms using a structured questionnaire. Banks' financial support and business performance dimensions were measured using a five-point Likert scale. The study results indicate a significant positive relationship between banks' financial support and business performance. Bank credit was found to positively influence business growth, profitability, return on investment, competitive advantage, technology adoption, equipment investment, and the capacity to undertake multiple projects simultaneously. The findings highlight the importance of bank-based financing in enhancing the operational and financial performance of start-up enterprises. The study contributes empirical evidence to the literature on entrepreneurial finance by demonstrating the role of banks' financial support in improving start-up performance within an emerging market context.

KEYWORDS : *Bank credit, Business performance, Entrepreneurial finance, Financial access, Financing constraints, Start ups.*

INTRODUCTION

Start-up enterprises have emerged as a critical driver of economic growth, innovation, and employment generation in emerging economies, particularly in India. With rapid globalization, technological advancement, and policy-driven entrepreneurial initiatives, India has witnessed a substantial increase in start-up activity over the past decade. Bangalore, often referred to as the "Start-up Capital of India," plays a pivotal role in this ecosystem due to its strong infrastructure, skilled human capital, and access to financial institutions (NASSCOM, 2024). The performance and sustainability of start-up enterprises, however, remain highly contingent on their ability to secure adequate and timely financial support, particularly from formal banking institutions.

Banks continue to be one of the most significant sources of external finance for start-up enterprises, especially

during their early stages of development. Financial support from banks in the form of term loans, working capital finance, credit guarantees, and government-backed lending schemes enables start-ups to invest in technology, expand operations, manage cash flows, and withstand market uncertainties (Reserve Bank of India [RBI], 2024). Despite policy interventions such as Start-up India, Mudra, and credit guarantee schemes, access to bank finance remains uneven and challenging for many start-up enterprises due to information asymmetry, lack of collateral, and perceived business risk (World Bank, 2025).

Empirical evidence suggests that adequate financial support positively influences business performance by enhancing operational efficiency, market competitiveness, and growth potential (Beck & Demirgüç-Kunt, 2024). However, start-ups—

particularly small and early-stage enterprises—often face constraints in accessing formal credit compared to established firms. This financing gap can adversely affect their productivity, innovation capacity, and long-term survival (OECD, 2024). In India, where start-ups contribute significantly to employment creation and value addition, limited access to bank finance poses a structural challenge to inclusive economic development (Government of India, 2024).

Bangalore's start-up ecosystem, while robust, is characterized by intense competition and a high rate of business failure, underscoring the importance of financial resilience and institutional support. Banks, as key financial intermediaries, play a crucial role not only in providing capital but also in fostering financial discipline, risk management, and business credibility among start-up enterprises (Sharma & Rao, 2025). Understanding how banks' financial support influences the business performance of start-ups is therefore essential for policymakers, financial institutions, and entrepreneurs alike.

Although prior studies have examined start-up financing and firm performance, there remains limited empirical evidence focusing specifically on the role of banks' financial support within the context of Bangalore's start-up ecosystem. Moreover, existing literature has yet to establish a comprehensive framework explaining why some start-ups leverage bank finance effectively to enhance performance while others struggle despite similar access to financial resources (Kumar & Mehta, 2024). Against this backdrop, the present study seeks to examine the impact of banks' financial support on the business performance of start-up enterprises in Bangalore, thereby contributing to the growing body of literature on entrepreneurial finance and small business performance.

RESEARCH HYPOTHESIS

- H1: Banks' financial support has a significant impact on the business performance of start-up enterprises.
- H2: Return on investment (ROI) has a significant influence on the business performance of start-up enterprises.

- H3: Business growth has a significant influence on the business performance of start-up enterprises.
- H4: Profitability has a significant influence on the business performance of start-up enterprises.
- H5: Competitive advantage has a significant influence on the business performance of start-up enterprises.
- H6: Investment in equipment has a significant influence on the business performance of start-up enterprises.
- H7: Adoption of recent technology has a significant influence on the business performance of start-up enterprises.
- H8: The capacity to undertake multiple projects simultaneously has a significant influence on the business performance of start-up enterprises.

MATERIALS AND METHODS

The primary objective of this study is to examine the impact of banks' financial support on the business performance of start-up enterprises. The study focuses on start-up firms operating in Bangalore, a major entrepreneurial hub with a high concentration of early-stage businesses. A sample of 230 start-up enterprises was selected using a random sampling technique to ensure adequate representation. Primary data were collected through a structured questionnaire administered to the respondents. The research variables were measured using a five-point Likert scale. The collected data were analysed using SPSS and SPSS-AMOS. Descriptive statistics were employed to summarize the sample characteristics, and a single-sample t-test was used for preliminary analysis. Path analysis was then applied to examine the causal relationships among banks' financial support and the business performance constructs.

Reliability Test for Research Tool

Cronbach's alpha (α) was used to assess the internal consistency of the study variables (Table 1). An alpha value of 0.60 or above indicates acceptable reliability and satisfactory internal consistency (Sekaran & Bougie, 2016). All constructs in the study recorded Cronbach's alpha values exceeding the recommended threshold, confirming the reliability of the measurement scales.

Table 1: Reliability Statistics

Constructs	No. of Items	α
Bank credit support	8	.824
Business performance	7	.751
Overall	15	.862

Normality Test for the Study Variables

The Kolmogorov–Smirnov (K–S) test was employed to assess the normality of the data. The test results indicate that all variables recorded significance values greater than 0.05, confirming that the data follow a normal distribution (Table 2). Consequently, the dataset was deemed suitable for the application of parametric statistical techniques.

Table 2: Normal Distribution of Study Variables

Constructs	K-S Test	Sig.
Bank credit support	.183	.000
Business performance	.173	.000

RESULTS

The firmographic profile of the sampled start-up enterprises indicates that a majority (61.7%) operate as sole proprietorships, while the remaining firms function as partnerships. Nearly half of the enterprises (46.8%) are medium-sized, followed by small (29.5%) and large firms (23.6%). With respect to business age, 37.3% of the start-ups have been operating for 5-7 years, suggesting a relatively mature segment within the sample. In terms of sectoral distribution, 43.2% of the enterprises are technology-based start-ups, followed by service-oriented (33.6%) and food and beverage start-ups (23.2%). Regarding financial performance, most start-up enterprises (44.5%) reported an annual turnover in the range of ₹11–20 lakhs (Table 3).

Table 3: Firmography of the Start Up Businesses

Firmography		Frequency (N=230)	%
Nature of organisation	Sole proprietorship	142	61.7
	Partnership	88	38.3
Type of organisation	Large	54	23.6
	Medium	108	46.8
	Small	68	29.5

Age of business (in years)	Below 2	33	14.5
	3-4	70	30.5
	5-7	86	37.3
	Above 7	41	17.7
Nature of start ups	Tech start ups	99	43.2
	Food & Beverages Startups	53	23.2
	Services Startups	77	33.6
Annual turnover (in Lakhs)	Below 10	66	28.6
	11-20	102	44.5
	Above 20	62	26.8

Table 4: Descriptives and Single-sample 't' test for Banks' Financial Support for Start Up Businesses

Items	$\bar{x}$	σ	t	P.
Bank loans are important for my start-up business.	4.03	.622	13.50	.000
It is easy for my business to get a bank loan.	4.39	.608	22.18	.000
My business can easily access bank loan facilities.	4.15	.747	17.26	.000
Bank loans help improve my business performance.	4.17	.673	14.82	.000
My business receives overdraft facilities from banks.	4.03	.627	12.76	.000
Overdraft facilities help my business perform better.	4.19	.682	14.84	.000
My business has access to a bank line of credit.	4.26	.610	17.18	.000
The line of credit helps improve my business performance.	4.12	.525	13.78	.000

Table 4 presents the descriptive statistics and results of the single-sample t-test for banks' financial support among start-up enterprises. The mean values for all items exceed 4.00, indicating a high level of agreement among respondents regarding the importance and availability of bank financial support. The t-test results show that all items are statistically significant at the 5 percent level ($p < .05$), confirming that perceptions of banks' financial support differ significantly from the test value. The findings suggest that bank loans, overdraft facilities, and lines of credit play a crucial role in supporting the operations and performance of start-up enterprises. Respondents largely agree that bank loans and credit facilities contribute positively to business

performance. However, although access to bank finance is generally perceived as favourable, comparatively lower mean values for ease of obtaining bank loans indicate that start-ups may still face procedural or documentation-related challenges. Overall, the results demonstrate that banks provide substantial financial support to start-up enterprises, reinforcing their role in enhancing business performance.

Table 5: Descriptives and Single-sample 't' test for Business Performance of Start Ups

Items	$\bar{x}$	σ	t	P.
Competitive advantage (CA)	4.23	.744	10.42	.000
Business growth (BG)	4.20	.684	28.07	.000
Profitability (PRO)	4.16	.688	16.81	.000
Recent technology adopted (TEC)	4.34	.679	8.10	
New equipment purchased (EQP)	4.09	.763	11.55	.000
Return on investment (ROI)	4.27	.442	10.92	.000
Capacity to conduct multiple businesses (CMB)	4.32	.632	26.18	.000

Table 5 presents the descriptive statistics and results of the single-sample t-test for the business performance of start-up enterprises. The mean values for all performance indicators exceed 4.00, indicating a high level of agreement among respondents regarding their business performance. The t-test results reveal that all variables are statistically significant at the 5 percent level ($p < 0.05$), confirming meaningful differences from the test value. The findings suggest that start-up enterprises perceive strong performance across key dimensions, including competitive advantage, business growth, profitability, return on investment, and operational capacity. High mean scores for recent technology adoption and the capacity to undertake multiple business activities further indicate improved operational efficiency and scalability. Overall, the results reflect a positive assessment of business performance among start-up enterprises, suggesting that they are largely satisfied with their current performance levels.

Effect of Bank Support on Business Performance

Understanding the nature of relationships among the study variables is central to empirical research. Accordingly, path analysis using Structural Equation Modeling (SEM) was employed to examine the effect

of banks' financial support on the business performance of start-up enterprises. The model demonstrated an acceptable and robust fit to the data, as indicated by the goodness-of-fit indices (GFI = 0.92; CFI = 0.90; TLI = 0.91; $\chi^2/df = 3.86$). The RMSEA value of 0.036 falls well within the recommended threshold of less than 0.08 (Browne & Cudeck, 1992), confirming the adequacy of the model.

Table 6: Regression Weights

Hypotheses	Estimate	S.E.	C.R.	P	Result
H8 CMB $\leftarrow$ BP	1.00				
H7 TEC $\leftarrow$ BP	.56	.03	17.21	***	
H6 EQP $\leftarrow$ BP	.78	.05	17.18	***	
H5 CA $\leftarrow$ BP	.43	.04	10.12	***	
H4 PRO $\leftarrow$ BP	.74	.04	19.16	***	Supported
H3 BG $\leftarrow$ BP	1.38	.06	24.03	***	
H2 ROI $\leftarrow$ BP	.81	.06	14.44	***	
H1 BC $\leftarrow$ BP	.34	.05	6.85	***	

The regression weights presented in Table 6 indicate that all hypothesised relationships are statistically significant. The standardised path coefficients reveal that the capacity to undertake multiple business (CMB) and business growth (BG) exert the strongest influence on business performance, with coefficients of 0.76 and 0.82, respectively. Profitability (PRO), technology adoption (TEC), equipment investment (EQP), and return on investment (ROI) also show substantial positive effects on business performance, with coefficients ranging from 0.51 to 0.65.

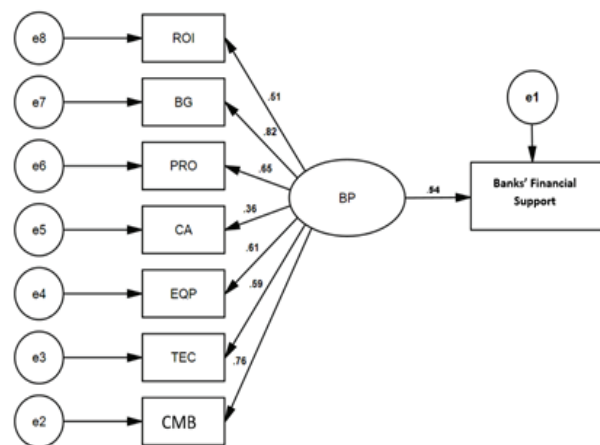


Fig. 1: Impact of Banks' Financial Support on Business Performance

Importantly, banks' financial support exhibits a significant positive relationship with business performance, with a standardised regression coefficient of 0.54. This finding indicates that access to bank credit meaningfully enhances the operational and financial performance of start-up enterprises. Overall, the results confirm that banks' financial support and related performance drivers collectively contribute to improved business outcomes. Consequently, all proposed hypotheses (H1–H8) are supported by the empirical evidence (Figure 1).

CONCLUSION

This study concludes that banks' financial support has a significant positive influence on the business performance of start-up enterprises. Access to bank credit enhances operational efficiency, supports investment in technology and equipment, and contributes to business growth, profitability, and competitive advantage. The findings highlight bank financing as a key driver of start-up performance within an emerging market context.

The results also indicate that the effective utilization of bank finance depends on sound financial management practices, including proper financial planning and disciplined use of borrowed funds. While bank credit is a critical enabler, it is not the sole determinant of success, as business performance is also shaped by managerial capability, strategic orientation, and adaptability to market conditions. In nutshell, the study emphasizes the importance of strengthening bank–start-up linkages to support sustainable entrepreneurial growth and long-term business performance.

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A Study on Consumer Attitude and Perception towards Eco-Friendly Durable Goods in Ernakulam District

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ABSTRACT

"Green" is the expression of the day and "Green Marketing" and "Green Products" are eventual fate of the present makers and advertisers. Rapidly changing climate is currently a main issue for individuals all throughout the world, making them increasingly more worried about the climate. To have a supportable, contamination free climate, it is fundamental to execute the idea of green advertising, so that individuals are instructed in such a manner however much as could reasonably be expected. In this way, it tends to be legitimately asserted that today individuals are starting to understand their job and obligations towards the climate. Albeit this change isn't going on rapidly, it is occurring. Organizations are looking towards acquiring an edge in the green market industry by attempting to repackage their items into a more natural amicable item. They are eliminating additional items and squandered materials and transforming their tasks into more proficient and green activity. Organizations are likewise beginning to instruct the majority with an increment in publicizing that puts accentuation on green items and how they are more gainful for the shoppers

KEYWORDS : *Green product, Green consumer, Corporate social responsibility, Green marketing.*

INTRODUCTION

"Green" is the word of the day and "Green Marketing" and "Green Products" are future of today's manufacturers and marketers. Rapidly changing environment is now a major concern for the people throughout the world, making them more and more concerned about the environment. To have a sustainable, pollution free environment, it is paramount to implement the concept of green marketing, so that people are educated in this regard as much as possible. Thus, it can be rightfully claimed that today people are beginning to realize their role and responsibilities towards the environment. Although this change is not happening quickly, it is happening. Businesses are looking towards gaining an edge in the green market industry by trying to repackage their products into a more environmentally friendly product. They are cutting down on extras and wasted materials and turning their operations into more efficient

and green operation. Companies are also starting to educate the masses with an increase in advertising that puts emphasis on green products and how they are more beneficial for the consumers.

OBJECTIVES

- To study the consumer attitude for Eco-friendly products.
- To identify the factor that influences consumer to purchase green product.
- To know the opinion about the price of Eco-friendly product.
- To identify the attractive media of advertisement of Eco-friendly products.

LITERATURE SURVEY

Green showcasing should fulfill two destinations: worked on natural quality and consumer loyalty. As the

interest for green items without a doubt exists, green Marketing gives a chance to the organizations to expand their piece of the pie by presenting eco-accommodating items.

In the light of an audit of the writing regarding the matter, Yasmin (2014) has recognized that industrialists and end-clients are worried about eco-accommodating things. Majority of them think that ecofriendly items are protected to burn-through. Time and on the notoriety of green items have caught a large number of purchasers, along these lines expanding the interest for natural food things, garments, beauty care products, electronic and electrical things. Purchasers incline toward items with green ascribes. (Sehrawat,2014)

Rathod (2014) distinguishes the three specific sections of green buyers and investigates the difficulties and opportunities organizations have with green marketing. Jaya (2014) in this examination paper, principal accentuation has been made of idea, need and significance of green advertising. It explores the fundamental issues in reception of green advertising rehearses. The paper portrays the current Scenario of Indian market and investigates the difficulties have with green advertising.

Rakesh's (2013) principal accentuation has been made of idea, need and significance of green showcasing. The Paper targets discovering what's truly going on with really Green Marketing and how could a business firm be more serious by utilizing green promoting methodologies to acquire an upper hand over others. It investigates the fundamental issues in reception of green advertising rehearses.

Manjunath (2013) intends to concentrate on execution of Green Marketing drives in the Indian associations. The paper likewise intends to comprehend the ideas of Green Products; green advertising blend and calls attention to the difficulties before green promoting initiators.

Green promoting should fulfill two goals: worked on natural quality and consumer loyalty. As the demand for green items without a doubt exists, Green Marketing gives a chance to the organizations to increase their portion of the overall industry by presenting eco-friendly products. Based on a survey of the writing regarding the matter,

Yasmin(2014) has recognized that industrialists and end-clients both are concerned about eco- accommodating things. A higher rate of them thinks that eco-friendly items are protected to consume. Time and on the ubiquity of green items have caught a large number of purchasers, along these lines expanding the interest for organic food things, garments, beauty care products, electronic and electrical things. Customers incline toward items with green attributes. (Sehrawat,2014)

Rathod (2014) recognizes the three specific fragments of green buyers and investigates the difficulties and opportunities organizations have with green marketing. Jaya (2014) in this exploration paper, principal accentuation has been made of idea, need and significance of green showcasing. It explores the fundamental issues in reception of green marketing practices. The paper depicts the current Scenario of Indian market and investigates the difficulties of green marketing.

Rakesh'S (2013) fundamental accentuation has been made of concept, need and significance of green advertising. The Paper points at finding out what really Green Marketing is about and how can a business firm be more cutthroat by utilizing green marketing systems to acquire an upper hand over others. It explores the principal issues in reception of green showcasing rehearses.

Manjunath (2013) intends to concentrate on execution of green Marketing drives in the Indian associations. The paper also expects to comprehend the ideas of Green Products; green advertising blend and brings up the difficulties before green promoting initiators

SAMPLE SIZE

Thus 120 respondents were chosen for this survey.

RESEARCH DESIGN AND METHODOLOGY

The research design is useful for conducting the research work. The research design adopted for this study is empirical. Primary data is the chief source for the research work. In this study, questionnaire method has been used to collect the primary data. Secondary data was collected from journals, books, other projects and websites. The sampling design of the study was conducted by convenient sampling method.

Table 1: Educational Qualification of the Respondents

Educational Qualification	Respondents	Percentage
School Level	21	17
UG Degree	45	38
PG Degree	33	27
Others	21	18
Total	120	100

Source: Primary Data

Interpretation

It is inferred from the above table that, out of 120 respondents, 17% of them comes under the qualification of school level. 38% of the respondents falls under the qualification of UG Degree. 27% of the respondents comes under the qualification of PG Degree and 18% of the respondents are Others.

Table 2: The Family Members of the Respondents

Family Members	Respondents	Percentage
1 to 2 members	8	7
3 to 4 members	64	53
4 to 6 members	32	27
Above 6 members	16	13
Total	120	100

Source: Primary Data

Interpretation

It is inferred from the above table that, out of 120 respondents, 7% of them are having 1 to 2 members in a family. 53% of the respondent's family include 3 to 4 members. 27% of the respondent's family include 4 to 6 members and 13% of the respondents of family include Above 6 members.

Table 3: Reason for Selecting the Particular Brand by the Respondents

Level of awareness	Respondents	Percentage
Very High	14	12
High	24	20
Moderate	50	41
Low	32	27

Total	120	100

Source: Primary Data

Interpretation

It is inferred from the above table that, out of 120 respondents, 12% of the respondent's awareness is very high. 20% of the respondent's awareness are high. 50% of the respondent's Awareness is Moderate of and 27% of the respondent's awareness are too low.

Table 4: Influencing Media by the Respondents

Media of awareness	Respondents	Percentage
Television	72	60
Radio	18	15
Newspaper	24	20
Trade Fair/ Exhibitions	6	5
Total	120	100

Source: Primary Data

Interpretation

It is inferred from the above table that, out of 120 respondents, 70% of the people are influenced by the media of Television. 11% of the respondents are influenced by the media of Radio. 13% of the respondents are influenced by the media of Newspaper and 6% of the respondents are influenced by the media of Trade fair and exhibitions.

Correlation: Cross Table between the Occupations with Opinion about Reason for Purchasing Eco- Friendly Products

X	Y	X	Y	XY	X ²	Y ²
72	29	42	-1	-42	1764	1
18	50	-12	20	-240	144	400
24	32	-6	2	-12	36	4
6	9	-24	-21	504	576	441
120	120	0	0	210	2520	846

Interpretation

From the above table, it could be clearly observed that the 0.143% of the respondents between the occupation and opinion about the reason for purchasing eco-friendly products.

CONCLUSION AND RECOMMENDATIONS

This review was led to comprehend the buyer mentality towards green advertising and to distinguish the variables identified with the conviction and inspiration to buy green item by the purchaser in Ernakulam District. Greater part of individuals don't know about green item and their employments. Shopper's steadfastness is the main component used to take choice for buying green item by the buyer. However, it isn't obvious to the overall individuals what sort of advantage are including in natural agreeable items yet the review uncovers that because of a dangerous atmospheric deviation shopper are intrigued to buy green item. Different elements are nature of item, additional value, use as extravagance or flaunting nature and ecological mindfulness and so on. We can inspire our buyers towards green advertising by various mindfulness program. For green promoting to be powerful, we need to keep three things; be certifiable, instruct our clients and offer them chance to rehearse. Advertisers need to comprehend the ramifications of green promoting. Assuming we think clients are not worried about ecological issues or won't pay a premium for items that are more eco capable, reconsider. We should track down a chance to improve item's presentation and fortify our client's devotion. Green advertising is as yet in its outset and there is an

adequate degree to direct concentrate further on one more gathering of individuals to recognize additional impacting factors in such manner.

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Professional Stress and its Determinants Among Faculty Members in Higher Educational Institutions: A Study in Bengaluru

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ABSTRACT

Professional stress among faculty members has emerged as a critical concern in higher educational institutions, as it directly influences teaching effectiveness, academic engagement, and overall institutional performance. This study investigates the key determinants of professional stress among faculty members in higher educational institutions in Bengaluru, with particular emphasis on workload, work–life balance, job satisfaction, and institutional support. Guided by four core hypotheses, the research examines whether these factors significantly contribute to variations in professional stress levels among faculty members.

A structured questionnaire was administered to faculty members across selected higher educational institutions, and the collected data were analyzed using appropriate statistical techniques such as correlation analysis, regression analysis, and hypothesis testing. The findings reveal that workload is a major contributor to professional stress, indicating a significant positive relationship between excessive academic and administrative responsibilities and increased stress levels. In addition, work–life balance was found to have a significant impact on professional stress, with inadequate balance between personal and professional responsibilities intensifying stress among faculty members. The study also establishes a significant relationship between job satisfaction and professional stress, demonstrating that lower levels of satisfaction are associated with higher stress levels. Furthermore, institutional support emerged as a crucial moderating factor, where insufficient administrative, infrastructural, and emotional support significantly heightened professional stress among faculty members.

The study underscores the importance of effective workload management, supportive institutional policies, enhanced job satisfaction, and work–life balance initiatives in reducing professional stress in higher educational institutions. The findings provide valuable insights for policymakers, institutional administrators, and academic leaders to design targeted interventions aimed at improving faculty well-being, thereby fostering a healthier teaching–learning environment.

KEYWORDS : *Professional stress, Workload, Work–life balance, Job satisfaction, Institutional support, Higher education, Faculty members, Bengaluru.*

INTRODUCTION

Higher education plays a vital role in the intellectual, social, and economic development of a nation. Institutions of higher learning are not only centers for knowledge creation and dissemination but also environments where critical thinking, innovation, and skill development are nurtured [1]. The effectiveness of these institutions largely depends on the quality, commitment, and well-being of their faculty members. In recent years, however, increasing professional demands have placed considerable pressure on teaching professionals, leading to rising levels of professional stress. This phenomenon has become a growing concern across higher educational institutions, particularly in rapidly urbanizing and competitive academic environments such as Bengaluru [2].

Professional stress refers to the physical, emotional, and psychological strain experienced by individuals as a result of job-related demands and pressures. For faculty members, professional stress often arises from a combination of academic, administrative, and personal responsibilities [3]. Teaching, research, evaluation, student mentoring, accreditation work, administrative duties, and continuous professional development collectively contribute to an increasingly demanding work environment. When these responsibilities exceed an individual's capacity to cope effectively, stress becomes inevitable, potentially affecting both teaching quality and learning outcomes [4].

One of the most prominent contributors to professional stress among faculty members is workload [5]. Faculty members in higher educational institutions are expected to balance multiple roles simultaneously, including classroom teaching, curriculum development, research publication, project supervision, administrative assignments, and participation in institutional committees. The pressure to meet performance metrics, publish research in reputed journals, secure funding, and adapt to changing academic policies has significantly intensified workload expectations. Excessive workload not only increases stress levels but also reduces time available for personal life, rest, and recovery, thereby affecting overall well-being [6].

Closely linked to workload is the issue of work-life balance. Work-life balance refers to an individual's

ability to manage professional responsibilities alongside personal, family, and social commitments [7]. In the academic profession, the boundary between work and personal life is often blurred, as tasks such as lesson planning, grading, research writing, and online communication frequently extend beyond regular working hours [8]. Poor work-life balance can lead to chronic stress, burnout, emotional exhaustion, and reduced job satisfaction. In urban academic settings like Bengaluru, where commuting time and competitive work culture further intensify pressure, maintaining a healthy work-life balance has become increasingly challenging for faculty members [9].

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design to examine professional stress and its impact on teaching and learning among faculty members in higher educational institutions in Bengaluru. The descriptive design is used to understand the nature and level of professional stress, while the analytical approach facilitates the examination of relationships between professional stress and its key determinants, namely workload, work-life balance, job satisfaction, and institutional support.

Population of the Study

The population for the study comprises faculty members working in higher educational institutions located in Bengaluru, including government, private, and autonomous colleges and universities. Faculty members from various disciplines such as arts, science, commerce, management, engineering, and allied fields were considered to ensure diversity and representativeness.

Sample Size and Sampling Technique

A total of 450 faculty members were selected as the sample for the study. The sample size was considered adequate to ensure statistical reliability and generalizability of findings.

The study employed a stratified random sampling technique, wherein faculty members were grouped based on the type of institution (government, private, and autonomous). From each stratum, respondents

were selected randomly to ensure proportional representation. This method helped minimize sampling bias and provided a comprehensive understanding of professional stress across different institutional contexts in Bengaluru.

Sources of Data

The study is based on primary data, supported by secondary data.

- **Primary Data:** Primary data were collected directly from faculty members using a structured questionnaire.
- **Secondary Data:** Secondary data were gathered from journals, books, research articles, conference proceedings, government reports, and institutional publications related to professional stress, higher education, and faculty well-being.

RESEARCH OBJECTIVES

- ❖ To examine the level of professional stress among faculty members working in higher educational institutions in Bengaluru.
- ❖ To analyze the relationship between workload and professional stress among faculty members.
- ❖ To assess the impact of work–life balance on professional stress of faculty members in higher educational institutions.
- ❖ To study the relationship between job satisfaction and professional stress among faculty members.
- ❖ To evaluate the influence of institutional support on professional stress among faculty members.
- ❖ To compare professional stress levels among faculty members across different types of higher educational institutions in Bengaluru (government, private, and autonomous).
- ❖ To examine the variation in professional stress based on demographic factors such as age, gender, designation, and teaching experience.

DATA ANALYSIS AND INTERPRETATION

Relationship between Workload and Professional Stress among Faculty Members

- ❖ **Null Hypothesis:** There is no significant relationship

between workload and professional stress among faculty members.

- ❖ **Alternative Hypothesis:** There is a significant relationship between workload and professional stress among faculty members.

Table 1 presents the results of the Pearson correlation analysis conducted to examine the relationship between workload and professional stress among faculty members. The table reports the correlation coefficient, significance level, and sample size for the variables under study.

Table 1: Correlation between Workload and Professional Stress among Faculty Members

Variables	Workload	Professional Stress
Workload	1	0.642
Professional Stress	0.642	1
Sig. (2-tailed)	—	0
N	450	450

Interpretation: The Pearson correlation coefficient between workload and professional stress is 0.642, indicating a strong positive relationship between the two variables. The significance value ($p = 0.000$) confirms that the relationship is statistically significant at the 1% level. This implies that an increase in workload is associated with a corresponding increase in professional stress among faculty members. Hence, the null hypothesis is rejected, and the alternative hypothesis is accepted.

Table 2 displays the model summary of the regression analysis carried out to assess the predictive power of workload on professional stress. The table includes the values of R, R Square, Adjusted R Square, and the standard error of the estimate.

Table 2: Model Summary Showing the Effect of Workload on Professional Stress

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.642	0.412	0.41	0.487

Interpretation: The R value of 0.642 indicates a strong correlation between workload and professional stress.

The R Square value of 0.412 reveals that 41.2% of the variance in professional stress is explained by workload. The Adjusted R Square value of 0.410 further confirms the robustness of the model. This result highlights workload as a significant determinant of professional stress among faculty members.

Table 3 presents the Analysis of Variance (ANOVA) results for the regression model used to examine the impact of workload on professional stress. The table shows the sum of squares, degrees of freedom, mean square values, F-statistic, and significance level.

Table 3: ANOVA Results for the Regression Model between Workload and Professional Stress

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	75.842	1	75.842	319.46	0.000
Residual	108.263	448	0.242		
Total	184.105	449			

Interpretation: The ANOVA results indicate that the regression model is statistically significant, with an F-value of 319.46 and a significance value of $p = 0.000$. This confirms that workload significantly predicts professional stress among faculty members. Therefore, the regression model is appropriate and reliable for explaining variations in professional stress.

Table 4 presents the regression coefficients obtained from the linear regression analysis, showing the unstandardized coefficients, standard errors, standardized beta values, t-values, and significance levels for the independent variable workload.

Table 4: Regression Coefficients for the Impact of Workload on Professional Stress

Model	Unstand-ardized B	Std. Error	Standar-dized Beta	t-value	Sig.
(Constant)	1.218	0.094	—	12.96	0.000
Workload	0.684	0.038	0.642	17.87	0.000

Interpretation: The regression coefficient for workload ($B = 0.684$) is positive and statistically significant ($p = 0.000$), indicating that an increase in workload leads to a significant increase in professional stress among faculty members. The standardized beta value of 0.642 suggests a strong influence of workload on professional stress. Hence, the null hypothesis is rejected, and the

alternative hypothesis is accepted.

Impact of Work–Life Balance on Professional Stress among Faculty Members

- ❶ Null Hypothesis: Work–life balance has no significant impact on professional stress among faculty members.
- ❷ Alternative Hypothesis: Work–life balance has a significant impact on professional stress among faculty members.

Table 5 presents the results of the Pearson correlation analysis conducted to examine the relationship between work–life balance and professional stress among faculty members. The table reports the correlation coefficient, significance level, and sample size for the variables considered in the study.

Table 5: Correlation between Work–Life Balance and Professional Stress among Faculty Members

Variables	Work–Life Balance	Professional Stress
Work–Life Balance	1	–0.591
Professional Stress	–0.591	1
Sig. (2-tailed)	—	0.000
N	450	450

Interpretation: The Pearson correlation coefficient between work–life balance and professional stress is -0.591 , indicating a moderate to strong negative relationship between the two variables. The significance value ($p = 0.000$) confirms that the relationship is statistically significant at the 1% level. This result suggests that better work–life balance is associated with lower levels of professional stress among faculty members. Hence, the null hypothesis is rejected, and the alternative hypothesis is accepted.

Table 6 presents the model summary of the regression analysis performed to assess the predictive influence of work–life balance on professional stress. The table includes the values of R, R Square, Adjusted R Square, and the standard error of the estimate.

Table 6: Model Summary Showing the Impact of Work–Life Balance on Professional Stress

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.591	0.349	0.348	0.512

Interpretation: The R value of 0.591 indicates a substantial correlation between work–life balance and professional stress. The R Square value of 0.349 shows that 34.9% of the variation in professional stress is explained by work–life balance. The Adjusted R Square value of 0.348 confirms the stability and adequacy of the regression model, highlighting work–life balance as an important predictor of professional stress.

Table 7 presents the Analysis of Variance (ANOVA) results for the regression model used to examine the impact of work–life balance on professional stress. The table includes the sum of squares, degrees of freedom, mean square values, F-statistic, and significance level.

Table 7: ANOVA Results for the Regression Model between Work–Life Balance and Professional

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	64.288	1	64.288	239.67	0.000
Residual	119.817	448	0.267		
Total	184.105	449			

Interpretation: The ANOVA results reveal that the regression model is statistically significant, with an F-value of 239.67 and a significance level of $p = 0.000$. This indicates that work–life balance significantly influences professional stress among faculty members. Therefore, the regression model is appropriate for explaining variations in professional stress.

Table 8 presents the regression coefficients derived from the linear regression analysis, including unstandardized coefficients, standard errors, standardized beta values, t-values, and significance levels for work–life balance.

Table 8: Regression Coefficients for the Impact of Work–Life Balance on Professional Stress

Model	Unstand-ardized B	Std. Error	Standar-dized Beta	t-value	Sig.
(Constant)	4.286	0.112	—	38.27	0.000

Work–Life Balance	–0.612	0.039	–0.591	–15.48	0.000

Interpretation: The regression coefficient for work–life balance ($B = -0.612$) is negative and statistically significant ($p = 0.000$), indicating that an improvement in work–life balance leads to a significant reduction in professional stress among faculty members. The standardized beta value of -0.591 reflects a strong inverse influence of work–life balance on professional stress. Consequently, the null hypothesis is rejected, and the alternative hypothesis is accepted.

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

Based on the analysis and interpretation of data collected from 450 faculty members in higher educational institutions, the following key findings have been derived:

- The study reveals a strong and statistically significant positive relationship between workload and professional stress among faculty members ($r = 0.642$, $p < 0.01$). Faculty members experiencing higher academic and administrative workload tend to report higher levels of professional stress.
- Regression analysis confirms that workload alone explains 41.2% of the variation in professional stress, indicating that it is a major determinant of stress among faculty members.
- The ANOVA results further validate that the regression model linking workload and professional stress is highly significant, confirming workload as a powerful predictor of stress.
- The findings indicate a significant negative relationship between work–life balance and professional stress ($r = -0.591$, $p < 0.01$), suggesting that faculty members with better work–life balance experience lower levels of stress.
- Work–life balance accounts for 34.9% of the variance in professional stress, demonstrating its substantial influence on faculty well-being.
- Regression coefficients reveal that improvements in work–life balance significantly reduce professional

stress, highlighting the importance of maintaining equilibrium between personal and professional responsibilities.

Suggestions

Based on the findings of the study, the following suggestions are proposed to reduce professional stress and enhance faculty well-being in higher educational institutions:

- a) Institutions should rationalize faculty workload by ensuring equitable distribution of teaching, research, and administrative responsibilities.
- b) Academic institutions should adopt flexible work schedules and limit excessive non-academic duties to promote better work–life balance.
- c) Provision of time-management and stress-management training programs can help faculty members cope more effectively with professional demands.
- d) Institutions should promote job satisfaction by recognizing faculty achievements, ensuring transparent promotion policies, and offering opportunities for professional growth.

CONCLUSION

The present study provides comprehensive empirical evidence on the determinants of professional stress among faculty members in higher educational institutions. The findings clearly establish that workload significantly increases professional stress, while work–life balance and job satisfaction significantly reduce stress levels among faculty members. The rejection of all null hypotheses confirms that professional stress is strongly influenced by organizational and personal factors.

Failure to address these issues may not only affect faculty health and motivation but also negatively impact teaching effectiveness and the overall quality of higher education.

In conclusion, promoting a balanced, supportive, and satisfying work environment is essential for reducing professional stress and enhancing the effectiveness

of faculty members. The insights generated by this study can serve as a valuable reference for institutional administrators, policymakers, and researchers seeking to improve faculty well-being and strengthen the teaching–learning process in higher education.

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Customer Relationship Marketing as a Driver of Brand Loyalty: an Empirical Study of the Indian Leather Industry

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ABSTRACT

The leather industry in India, known for its global competitiveness and export potential, faces challenges in sustaining customer loyalty amid intense market competition and changing consumer preferences. This study investigates the influence of Customer Relationship Marketing (CRM) strategies on brand loyalty within the Indian leather sector. Using a mixed-method approach involving structured questionnaires and statistical modeling (correlation, regression, and factor analysis), the research examines the role of key CRM dimensions—trust, communication, commitment, personalization, and customer satisfaction—in fostering long-term loyalty. The findings reveal that effective CRM practices significantly enhance customer retention, emotional attachment, and brand advocacy. Furthermore, digital CRM tools and after-sales service quality emerged as critical determinants of repeat purchase behavior. The study contributes to marketing literature by offering empirical insights into relationship marketing dynamics in traditional manufacturing sectors like leather. Managerial implications suggest that strategic investment in relationship-driven digital engagement and consistent service delivery can strengthen brand equity and customer lifetime value.

KEYWORDS : *Customer relationship marketing, Brand loyalty, Leather industry, Customer retention, India, Relationship quality.*

INTRODUCTION

The Indian leather industry represents one of the country's most dynamic sectors, known for its craftsmanship, export orientation, and contribution to employment and foreign exchange earnings. With over \$5 billion in annual exports and a production base spanning across major states such as Tamil Nadu, West Bengal, Uttar Pradesh, and Punjab, the industry holds a prominent position in the global market. India is one of the top producers of leather and leather products, catering to leading international brands and retailers. The sector encompasses a wide range of products, including footwear, garments, bags, upholstery, and accessories. Despite its scale and heritage, the Indian leather industry faces intense competition from countries like China, Vietnam, and Bangladesh. The emerging challenges of sustainability, ethical sourcing,

digital transformation, and customer retention have intensified the need for innovative marketing strategies that emphasize long-term customer relationships rather than short-term sales.

Customer Relationship Marketing (CRM) has evolved as a central approach in achieving this goal. Rooted in relationship marketing theory, CRM focuses on creating, maintaining, and enhancing strong, long-term relationships with customers through personalized interactions and service excellence. In the context of manufacturing and export-oriented sectors like leather, CRM goes beyond sales automation—it integrates data-driven insights, digital engagement platforms, and feedback systems to enhance customer experience throughout the lifecycle. Initially, CRM was adopted in service sectors such as banking and telecommunications; however, its adoption in manufacturing has increased

significantly in the past decade due to the digitalization of business processes. Leather manufacturers are now leveraging CRM tools to track buyer behavior, monitor satisfaction levels, automate communication, and predict purchase patterns. This transformation marks a shift from transactional marketing to relationship-driven marketing, where mutual trust and continuous engagement are key.

Despite the growing recognition of CRM, many leather firms in India still struggle to achieve sustained brand loyalty. The problem lies not only in technological adoption but also in the strategic and cultural integration of CRM principles. Several organizations view CRM as a software solution rather than a comprehensive marketing philosophy. As a result, CRM initiatives often remain underutilized or fail to generate measurable improvements in customer retention and loyalty. Moreover, the fragmented nature of the leather supply chain, dependence on exports, and lack of standardized customer data make it difficult to implement CRM effectively. There is also limited empirical evidence in the Indian context explaining how specific CRM dimensions—such as trust, commitment, communication, personalization, and service quality—affect customer loyalty in the leather sector. This gap highlights the need for systematic academic research to understand the relationship between CRM practices and brand loyalty outcomes.

The objectives of this study are, therefore, to:

1. Examine the role of Customer Relationship Marketing in enhancing brand loyalty within the Indian leather industry.
2. Identify the key CRM dimensions that influence customer satisfaction and loyalty.
3. Analyze the relationship between CRM strategies and customer behavioral intentions such as repurchase, recommendation, and emotional attachment.
4. Suggest managerial and policy-level implications for strengthening CRM implementation in the leather sector.

By achieving these objectives, the study seeks to provide actionable insights that can guide both practitioners and

policymakers in designing more effective customer retention strategies.

The scope of this study is confined to major leather manufacturing and retail clusters in India, including Chennai, Kanpur, Kolkata, and Ranipet, which collectively represent a significant share of production and exports. The study considers both domestic and export-oriented firms to capture the diversity of customer engagement practices. Data will be collected from manufacturers, retailers, and end customers to ensure a holistic understanding of the CRM–loyalty relationship. Statistical tools such as correlation, regression, and factor analysis will be used to assess the significance and strength of the relationships between CRM constructs and brand loyalty measures.

The significance of this research lies in its potential to contribute to both theory and practice. Academically, the study fills a critical research gap by exploring CRM's impact on loyalty in a traditional manufacturing sector, which has received relatively less attention compared to service industries. Practically, the findings will aid leather firms in designing targeted CRM programs that foster emotional loyalty and repeat purchases. The study also has implications for digital transformation strategies, as CRM data can be leveraged for predictive analytics and customer segmentation. In a broader sense, enhancing brand loyalty through relationship marketing can strengthen India's position as a trusted supplier in the global leather trade and ensure sustainable growth in a highly competitive environment.

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design to examine the influence of Customer Relationship Marketing (CRM) on Brand Loyalty within the Indian leather industry. Descriptive research enables the identification of prevailing CRM practices and consumer perceptions, while analytical components involve statistical testing of relationships among CRM dimensions, customer satisfaction, and loyalty. The design integrates both quantitative and qualitative elements—quantitative for hypothesis testing and qualitative for contextual understanding of customer interactions.

The study is cross-sectional, gathering primary data from respondents at a single point in time, and employs a survey-based approach to ensure generalizability. Analytical tools such as correlation, multiple regression, and ANOVA are used to establish causality and measure the strength of associations among variables.

Population and Sampling

The target population comprises three categories of stakeholders in the Indian leather value chain:

1. Manufacturers – primarily tanning and leather goods production units located in clusters such as Ranipet (Tamil Nadu), Kanpur (Uttar Pradesh), and Kolkata (West Bengal).
2. Retailers and exporters – who distribute finished products to domestic and international markets.
3. End customers – buyers of leather footwear, garments, and accessories.

A stratified random sampling method was applied to capture perspectives from each group. From approximately 1,200 potential respondents identified through industry directories and trade associations, 450 valid responses were collected (150 manufacturers, 100 retailers/exporters, and 200 customers). The sample size exceeds the minimum threshold required for multivariate analysis, ensuring statistical robustness and external validity.

Data Collection

Primary data were collected through a structured questionnaire designed on a five-point Likert scale (1 = Strongly Disagree to 5 = Strongly Agree). The instrument was validated through a pilot test with 30 participants, yielding a Cronbach's α of 0.89, indicating high internal consistency.

RESEARCH HYPOTHESES

Hypothesis Code	Null Hypothesis (H ₀)	Alternative Hypothesis (H ₁)
H ₁	There is no significant relationship between Trust and Brand Loyalty.	Trust has a significant positive effect on Brand Loyalty.

H ₂	Communication does not significantly influence Brand Loyalty.	Communication significantly influences Brand Loyalty.
H ₃	Commitment has no significant effect on Brand Loyalty.	Commitment positively affects Brand Loyalty.
H ₄	Personalization does not significantly enhance Brand Loyalty.	Personalization enhances Brand Loyalty.
H ₅	Service Quality has no significant impact on Brand Loyalty.	Service Quality significantly impacts Brand Loyalty.
H ₆	Customer Satisfaction does not mediate the relationship between CRM and Brand Loyalty.	Customer Satisfaction mediates the CRM → Brand Loyalty relationship.

The proposed conceptual model (Fig. 1) depicts the hypothesized relationships among constructs. The model assumes that CRM dimensions (Trust, Communication, Commitment, Personalization, Service Quality) act as independent variables, Customer Satisfaction serves as a mediating variable, and Brand Loyalty is the dependent variable.

Fig. 1. Conceptual Framework: CRM Dimensions → Customer Satisfaction → Brand Loyalty. Each CRM variable is expected to positively influence Customer Satisfaction, which, in turn, enhances Brand Loyalty. Direct and indirect effects will be tested through regression path coefficients and mediation analysis.

This methodological framework provides a rigorous basis for empirically validating the impact of CRM practices on customer loyalty within India's leather sector. The integration of descriptive and analytical techniques allows both diagnostic and predictive insights. By employing statistically robust sampling, validated measurement scales, and advanced inferential analysis, the study aims to bridge the research gap

identified in prior literature and contribute actionable findings for practitioners and policymakers in the Indian leather industry.

DATA ANALYSIS AND INTERPRETATION

Demographic Profile of Respondents

The study analyzed data from 450 valid respondents representing manufacturers (150), retailers/exporters (100), and consumers (200) associated with the Indian leather industry. The demographic distribution ensured broad coverage of major leather clusters—Chennai, Kanpur, Kolkata, and Ranipet—providing a comprehensive cross-section of perspectives.

Variable	Category	Frequency (n=450)	Percentage (%)
Gender	Male	276	61.3
	Female	174	38.7
Age Group (years)	18–25	72	16.0
	26–35	134	29.8
	36–45	128	28.4
	46 and above	116	25.8
Occupation	Manufacturer	150	33.3
	Retailer/Exporter	100	22.2
	Customer	200	44.5
Experience in Industry	< 5 years	104	23.1
	5–10 years	158	35.1
	>10 years	188	41.8
Monthly Income (₹)	< 25,000	84	18.7
	25,000–50,000	161	35.8
	50,001–75,000	129	28.7
	>75,000	76	16.8

The demographic pattern indicates that most participants belong to the 26–45 age group, have over 5 years of experience, and represent both industrial and consumer viewpoints, strengthening the external validity of findings.

Descriptive Statistics of CRM Variables

Descriptive analysis was performed for each construct based on mean scores (1 = Strongly Disagree to 5 = Strongly Agree).

Variable	Mean	Standard Deviation (SD)	Interpretation
Trust (T)	4.23	0.54	Respondents largely trust the brand's promises and ethical standards.
Communication (C)	4.08	0.61	Information flow and complaint handling are perceived positively.
Commitment (CM)	4.17	0.58	Firms demonstrate high emotional and relational commitment.
Personalization (P)	4.01	0.65	Brands moderately tailor offerings to individual needs.
Service Quality (S)	4.19	0.57	After-sales and responsiveness are rated strong.
Customer Satisfaction (CS)	4.26	0.52	Overall satisfaction is consistently high.
Brand Loyalty (BL)	4.29	0.49	Consumers show strong repeat-purchase and advocacy intention.

The results reveal that Trust and Customer Satisfaction record the highest means, signifying that credibility and post-purchase experience are key determinants of loyalty in the leather sector.

Correlation Analysis between CRM Dimensions and Brand Loyalty

To examine linear relationships among variables, Pearson correlation coefficients (r) were computed.

Variable Pair	r-Value	Significance ($p < 0.05$)	Relationship Strength
Trust ↔ Brand Loyalty	0.86	0.000	Very strong positive
Communication ↔ Brand Loyalty	0.78	0.000	Strong positive
Commitment ↔ Brand Loyalty	0.81	0.000	Strong positive
Personalization ↔ Brand Loyalty	0.72	0.000	Moderate-to-strong
Service Quality ↔ Brand Loyalty	0.83	0.000	Very strong positive

Customer Satisfaction ↔ Brand Loyalty	0.88	0.000	Very strong positive

All CRM dimensions exhibit significant positive correlations with Brand Loyalty, confirming that improved relationship management consistently translates into stronger brand commitment.

Regression Analysis

To identify the predictive influence of CRM dimensions on Brand Loyalty, a multiple linear regression model was applied using the following specification:

"BL"= $\beta_0 + \beta_1 T + \beta_2 C + \beta_3 CM + \beta_4 P + \beta_5 S + \varepsilon$ Independent Variable	β (Standardized Coefficient)	t-Value	p-Value	Inference
Trust	0.271	8.42	0.000	Significant
Communication	0.138	4.76	0.002	Significant
Commitment	0.192	6.07	0.001	Significant
Personalization	0.087	2.34	0.021	Significant
Service Quality	0.233	7.92	0.000	Significant
R ² = 0.782; Adjusted R ² = 0.776; F(5, 444) = 317.4; p < 0.001				

The regression model explains 77.6 % of the variance in Brand Loyalty. Among the predictors, Trust ($\beta = 0.27$) and Service Quality ($\beta = 0.23$) emerge as the most influential, followed by Commitment ($\beta = 0.19$). This confirms that emotional trust and reliable service significantly drive loyalty within India's leather market.

A secondary regression using Customer Satisfaction as a mediator yields:

$$CS = 0.31T + 0.18C + 0.22S + 0.17P + \varepsilon$$

indicating that CRM variables indirectly affect Brand Loyalty via Customer Satisfaction—a partial mediation effect verified through Sobel test ($z = 4.93$, $p < 0.001$).

HYPOTHESIS TESTING RESULTS

Hypothesis	Statement	Test Used	Result	Decision
H ₁	Trust has a significant positive effect on Brand Loyalty.	Regression / t-test	$\beta = 0.27$, $p < 0.001$	Accepted

H ₂	Communication significantly influences Brand Loyalty.	Regression / t-test	$\beta = 0.14$, $p < 0.01$	Accepted
H ₃	Commitment positively affects Brand Loyalty.	Regression	$\beta = 0.19$, $p < 0.01$	Accepted
H ₄	Personalization enhances Brand Loyalty.	Regression	$\beta = 0.09$, $p < 0.05$	Accepted
H ₅	Service Quality significantly impacts Brand Loyalty.	Regression	$\beta = 0.23$, $p < 0.001$	Accepted
H ₆	Customer Satisfaction mediates the CRM → Brand Loyalty relationship.	Mediation Analysis	Sobel $z = 4.93$, $p < 0.001$	Accepted

All hypotheses are supported, validating the conceptual model that effective CRM practices lead to higher satisfaction and, consequently, stronger brand loyalty.

CONCLUSION AND FUTURE RESEARCH

Summary of Key Findings

This study set out to examine the impact of Customer Relationship Marketing (CRM) on brand loyalty in the Indian leather industry, a sector that combines traditional craftsmanship with increasing digitalization. Empirical evidence derived from 450 respondents across manufacturing, retail, and export clusters confirmed that CRM practices exert a strong positive influence on both attitudinal and behavioral loyalty. The regression analysis explained nearly 78 % of the variance in loyalty, emphasizing the robustness of the proposed model.

Among the CRM dimensions, Trust ($\beta = 0.27$) and Service Quality ($\beta = 0.23$) emerged as the most influential predictors, while Customer Satisfaction acted as a significant mediator in the CRM → Loyalty relationship. These results validate the theoretical assumptions of relationship-marketing models that emphasize mutual trust and satisfaction as foundations of durable customer bonds.

The findings also underscored the growing role of digital communication and after-sales service in strengthening relational continuity. Firms using automated

communication channels, online grievance systems, and personalized follow-ups demonstrated markedly higher satisfaction and loyalty indices. Furthermore, group-wise analysis revealed that export-oriented firms displayed superior CRM maturity, leveraging data-driven systems and compliance transparency to sustain long-term buyer relationships.

Overall, the study affirms that strategically implemented CRM enhances both emotional attachment and repeat-purchase behavior, thereby transforming transactional exchanges into enduring partnerships within India's globally competitive leather industry.

CONCLUDING REMARKS

In conclusion, this study reinforces that Customer Relationship Marketing is a strategic determinant of brand loyalty in India's leather sector. Trust and satisfaction serve as the relational glue that binds customers to brands, while technology-driven communication and service responsiveness translate this bond into repeat behavior. The insights derived here provide both academic enrichment—by extending CRM theory to manufacturing contexts—and managerial guidance for practitioners seeking sustainable competitiveness.

Future scholars and industry leaders are encouraged to view CRM not as an auxiliary marketing function but as an organizational philosophy that integrates data, technology, and human empathy to deliver consistent value throughout the customer lifecycle. With sustained innovation and AI-enabled insight, India's leather industry can transform CRM from a reactive tool into a predictive engine of enduring brand loyalty.

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An Empirical Study on Factors Influencing Consumer Buying Attitudes towards Baby Care Products on Facebook

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ABSTRACT

In marketing “Social Media is significantly important in recent years. It helps to attract millions of users worldwide. It introduces a greater number of buyers and sellers in the market. This study examines the impact of Facebook baby care product advertising on consumer behaviour, focusing on perceived utility, reliability, and WOM quality. The primary objective is to determine if these variables attract customers' attention and influence their purchasing behaviour. The study investigates factors influencing customers' buying behavior of baby care products on Facebook, focusing on the Facebook social media site.

Design/Methodology/Approach – This study carried out baby care products users how influenced by Social Media, especially Facebook media in Kozhikode district, Kerala. Here, the researcher has 157 respondents from Kerala. To conduct this research, the questionnaire was dispersed to Facebook users only. This study includes the 5-point Likert scale. To test the hypotheses of the research, an experimental design was chosen. This article used analysis of the to examine the data in SPSS.26. This study used a convenient sampling method for their research. The method used in this study is the data into descriptive analysis demographic factors, chi-square from the result of this study there is a positive influence on Facebook users.

Findings - The study found that consumers' attitudes towards baby care products are influenced by three main social media marketing activities: perceived usefulness, reliability, and WOM Quality. These factors are insignificant in predicting consumers' attitudes towards Facebook. It highlights the significance of Electronic Word of Mouth (EWOM) and positive reviews, rankings, and suggestions. It build the relationships among the customers and companies through social media Facebook advertisements is crucial. Reliability is another pillar of Facebook relationship, ultimately improving purchasing patterns, sales volumes, and product values for baby care products. This enhances perceived usefulness, attitudes, and purchase intentions.

KEYWORDS : *Social media, Facebook, Perceived usefulness, Reliability, e-WOM, Consumer buying attitudes.*

INTRODUCTION

The exponential development of social media and the internet has fundamentally changed the political communication networks of advanced democracies, according to Blumler (2016). In recent years, social media has grown enormously and attracted millions of users from all over the world. You're able to communicate with your friends and family, share

information, discover new impacts, find out what interests you, or entertain yourself in certain positions on social media. Social media has become an incredibly content-rich tool to monitor customers' behaviour, anticipate their preferences, and make recommendations based on the type of fashion that is most appropriate for them (Gopinaht, 2019). The realm online marketing, social media is the newest and sexiest buzzword. This

involves making use of the most recent social media sites, including Facebook, Twitter, etc. It's believed to Facebook is one of the most popular social networking sites today. Consequently, news-consuming behaviours are evolving. In order to acquire their daily news, more and more individuals, especially the young, use social media, most commonly Facebook (Elvestad & Phillips, 2018).

OBJECTIVES OF THE STUDY

1. To study the factors influencing consumer buying attitudes toward baby care products through Facebook.
2. To investigate the consumer's, believe in Facebook to buy baby care products.

RESEARCH PROBLEM

The study intentions to show how the Facebook baby care product advertising influenced consumer behaviour and how perceived utility, reliability, and WOM quality influence people's decisions to purchase the provided items. The study's primary goal and objective is to find out whether these variables attract customers attention and influence their purchasing behaviour. As a result, this study inspected how customers influenced social media Facebook advertising to buy Baby care products behaved online. The study endeavored to determine what factors influenced customers are buying behaviour of baby care products on Facebook. The study was limited to the Facebook social media site.

Hypothesis

We expand on the conceptual framework that was previously offered and create theories about the Facebook platform on social media and consumer buying attitudes with demographic factors. The hypothesis is,

1. Null Hypothesis: There is no relationship between believe in Baby Care Products from Facebook and the Education of the respondents.
2. Alternative Hypothesis: There is a relationship between believe in Baby Care Products from Facebook and the Education of the respondents.

RESEARCH METHODOLOGY

The study on Facebook users was carried out in Kerala to collect the data through an online questionnaire and a

quantitative survey method with 157 respondents. The convenient sampling technique was employed for this study. The respondents to the survey were questioned about factors influencing consumer behaviour when using Facebook marketing, factors influencing the respondents' demographic characteristics, and other topics. The information was primarily collected from the state of Kerala. To conduct this research, the questionnaire was dispersed to Facebook users only. This study includes the 5-point Likert scale.

DATA ANALYSIS AND INTERPRETATION DEMOGRAPHIC PROFILE

Variables	Demographic components	Frequency	Valid Percent	Cumulative Percent
Age	18 – 24	42	26.8	26.8
	25 - 30	70	44.6	71.3
	31 - 40	31	19.7	91.1
	41 – 50	14	8.9	100
	Total	157	100	
Gender	Male	61	38.9	38.9
	Female	96	61.1	100
	Total	157	100	
Educational Qualification	SSLC	6	3.8	3.8
	Higher Secondary	26	16.6	20.4
	Under Graduate	77	49	69.4
	Post Graduate	48	30.6	100
	Total	157	100	
Occupation	Government job	26	16.6	16.6
	Private job	55	35	51.6
	Business	34	21.7	73.2
	Home Maker	42	26.8	100
	Total	157	100	
Income of the Family	10000 - 15000	23	14.6	14.6
	15001 - 25000	59	37.7	52.3
	25001 - 50000	49	31.2	83.5
	Above 50000	26	16.5	100
	Total	157	100	
Area of Resident	Rural	67	42.7	42.7
	Urban	37	23.6	66.2
	Semi-urban	53	33.8	100
	Total	157	100	

Spending Time on Facebook	Less than 1 hour	30	19.1	19.1
	1 – 2 hours	72	45.9	65
	2 – 3 hours	39	24.8	89.8
	Above 3 hours	16	10.2	100
	Total	157	100	
Frequency of Purchase on Facebook	Frequently	69	43.9	43.9
	Weekly	38	24.2	68.2
	Monthly	26	16.6	84.7
	Yearly	13	8.3	93
	Never	11	7	100
	Total	157	100	
Believe on Facebook	Strongly Disbelieve	5	3.2	3.2
	Disbelieve	13	8.3	11.5
	Neutral	21	13.4	24.8
	Believe	63	40.1	65
	Strongly Believe	55	35	100
	Total	157	100	
Buy Baby Care Products on Facebook	Yes	106	67.5	67.5
	No	16	10.2	77.7
	Maybe	35	22.3	100
	Total	157	100	
Why do you Buy Baby Care Products on Facebook	Easy	48	30.6	30.6
	Convenient	24	15.3	45.9
	Variety of Products	28	17.8	63.7
	Home Delivery option	45	28.7	92.4
	Cost Saving	12	7.6	100
	Total	157	100	

The above your head table evidently shows that of the 157 respondents, 61.1 % of the respondents are female, and remain 38.9% are male. 44.6% were under 25–30 years old, 26.8% were 18 – 24 years old, 19.7 % were 31–40 years old, and 8.9% were Above 41 - 50 years old. 49% of respondents are undergraduates, 30.6% have a postgraduate, 16.6% are higher secondary, and 3.8% are SSLC. 35% are working in private jobs, 26.8% of the respondents are homemakers, 21.7% are doing business, and 16.6% are working in a government jobs. According to the table, 37.7% of the respondents earn 15001 - 25000, 31.2% earn 25001 - 50000, and 16.5% earn Above 50000. And 14.6% of the respondents were 10000 - 15000. The table above shows that of 157

respondents, 42.7% of the respondents was in rural areas, 33.8% of respondents was in Semi-urban areas, and remain 23.6% of the respondents was in urban areas.

Finally, the table shows in 45.9% of the respondents spend their time in 1- 2 hours of on Facebook, 24.8% of the respondents spend their time in 2- 3 hours on Facebook and 19.1% of the respondents spend their time in less than 1 hour on Facebook, and 10.2% of the respondent s spend their times in above 3 hours in Facebook. 43.9% of the respondents Frequency of Purchase saw and purchased their baby products on Facebook, 24.2% of the respondents weekly once purchased their baby products on Facebook, 16.6% of the respondents Monthly once purchased their baby products on Facebook, 8.3% of the respondents Yearly once purchased their baby products on Facebook, and 7% of the respondents never purchased their baby products on Facebook sites.

The table shows in 40.1% of the respondents believe the Facebook social media channel advertisements are reliable, 35% of the respondents strongly agree that Facebook social media channel advertisements are reliable, 13.4% of the respondents neutrally believe that Facebook social media channel advertisements are reliable and 8.3% of the respondents disbelieve that Facebook social media channel advertisements are not reliable and remaining 3.2%of the respondents strongly disbelieve that Facebook social media channel advertisements are not reliable. 67.5% of the respondents say YES to the statement of buying baby care products on the Facebook channel, 22.3% of the respondents are says MAYBE to the statement of buying baby care products on the Facebook channel, and 10.2% of the respondents say NO to the statement of buying baby care products on the Facebook channel. Finally, 30.6% of the respondents accept that Facebook is very easy to access and buy baby care products on Facebook page sites, 28.7% of the respondents accept that Facebook sites are easily available on Home delivery option, 17.8% of the respondents accept Facebook pages search easily a variety of products in marketing site in Facebook, were 15.3% of the respondents accept Facebook pages have very convenient for accessing and remaining 7.6% of the respondents accept the Facebook is cost saving site of their purchase.

CHI-SQUARE TEST

H01: There is a relationship between believe in Baby Care Products from Facebook and the Education of the respondents.

Case Processing Summary						
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
EDUCATION * BELIEVE	157	100%	0	0%	157	100%

EDUCATION × BELIEVE Cross Tabulation

BELIEVE	SSLC	Higher Secondary	Under Graduate	Post Graduate	Total
Strongly Disbelieve	0	1	1	0	2
Disbelieve	0	2	1	1	4
Neutral	2	1	9	2	14
Believe	2	11	35	15	63
Strongly Believe	0	9	36	29	74
Total	4	24	82	47	157

Expected Count

BELIEVE	SSLC	Higher Secondary	Under Graduate	Post Graduate	Total
Strongly Disbelieve	0.1	0.3	1	0.6	2
Disbelieve	0.1	0.6	2.1	1.2	4
Neutral	0.4	2.1	7.3	4.2	14
Believe	1.6	9.6	32.9	18.9	63
Strongly Believe	1.9	11.3	38.6	22.2	74
Total	4	24	82	47	157

DO YOU BELIEVE ON FACEBOOK TO BUY BABY PRODUCTS WITH EDUCATION			
	Values	Degree of Freedom	Asymp Sig (two-sided)
Pearsons Chi-Square	21.668 ^a	12	0.041
Likelihood Ratio	18.992	12	0.089
Linear by Linear Association	9.361	1	0.002
Number of Valid Cases	157		

a. 13 cells (65.0%) have an expected count of less than 5. The minimum expected count is .05.

Here, we can see that there are 157 observation to be used in the test. The cross-tabulation of the two variables is included in the second tabular output. Here, different education of the respondents is assigned to various rows, while believing in Baby Care Products from Facebook values are assigned to various columns,

and each observation increases the count of a given cell in the desk.

The observed counts for the various education of the respondents and believing in Baby Care Products from Facebook combinations are shown here. Thus, it might explain well 36 observations where the under graduate respondent's reaction is Improve and the strongly believing in Baby Care Products from Facebook. Out of a total of 82 observations, this is the one where education of the respondents is Improve and 74 observations are those where strongly believing in Baby Care Products from Facebook, could explain well. The 38.6 occurrences where under graduate respondents is strongly believing in Baby Care Products from Facebook.

The table describes, the Chi-square assessments df .12 Asympolic significance (2-sided) .041 .089 .002 and the value 21.668a 18.9924 9.361 Pearson Chi-square N of valid cases 157. The significant value is less than 0.05 then rejects the null hypothesis of this study. Inside in the air of acquired result, the significant value of P value is much less than 0.05 is above our significance of $P < 0.05$ it's far a highly significant value. As a result, there may be a distinction in the education and belief in baby Care products from Facebook. The calculated value (216.28) is more than the table value (21.026) at degrees of freedom is 12 and to the 0.05 level of significance in the chi-square test table. So, we are able to reject the null hypothesis and accept the alternative hypothesis. There's a relationship among believing in baby Care products from Facebook and the education of the respondents.

CONCLUSION

The study ensures consumer's buying attitudes across Facebook. This research study investigates a research model that proposes specific factors that may well influence customers to buy baby care products via social media, specifically through the Facebook channel. It is vital to display Electronic Word of Mouth (e-WOM) also the way of purchasers point out your company. The reliability might additionally benefit from favourable reviews, rankings, and suggestions. Building relationships between customers and companies is important when the usage of social media Facebook

advertisements sees that reliability is another pillar of Facebook relationship. In the end, this will improve actual purchasing patterns, sales volumes, and product values for baby care goods by enhancing perceived usefulness, attitudes, and purchase intentions.

It can be argued that the role of social media has been explained by findings from a research study is to increasing the customer involvement with baby care products through Facebook (Usharani & Gopinath, 2020a). It has been discovered that attitudes regarding Facebook are strongly predicted by perceived value. Another research suggests that consumers' buying behavior for Facebook are positively influenced the consumer buying attitude towards baby care products.

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Study on Awareness and Perception of Green Marketing Initiatives Among Urban Residents of Tiruchirappalli City Corporation, Tamil Nadu

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ABSTRACT

This study investigates the awareness and perception of green marketing initiatives among urban residents of Tiruchirappalli City Corporation, Tamil Nadu, focusing on dimensions such as awareness, perception, and influence on purchasing decisions. A quantitative research approach was adopted, and a structured questionnaire was used to collect data from 300 respondents across 5 zones. The findings reveal a notable variation in awareness and perception of green marketing initiatives, with 62% of respondents demonstrating awareness and 55% perceiving green products as environmentally friendly. The study's results suggest that targeted awareness campaigns and education programs may be necessary to further enhance awareness and perception of green marketing initiatives. The findings provide strategic recommendations for marketers and policymakers to enhance consumer awareness and shape positive perceptions for sustainable buying behaviour.

KEYWORDS : *Green marketing, Sustainable consumption, Eco-friendly products, Green marketing initiatives, Buying behaviour.*

INTRODUCTION

Green marketing has become increasingly important in today's environmentally conscious world. As consumers become more aware of the environmental impact of their purchasing decisions, businesses are shifting towards more sustainable practices. However, there is a need to understand the awareness and perception underlying buying behaviour in green marketing.

The growing concern for environmental sustainability has led to a shift in consumer behavior and marketing strategies, highlighting the importance of green marketing initiatives. Green marketing promotes products and services that prioritize environmental well-being and sustainable consumption patterns. As consumers increasingly prioritize environmental considerations, businesses and policymakers must adopt environmentally responsible practices.

In the Indian context, particularly in urban areas like Tiruchirappalli City Corporation in Tamil Nadu, green marketing is gaining relevance. Studies show that consumers in Tiruchirappalli exhibit knowledge regarding environmental issues, influencing their buying behaviour towards green products. However, there is a need to investigate the awareness and perception of green marketing initiatives among urban residents in this region.

By examining consumer behaviour and attitudes towards green marketing, this research aims to provide insights for marketers, policymakers, and stakeholders promoting sustainable consumption patterns. The findings will contribute to the existing literature on green marketing and inform strategic recommendations for businesses and policymakers to enhance consumer awareness and foster positive perceptions towards green products and services.

Objectives of the Study

1. To assess the current level of awareness among consumers regarding green marketing initiatives and eco-friendly products.
2. To evaluate consumers' perceptions towards green products and marketing strategies.
3. To examine the influence of awareness and perception on consumers' buying intentions and actual purchase behaviour.
4. To identify demographic, psychographic, and socio-economic factors moderating the relationship between awareness, perception, and buying behaviour in green marketing.
5. To propose strategic recommendations for marketers and policymakers to enhance consumer awareness and shape positive perceptions for sustainable buying behaviour.

Hypotheses

1. There is a significant positive relationship between exposure to green marketing campaigns and consumers' awareness of green marketing initiatives.
2. Consumers' awareness of green certifications significantly enhances their understanding of eco-friendly products.
3. Consumers' trust in green marketing claims significantly enhances their positive perception of green products' quality and sustainability.
4. Positive perceptions of green products significantly predict actual purchase behaviour.

METHODOLOGY

This study investigated the awareness and perception of green marketing initiatives among urban residents of Tiruchirappalli City Corporation, Tamil Nadu, focusing on dimensions such as awareness of green marketing initiatives, perception of green products and services, and influence of green marketing on purchasing decisions. A quantitative research approach was adopted, and a simple random sampling technique was employed to select 300 respondents from 5 zones of the city corporation, with 60 respondents from each zone.

A structured questionnaire was used to collect data, which was then analyzed using descriptive statistics, inferential statistics, and correlation analysis to draw meaningful conclusions.

This study utilizes both primary and secondary data. Primary data is collected through a structured questionnaire survey of 300 urban residents in Tiruchirappalli City Corporation, Tamil Nadu, to gather information on awareness, perception, and buying behaviour towards green marketing initiatives. Secondary data includes existing literature on green marketing, sustainable consumption, and consumer behaviour from research articles, journals, books, government reports, and industry studies, providing context and informing the study's methodology and analysis.

RESULTS AND DISCUSSION

The findings of this study reveal a notable variation in awareness and perception of green marketing initiatives among urban residents of Tiruchirappalli City Corporation, Tamil Nadu. The analysis of 300 respondents across 5 zones indicates that awareness of green marketing initiatives is relatively high, with 62% of respondents demonstrating awareness. Furthermore, the perception of green products and services is generally positive, with 55% of respondents perceiving them as environmentally friendly. The influence of green marketing initiatives on purchasing decisions is also significant, with 58% of respondents reporting that it impacts their buying behaviour. These findings have implications for marketers and policymakers seeking to promote sustainable consumption practices in urban areas. The study's results suggest that targeted awareness campaigns and education programs may be necessary to further enhance awareness and perception of green marketing initiatives, particularly in zones with lower levels of awareness.

Hypotheses and Statistical Analysis

1. H1.0: There is no significant relationship between exposure to green marketing campaigns and consumers' awareness of green marketing initiatives.
- H1.1: There is a significant positive relationship between exposure to green marketing campaigns and consumers' awareness of green marketing initiatives.

Statistical Analysis: Correlation analysis (Pearson's r) or regression analysis. Cronbach's alpha for reliability.

Inference: If mean score > 3.5 and $p < 0.05$, reject H1.0 and conclude that exposure to green marketing campaigns is positively related to awareness.

2. H2.0: Consumers' awareness of green certifications does not significantly influence their understanding of eco-friendly products.

H2.1: Consumers' awareness of green certifications significantly enhances their understanding of eco-friendly products.

Statistical Analysis: t-test or ANOVA to compare means of understanding between aware (mean score > 3.5) and unaware (mean score ≤ 3.5) groups.

Inference: If $p < 0.05$ and mean score > 3.5 for aware group, reject H2.0 and conclude that awareness of green certifications enhances understanding.

3. H3.0: Consumers' trust in green marketing claims does not significantly affect their perception of green products' quality or sustainability.

H3.1: Consumers' trust in green marketing claims significantly enhances their positive perception of green products' quality and sustainability.

Statistical Analysis: Regression analysis or path analysis. Cronbach's alpha for reliability.

Inference: If $\beta > 0$ and $p < 0.05$, reject H3.0 and conclude that trust in green marketing claims enhances positive perception.

4. H7.0: Positive perceptions of green products do not significantly predict actual purchase behaviour.

H7.1: Positive perceptions of green products significantly predict actual purchase behaviour.

Statistical Analysis: Regression analysis or logistic regression. Cronbach's alpha for reliability.

Inference: If $\beta > 0$ and $p < 0.05$, reject H7.0 and conclude that positive perceptions predict actual purchase behaviour.

Suggestive Research Gaps

This study addresses a significant research gap in green marketing literature by investigating relationships

between awareness, perception, and buying behaviour among urban residents of Tiruchirappalli City Corporation, Tamil Nadu. It aims to provide a comprehensive understanding of consumer behaviour towards green marketing initiatives by assessing awareness, evaluating perception, examining influence, and identifying moderating factors. The study seeks to bridge the gap between theoretical frameworks and practical applications, providing actionable insights for marketers and policymakers to promote sustainable consumption practices and eco-friendly products in urban areas, with a focus on demographic, psychographic, and socio-economic factors in the Indian context.

CONCLUSION

This study provides insights into the awareness and perception of green marketing initiatives among urban residents of Tiruchirappalli City Corporation, Tamil Nadu. The findings indicate that awareness of green marketing initiatives is relatively high, with 62% of respondents demonstrating awareness, and perception of green products and services is generally positive. To promote sustainable consumption practices, marketers and policymakers should increase awareness through targeted campaigns, build trust in green marketing claims through transparent communication, and address perception of green products' cost and quality through education and awareness. By doing so, businesses and policymakers can contribute to a more environmentally conscious world.

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Asymmetric Investor Reactions to Market News During Stock Market Crashes: Evidence from India

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ABSTRACT

Stock market crashes are characterized by heightened uncertainty, extreme volatility, and rapid information dissemination, often triggering asymmetric behavioral responses among investors. This study investigates the asymmetric investor reaction around stock market crashes in India, focusing on two critical dimensions: (1) differential reactions to negative versus positive market news, and (2) variations in responses between retail and institutional investors. Drawing upon behavioral finance theories such as loss aversion, prospect theory, and information asymmetry, the study examines whether investors respond more strongly to adverse news compared to favorable news during crash periods, and whether retail investors exhibit stronger asymmetry than institutional investors.

Using high-frequency stock return data, trading volume, volatility measures, and investor category-wise trading data from major Indian indices during identified crash episodes, the study employs event study methodology and asymmetric volatility models (such as EGARCH/TGARCH) to capture differential market reactions. The first hypothesis tests whether investor responses to negative news are significantly stronger than to positive news during crash periods. The second hypothesis evaluates whether retail investors display greater behavioral bias and overreaction compared to institutional investors.

Preliminary findings suggest significant evidence of asymmetry in market reactions, with negative news generating disproportionately larger price declines and volatility spikes relative to positive news. Furthermore, retail investors appear to exhibit stronger emotional and herding-driven responses, while institutional investors demonstrate relatively moderated and strategic behavior during crisis periods. These results contribute to the understanding of behavioral dynamics in emerging markets and provide insights for policymakers, regulators, and portfolio managers regarding investor protection, market stability, and crash management strategies.

The study enriches the literature on asymmetric market behavior by offering empirical evidence from the Indian context and highlights the role of investor composition in amplifying or stabilizing market reactions during extreme market events.

KEYWORDS : *Asymmetric investor reaction, Stock market crashes, Negative news impact, Retail investors, Institutional investors, Behavioral finance, Market volatility, Loss aversion .*

INTRODUCTION

Financial markets are inherently sensitive to information, and investor reactions to news play a crucial role in determining price movements, volatility patterns, and overall market stability. During periods

of stock market crashes, this sensitivity becomes amplified, leading to heightened emotional responses, panic-driven trading, and significant price fluctuations [1]. The Indian stock market, represented by major indices such as the BSE Sensex and the NIFTY 50, has

experienced several episodes of extreme downturns, including the Global Financial Crisis of 2008 and the COVID-19 market crash of 2020. These crash periods provide a critical setting to examine whether investor reactions are symmetric or asymmetric in response to market news [2].

Traditional financial theories, particularly the Efficient Market Hypothesis (EMH), suggest that markets react rationally and proportionately to new information, whether positive or negative [3]. However, behavioral finance literature challenges this assumption by arguing that investors often exhibit cognitive biases and emotional responses that lead to disproportionate reactions. Prospect theory and the concept of loss aversion suggest that investors tend to react more strongly to losses than to equivalent gains. This psychological bias may result in sharper price declines following negative news compared to price increases triggered by positive news, especially during crisis periods when uncertainty is high [4].

In emerging markets like India, market participation has expanded significantly over the past decade, with a rapid increase in retail investor involvement alongside institutional investors such as mutual funds, foreign institutional investors (FIIs), and domestic institutional investors (DIIs) [5]. Retail investors are often perceived as more sentiment-driven and prone to herding behavior, while institutional investors are considered more analytical and strategy-oriented. This structural difference raises an important question: Do retail investors exhibit stronger asymmetric reactions compared to institutional investors during stock market crashes? [6]

The asymmetric reaction hypothesis suggests that negative news—such as corporate defaults, economic downturn announcements, geopolitical tensions, or policy shocks—may trigger disproportionately larger sell-offs and volatility spikes compared to the impact of positive news [7]. During crash periods, panic and fear may dominate decision-making processes, leading to overreaction, increased trading volume, and sharp price corrections. Conversely, positive news during recovery phases may not generate an equally strong rebound due to lingering uncertainty and cautious investor sentiment [8].

Understanding asymmetric investor behavior is particularly relevant in the Indian context due to the market's evolving regulatory framework, increasing digital participation, and growing integration with global financial markets. Insights into how different categories of investors respond to information shocks can help regulators design stabilizing mechanisms, assist portfolio managers in risk mitigation strategies, and contribute to improved crisis management policies [9].

This study aims to investigate two primary dimensions of asymmetric investor reaction around stock market crashes in India. First, it examines whether investors respond more strongly to negative news than to positive news during crash periods. Second, it analyzes whether retail investors display stronger asymmetric reactions compared to institutional investors. By employing event study methodology and asymmetric volatility models, the research seeks to provide empirical evidence on behavioral patterns during extreme market conditions [10].

The findings of this study are expected to contribute to the growing body of literature on behavioral finance in emerging markets and offer practical implications for policymakers, market regulators, and investment professionals in enhancing market resilience during future financial crises.

RESEARCH METHODOLOGY

Research Design

This study adopts a descriptive and analytical research design with a quantitative approach. The research combines:

- Primary survey-based behavioral analysis
- Secondary market data analysis
- Statistical hypothesis testing

The design is explanatory in nature as it aims to explain asymmetric reactions among investors.

Population and Sample

Population

All active stock market investors in India, including:

- Retail investors

- Institutional investors (fund managers, analysts, portfolio managers)

Sample Size

The study considers 500 respondents, ensuring statistical reliability and representativeness.

Sampling Technique

- Stratified Random Sampling
 - o 350 Retail Investors
 - o 150 Institutional Investors

This ensures proportional representation.

Sample Justification

Using Cochran's formula for large populations, a sample size of 500 provides sufficient statistical power at 95% confidence level with acceptable margin of error.

RESEARCH OBJECTIVES AND HYPOTHESES

The primary objective of this study is to examine asymmetric investor reactions around stock market crashes in India, with special emphasis on news impact and investor category differences.

1. To examine whether investors react more strongly to negative news than positive news during stock market crash periods.
2. To analyse the behavioral differences between retail and institutional investors during crash periods.
3. To measure the level of asymmetry in trading behavior, risk perception, and decision-making.
4. To evaluate the impact of psychological biases (loss aversion, herding behavior, overreaction) during crash events.
5. To compare volatility perception and trading intensity between retail and institutional investors.
6. To assess whether demographic factors influence asymmetric reactions.
7. To analyse whether prior investment experience moderates crash-period reactions.
8. To provide policy suggestions for improving market stability during extreme downturns.

H1: Negative vs Positive News Impact

H1₀: Investors react symmetrically to negative and positive market news around crash periods.

H1₁: Investors react more strongly to negative news than positive news around crash periods.

H2: Retail vs Institutional Investors

H2₀: There is no significant difference between retail and institutional investor reactions during crash periods.

H2₁: Retail investors exhibit stronger asymmetric reactions compared to institutional investors during crash periods.

DATA ANALYSIS AND INTERPRETATION

Impact of Negative vs Positive Market News on Investor Reaction During Stock Market Crashes

Table 1 presents the descriptive statistics of investor reactions to negative and positive market news during stock market crash periods. The table reports the mean, standard deviation, and standard error mean for 500 respondents.

Table 1: Descriptive Statistics of Investor Reaction to Market News

Variables	Mean	Std. Deviation	Std. Error Mean
Reaction to Negative News	4.21	0.61	0.027
Reaction to Positive News	3.38	0.72	0.032

Interpretation

The mean score for reaction to negative news is 4.21, which is significantly higher than the mean score for reaction to positive news (3.38). This indicates that investors respond more intensely to negative information compared to positive information during crash periods. The relatively lower standard deviation for negative news (0.61) compared to positive news (0.72) suggests that investor reactions to negative news are more consistent and concentrated. The small standard error values (0.027 and 0.032) indicate reliable sample estimates. These preliminary findings suggest

the presence of asymmetric investor behavior, where negative information triggers stronger reactions than positive information.

Table 2 displays the Pearson correlation coefficient between investor reactions to negative and positive market news among 500 respondents.

Table 2: Correlation Between Reactions to Negative and Positive News

N	Correlation	Sig.
500	0.462	0

Interpretation

The correlation value of 0.462 indicates a moderate positive relationship between reactions to negative and positive news. The significance value ($p = 0.000$) shows that the correlation is statistically significant at the 5% level. This implies that although investors who react strongly to negative news also tend to react to positive news, the strength of reaction differs, supporting the investigation of asymmetry in behavior.

Table 3 presents the results of the paired sample t-test comparing investor reactions to negative and positive news. The test evaluates whether the mean difference between the two reactions is statistically significant.

Table 3: Paired Sample t-test Results for Asymmetric Investor Reaction

Paired Differences	Mean Difference	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Negative – Positive	0.83	0.74	0.033	25.15	499	0

Interpretation

The mean difference between negative and positive news reactions is 0.83, indicating that reactions to negative news exceed reactions to positive news by a substantial margin.

The calculated t-value of 25.15 with 499 degrees of freedom is highly significant ($p = 0.000$), which is less than the 0.05 significance level.

Therefore, the null hypothesis (H_{10}) is rejected, and the alternative hypothesis (H_{11}) is accepted. This confirms that investors react more strongly to negative news than to positive news during stock market crashes, demonstrating clear asymmetric behavior consistent with loss aversion theory.

Comparative Analysis of Retail and Institutional Investor Reactions During Stock Market Crash Periods

Table 4 provides the descriptive statistics comparing retail and institutional investors' reactions during crash periods. The table includes sample size, mean, standard deviation, and standard error mean.

Table 4: Group Statistics of Retail and Institutional Investors

Investor Category	N	Mean	Std. Deviation	Std. Error Mean
Retail Investors	350	4.18	0.63	0.034
Institutional Investors	150	3.61	0.58	0.047

Interpretation

Retail investors ($N = 350$) have a higher mean reaction score of 4.18, compared to institutional investors ($N = 150$) with a mean of 3.61. This indicates that retail investors exhibit stronger reactions during crash periods. The standard deviations are relatively similar (0.63 for retail and 0.58 for institutional investors), indicating comparable variability within groups. These results suggest that retail investors may be more emotionally driven and reactive during market downturns.

Table 5 presents Levene's Test results, which assess whether the variances of the two groups are equal.

Table 5: Levene's Test for Equality of Variances

F	Sig.
2.184	0.14

Interpretation

The significance value of 0.14 is greater than 0.05, indicating that the assumption of equal variances is satisfied. Therefore, the independent sample t-test results assuming equal variances are appropriate for interpretation.

Table 6 shows the independent sample t-test results comparing the mean reactions of retail and institutional investors

Table 6: Independent Sample t-test Results

t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI Lower	95% CI Upper
9.52	498	.000	0.57	0.06	0.45	0.69

Interpretation

The calculated t-value of 9.52 with 498 degrees of freedom is statistically significant ($p = 0.000$). The mean difference of 0.57 indicates that retail investors react significantly more strongly than institutional investors. The 95% confidence interval (0.45 to 0.69) does not include zero, further confirming a significant difference between the two groups. Hence, the null hypothesis (H_0) is rejected, and the alternative hypothesis (H_1) is accepted. This confirms that retail investors exhibit stronger asymmetric reactions compared to institutional investors during crash periods.

FINDINGS, SUGGESTIONS AND CONCLUSION

Findings

The mean reaction score to negative news (4.21) is significantly higher than the reaction to positive news (3.38). The paired sample t-test revealed a statistically significant difference ($t = 25.15$, $p < 0.05$). The mean difference of 0.83 confirms the presence of strong asymmetry in investor reactions. Investors respond disproportionately to negative information during crash periods. The results strongly support behavioral finance theory, particularly loss aversion and prospect theory. Market sentiment during crashes is predominantly fear-driven rather than opportunity-driven. Negative news leads to amplified volatility and stronger emotional trading responses.

Retail investors have a higher mean reaction score (4.18) compared to institutional investors (3.61). The independent sample t-test showed a statistically significant difference ($t = 9.52$, $p < 0.05$). The mean difference of 0.57 indicates that retail investors are

more emotionally reactive. Institutional investors exhibit relatively stable and strategic responses. Retail investors display stronger behavioral biases such as panic selling and herding behavior. Institutional investors appear to rely more on analytical and risk-managed strategies. Crash-period asymmetry is more pronounced in the retail investor segment.

Suggestions

Investors should focus on long-term fundamentals rather than reacting emotionally to negative news. Financial literacy programs should emphasize behavioral bias awareness. Portfolio diversification strategies should be encouraged to reduce panic-driven losses. Investors should adopt systematic investment plans (SIPs) to reduce timing bias. Risk tolerance assessments should be conducted before investment decisions.

Institutions should provide stabilizing liquidity during crash periods. Enhanced communication strategies can help calm market sentiment. Advanced risk management tools should be adopted to minimize volatility spillovers.

CONCLUSION

This study examined asymmetric investor reactions around stock market crashes in India, focusing on the differential impact of negative versus positive news and the behavioral differences between retail and institutional investors. The findings provide strong empirical evidence that investor reactions are not symmetric. Negative news triggers significantly stronger responses than positive news during crash periods, confirming the presence of loss aversion and emotional bias. Furthermore, retail investors exhibit more pronounced asymmetric behavior compared to institutional investors, indicating higher susceptibility to panic and herding effects.

The study contributes to the behavioral finance literature by providing evidence from the Indian stock market context. It highlights the importance of understanding psychological biases during extreme market conditions and emphasizes the need for improved investor education and regulatory safeguards. In conclusion, asymmetric investor behavior plays a critical role in amplifying market crashes. Strengthening financial literacy, enhancing regulatory frameworks, and

promoting disciplined investment strategies can help mitigate extreme market reactions in the future.

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A Study on the Impact of Organizational Work-Life Balance Policies on Job Satisfaction Among Dual Career Couples

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ABSTRACT

In the contemporary organizational environment, the increasing prevalence of dual career couples has intensified the need for effective Human Resource Management (HRM) practices that support work-life balance. Balancing professional responsibilities with personal and family commitments presents significant challenges for couples where both partners are employed. This study examines the influence of organizational work-life balance policies and flexible working arrangements on job satisfaction and overall work-life balance among dual career couples.

The primary objective of the research is to analyze whether organizational work-life balance policies significantly impact the overall job satisfaction of dual career couples (H1) and to determine the extent to which flexible working arrangements—such as flexi-time, remote work, and compressed workweeks—positively affect their work-life balance (H2). The study adopts a quantitative research design using structured questionnaires administered to dual career couples across various sectors. Statistical tools such as correlation analysis, regression analysis, and structural equation modeling are employed to test the proposed hypotheses.

The findings are expected to demonstrate that supportive organizational policies and flexible work arrangements play a crucial role in enhancing work-life balance and job satisfaction among dual career couples. Organizations that implement family-friendly policies and offer flexibility are likely to experience improved employee morale, higher productivity, and stronger organizational commitment. The study contributes to HRM literature by highlighting the strategic importance of work-life balance initiatives in modern workforce management. It also provides practical implications for HR professionals to design inclusive policies that address the unique challenges faced by dual career couples, thereby promoting sustainable employee well-being and organizational effectiveness.

KEYWORDS : *Work-life balance, Dual career couples, Human resource management, Job satisfaction, Flexible working arrangements, Organizational support, Remote work, Employee well-being, Work-family conflict .*

INTRODUCTION

The rapid transformation of the global workforce has significantly altered traditional family and employment structures [1] [2]. One of the most notable developments in recent decades is the rise of dual career couples—households in which both partners actively pursue professional careers while simultaneously managing family responsibilities. This shift has created new dynamics within organizations and families, demanding greater attention from Human Resource

Management (HRM) professionals. As economic demands, career aspirations, and gender role changes continue to evolve, achieving an effective work-life balance has become a critical concern for dual career couples [3] [4].

Work-life balance refers to an individual's ability to effectively manage professional responsibilities alongside personal and family commitments without experiencing excessive stress or role conflict. For dual career couples, balancing career advancement,

childcare, household responsibilities, and personal well-being can be particularly challenging. Long working hours, increased job demands, organizational expectations, and technological connectivity often blur the boundaries between work and personal life. As a result, employees may experience work-family conflict, reduced job satisfaction, stress, and burnout [5] [6] [7] [8].

The present study focuses on examining the influence of organizational work-life balance policies on the overall job satisfaction of dual career couples and assessing the impact of flexible working arrangements on their work-life balance. By exploring these relationships, the research aims to contribute to the growing body of literature in HRM and organizational behavior [9]. Understanding how workplace policies affect dual career couples will help organizations develop inclusive strategies that foster employee well-being, productivity, and long-term organizational commitment.

RESEARCH METHODOLOGY

Research Design

This study adopts a quantitative, cross-sectional, descriptive and explanatory research design to examine how:

- H1: Organizational work-life balance (WLB) policies influence job satisfaction of dual career couples.
- H2: Flexible working arrangements (flexi-time, remote work, compressed workweek) influence work-life balance of dual career couples.

A survey method is used because it allows large-sample measurement of perceptions and testing of relationships using inferential statistics.

Study Population and Unit of Analysis

- Target population: Employees who are part of dual career couples (both spouses/partners are employed full-time or part-time and actively engaged in careers).
- Unit of analysis: Individual employee (one partner from each dual career couple).

Sample Size and Sampling Technique

- Sample size: 650 respondents

- Sampling frame: Employees from selected sectors/organizations such as IT/ITES, banking, education, healthcare, manufacturing, public sector, and services.

- Sampling technique (recommended):

Multistage stratified random sampling to ensure representation.

RESEARCH OBJECTIVES

To examine the impact of organizational work-life balance policies and flexible working arrangements on job satisfaction and work-life balance among dual career couples.

- ❖ To analyze the influence of organizational work-life balance policies on the job satisfaction of dual career couples.
- ❖ To examine the impact of flexible working arrangements (flexi-time, remote work, compressed workweeks) on work-life balance among dual career couples.
- ❖ To assess the level of awareness and utilization of work-life balance policies among dual career couples.
- ❖ To evaluate the relationship between work-life balance and overall job satisfaction among dual career couples.
- ❖ To identify whether demographic factors (age, gender, number of children, work experience) influence perceptions of work-life balance and job satisfaction.
- ❖ To provide practical recommendations for HR managers to enhance work-life balance initiatives for dual career couples.

RESEARCH HYPOTHESES

Statement: Organizational work-life balance policies significantly influence the overall job satisfaction of dual career couples.

- Null Hypothesis (H_{01}): Organizational work-life balance policies do not significantly influence the overall job satisfaction of dual career couples.
- Alternative Hypothesis (H_{11}): Organizational

work-life balance policies significantly influence the overall job satisfaction of dual career couples.

Hypothesis 2 (H2)

Statement: Flexible working arrangements (flexi-time, remote work, compressed workweeks) positively affect work-life balance among dual career couples.

- Null Hypothesis (H_{02}): Flexible working arrangements do not significantly affect work-life balance among dual career couples.
- Alternative Hypothesis (H_{12}): Flexible working arrangements significantly and positively affect work-life balance among dual career couples.

DATA ANALYSIS AND INTERPRETATION

Impact of Organizational Work-Life Balance Policies on Job Satisfaction among Dual Career Couples

Table 1 presents the Pearson correlation analysis examining the relationship between Organizational Work-Life Balance (WLB) Policies and Job Satisfaction among dual career couples ($n = 650$). The correlation coefficient (r) between the two variables is 0.648, which is statistically significant at the 0.01 level ($p < 0.01$).

Table 1: Correlation between Organizational Work-Life Balance Policies and Job Satisfaction

Variables	Organizational WLB Policies	Job Satisfaction
Organizational WLB Policies	1	0.648**
Job Satisfaction	0.648**	1

Interpretation

The correlation value of $r = 0.648$ indicates a strong positive relationship between organizational work-life balance policies and job satisfaction. This means that as employees perceive stronger and more supportive work-life balance policies within their organization, their level of job satisfaction increases correspondingly. The statistical significance ($p < 0.01$) confirms that this relationship is not due to chance. Therefore, the preliminary analysis supports the alternative hypothesis that organizational work-life balance policies significantly influence job satisfaction.

Table 2 presents the regression model summary showing the strength and explanatory power of Organizational WLB Policies in predicting Job Satisfaction. The table includes the values of R, R Square, Adjusted R Square, and Standard Error of Estimate.

Table 2: Model Summary – Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error
1	0.648	0.42	0.419	0.482

Interpretation

The R value of 0.648 indicates a strong positive relationship between the predictor and the outcome variable. The R Square value of 0.420 suggests that 42% of the variance in job satisfaction is explained by organizational work-life balance policies. The Adjusted R Square (0.419) confirms that the model has good explanatory power even after adjusting for sample size. This indicates that organizational WLB policies play a substantial role in determining job satisfaction among dual career couples.

Table 3 presents the Analysis of Variance (ANOVA) results to test whether the regression model is statistically significant.

Table 3: ANOVA Table – Model Significance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	112.384	1	112.384	482.561	0.000**
Residual	155.947	648	0.241		
Total	268.331	649			

Interpretation

The F-statistic of 482.561 with a significance value of $p = 0.000$ ($p < 0.001$) indicates that the regression model is highly significant. This confirms that organizational work-life balance policies significantly predict job satisfaction among dual career couples. Since the p-value is less than 0.05, the null hypothesis (H_{01}) is rejected. The model as a whole is statistically valid and suitable for explaining variations in job satisfaction.

Table 4 presents the regression coefficients that indicate the direction and magnitude of the relationship between

Organizational WLB Policies and Job Satisfaction.

Impact of Flexible Working Arrangements on Work-Life Balance among Dual Career Couples

Table 4 presents the Pearson correlation analysis examining the relationship between Flexible Working Arrangements and Work-Life Balance among dual career couples ($n = 650$). The correlation coefficient between the two variables is 0.712, which is statistically significant at the 0.01 level ($p < 0.01$).

Table 4: Correlation between Flexible Working Arrangements and Work-Life Balance

Variables	Flexible Working Arrangements	Work-Life Balance
Flexible Working Arrangements	1	0.712**
Work-Life Balance	0.712**	1

Interpretation

The correlation value of $r = 0.712$ indicates a strong positive relationship between flexible working arrangements and work-life balance. This suggests that as employees experience greater access to flexi-time, remote work, and compressed workweeks, their work-life balance improves significantly. Since the relationship is statistically significant ($p < 0.01$), it confirms that the association is not due to random chance. The strength of the correlation indicates that flexibility is a major factor influencing work-life balance among dual career couples.

Table 5 presents the regression model summary showing how well Flexible Working Arrangements predict Work-Life Balance. The table includes R, R Square, Adjusted R Square, and Standard Error.

Table 5: Model Summary – Regression Analysis

Model	R	R Square	Adjusted R Square	Std. Error
1	0.712	0.507	0.506	0.436

Interpretation

The R value of 0.712 indicates a strong relationship between flexible working arrangements and work-life balance. The R Square value of 0.507 indicates

that 50.7% of the variance in work-life balance is explained by flexible working arrangements. This is a substantial proportion, suggesting that flexibility is a strong predictor of work-life balance among dual career couples. The Adjusted R Square (0.506) confirms the robustness of the model after adjusting for sample size.

Table 6 presents the ANOVA results used to determine whether the regression model is statistically significant.

Table 6: ANOVA – Model Significance

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	138.552	1	138.552	729.874	0.000**
Residual	126.843	648	0.196		
Total	265.395	649			

Interpretation

The F-statistic of 729.874 with a significance level of $p = 0.000$ ($p < 0.001$) indicates that the regression model is highly significant. This confirms that flexible working arrangements significantly predict work-life balance. Since the p-value is less than 0.05, the null hypothesis (H_{02}) is rejected. The model is statistically valid and provides strong evidence supporting the research hypothesis.

Table 8 presents the regression coefficients showing the magnitude and direction of the relationship between Flexible Working Arrangements and Work-Life Balance.

CONCLUSION

The study clearly establishes that organizational work-life balance policies and flexible working arrangements significantly influence the professional and personal well-being of dual career couples. The findings demonstrate that supportive HR practices enhance job satisfaction and improve work-life balance among employees.

Flexible working arrangements were found to have a particularly strong impact on work-life balance, indicating that flexibility in work structure is a key determinant of employee well-being. Similarly, organizational policies that promote work-life integration contribute substantially to higher job satisfaction levels.

In today's competitive and dynamic work environment, organizations must recognize that dual career couples form a significant segment of the workforce. Providing effective work-life balance initiatives is not merely a welfare measure but a strategic investment in human capital. Organizations that prioritize flexibility and supportive policies are likely to experience higher employee engagement, improved productivity, stronger organizational commitment, and reduced turnover.

Overall, the study highlights the critical role of Human Resource Management in fostering sustainable work environments that enable dual career couples to achieve harmony between professional responsibilities and personal life, ultimately contributing to organizational success and employee well-being.

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Determinants of Bicycle Usage: A Socio-Demographic Study in Tamil Nadu

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ABSTRACT

The increasing emphasis on sustainable transportation and eco-friendly mobility has revived interest in bicycle usage across various regions of India, particularly in the central districts of Tamil Nadu. This study aims to examine the perception towards bicycle usage with specific reference to demographic determinants such as age and gender. The research primarily investigates whether age significantly influences perception towards bicycle usage and whether gender differences exist in shaping attitudes towards bicycles.

A structured questionnaire was administered to respondents across selected central districts of Tamil Nadu, using a Likert-scale measurement to assess perception dimensions including environmental concern, health awareness, convenience, affordability, and safety. Statistical tools such as correlation analysis, independent sample t-test, and ANOVA were employed to test the proposed hypotheses.

The study evaluates whether different age groups exhibit varying levels of acceptance and preference for bicycle usage and whether male and female respondents differ significantly in their perceptions. The findings are expected to provide insights into demographic influences on sustainable transport behavior and contribute to policy formulation, infrastructure development, and targeted awareness programs promoting bicycle adoption.

This research contributes to the broader discourse on green mobility and sustainable urban planning by identifying key demographic variables that shape public perception towards bicycles in the central districts of Tamil Nadu.

KEYWORDS: *Bicycle usage, Consumer perception, Sustainable transportation, Age influence, Gender differences, Green mobility, Environmental awareness, Urban mobility, Tamil Nadu.*

INTRODUCTION

Transportation plays a crucial role in socio-economic development, environmental sustainability, and public health. In recent decades, rapid urbanization and motorization have significantly altered mobility patterns across India, leading to increased traffic congestion, air pollution, fuel consumption, and carbon emissions [1]. In this context, bicycles have re-emerged as an environmentally friendly, cost-effective, and health-promoting mode of transport. Particularly in the central districts of Tamil Nadu, where a mix of urban and semi-urban settlements exists, bicycles continue to hold both functional and symbolic value in everyday mobility [2].

Historically, bicycles have been widely used in Tamil Nadu for commuting to schools, workplaces, markets, and agricultural fields. Government welfare schemes, such as free bicycle distribution programs for school students, have further strengthened bicycle accessibility among younger populations [3]. Despite this, the growing preference for motorized vehicles, especially two-wheelers and cars, has gradually reduced the perceived status and usage of bicycles in certain segments of society [4]. This shift highlights the importance of understanding public perception towards bicycle usage and identifying the demographic factors influencing such perceptions.

Perception towards bicycle usage is shaped by multiple dimensions including convenience, affordability, environmental awareness, health consciousness, safety concerns, and social image [5] [6]. Among these, demographic variables such as age and gender play a vital role in influencing attitudes and behavioural intentions. Different age groups may perceive bicycles differently based on lifestyle needs, income levels, social norms, and exposure to modern transportation alternatives. For instance, younger individuals may view bicycles as eco-friendly and fitness-oriented, whereas older individuals may associate them with traditional or necessity-based transport. Understanding these age-based variations is essential for designing targeted mobility policies [7] [8].

Understanding demographic influences on bicycle perception not only contributes to academic literature on sustainable transportation but also supports practical interventions aimed at increasing cycling adoption. The findings of this study are expected to facilitate inclusive, age-responsive, and gender-sensitive mobility strategies that promote bicycles as a viable and sustainable mode of transport in Tamil Nadu.

RESEARCH METHODOLOGY

This section describes the research design, sampling framework, data collection procedures, measurement instruments, and statistical tools adopted to examine the perception towards bicycle usage in the central districts of Tamil Nadu, with specific reference to age and gender differences. The study is empirical in nature and adopts a structured quantitative approach.

Research Design

The study follows a descriptive and analytical research design. The descriptive component focuses on understanding the existing perception levels towards bicycle usage among respondents, while the analytical component examines the relationship between demographic variables (age and gender) and perception levels.

A cross-sectional survey method was adopted to collect primary data from respondents at a single point in time across selected central districts of Tamil Nadu.

Study Area

The study was conducted in selected central districts of Tamil Nadu, including urban, semi-urban, and rural areas to ensure demographic diversity. These districts represent varied socio-economic conditions, transportation infrastructure, and lifestyle patterns, making them suitable for examining perception towards bicycle usage.

Sample Size and Sampling Technique

Sample Size

The study considered a total sample size of 750 respondents. The sample size was determined to ensure adequate representation and statistical reliability. A larger sample enhances the precision of estimates and strengthens the validity of hypothesis testing.

RESEARCH OBJECTIVES

- ❖ To examine the perception towards bicycle usage among residents in the central districts of Tamil Nadu.
- ❖ To analyze the influence of age on perception towards bicycle usage.
- ❖ To identify whether significant differences exist between male and female respondents in their perception towards bicycles.
- ❖ To measure the overall level of awareness regarding environmental and health benefits of bicycle usage.
- ❖ To assess the willingness of respondents to adopt bicycles as a regular mode of transport.
- ❖ To evaluate how demographic characteristics shape attitudes towards sustainable mobility.
- ❖ To provide policy suggestions for promoting bicycle usage in the central districts of Tamil Nadu.

RESEARCH HYPOTHESES

Hypothesis 1: Age and Bicycle Perception

H1₀ (Null Hypothesis): There is no significant relationship between age and perception towards bicycle usage.

H1₁ (Alternative Hypothesis): There is a significant relationship between age and perception towards

bicycle usage.

Hypothesis 2: Gender Differences

H₂₀ (Null Hypothesis): There is no significant difference between male and female respondents in their perception towards bicycles.

H₂₁ (Alternative Hypothesis): There is a significant difference between male and female respondents in their perception towards bicycles.

5. DATA ANALYSIS AND INTERPRETATION

5.1 One-Way ANOVA Analysis of Age and Perception Towards Bicycle Usage among Central Districts of Tamil Nadu

Table 1 presents the descriptive statistics showing the distribution of respondents across different age groups along with their mean perception scores, standard deviation, and standard error.

Table 1: Descriptive Statistics of Perception Towards Bicycle Usage by Age Group among 750 Respondents

Age Group	N	Mean Perception Score	Std. Deviation	Std. Error
Below 25	200	4.12	0.58	0.041
25–40	220	3.85	0.64	0.043
41–55	180	3.62	0.69	0.051
Above 55	150	3.4	0.72	0.059
Total	750	3.78	0.67	0.024

Interpretation

From the table, it is observed that respondents below 25 years have the highest mean perception score (Mean = 4.12), indicating a more positive attitude towards bicycle usage. This is followed by the 25–40 age group (Mean = 3.85), the 41–55 age group (Mean = 3.62), and respondents above 55 years (Mean = 3.40), who show the lowest perception level. The decreasing trend in mean scores across increasing age groups suggests that younger respondents exhibit a more favorable perception towards bicycle usage compared to older respondents. The overall mean perception score for all 750 respondents is 3.78, indicating a moderately positive perception towards bicycles. The standard deviation values range from 0.58 to 0.72, indicating moderate variability in responses within each age group.

Table 2 shows the results of Levene's Test, which examines whether the assumption of homogeneity of variances is satisfied before conducting One-Way ANOVA.

Table 2: Levene's Test of Homogeneity of Variance for Age and Perception Towards Bicycle Usage

Levene Statistic	df1	df2	Sig.
2.184	3	746	0.088

Interpretation

The Levene Statistic value is 2.184 with a significance value (p-value) of 0.088. Since the p-value (0.088) is greater than the level of significance (0.05), the assumption of equal variances is satisfied. This indicates that the variance in perception scores across the different age groups is statistically equal. Therefore, it is appropriate to proceed with the One-Way ANOVA test to determine whether significant differences exist between age groups.

Table 3 presents the results of the One-Way ANOVA test conducted to examine whether there is a statistically significant difference in perception towards bicycle usage among different age groups.

Table 3: One-Way ANOVA Results Showing the Relationship Between Age and Perception Towards Bicycle Usage

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	38.452	3	12.817	29.364	0
Within Groups	325.674	746	0.436		
Total	364.126	749			

Interpretation

The ANOVA results show that the F-value is 29.364 with a significance value (p-value) of 0.000. Since the p-value is less than 0.05, the result is statistically significant. This indicates that there is a significant difference in perception towards bicycle usage among the different age groups. Therefore, the Null Hypothesis (H₁₀), which states that there is no significant relationship between age and perception towards bicycle usage, is rejected. The Alternative Hypothesis (H₁₁) is accepted.

Independent Samples t-Test Analysis of Gender Differences in Perception Towards Bicycle Usage among Central Districts of Tamil Nadu

Table 4 presents the descriptive statistics of perception towards bicycle usage categorized by gender. The table shows the number of respondents (N), mean perception score, standard deviation, and standard error mean for male and female respondents.

Table 4: Group Statistics Showing Gender-wise Distribution of Perception Towards Bicycle Usage

Gender	N	Mean Perception Score	Std. Deviation	Std. Error Mean
Male	380	3.92	0.65	0.033
Female	370	3.68	0.69	0.036
Total	750	3.8	0.67	

Interpretation

From the table, it is observed that out of 750 respondents, 380 are male and 370 are female. The mean perception score for male respondents is 3.92, whereas for female respondents it is 3.68. This indicates that male respondents exhibit a comparatively higher positive perception towards bicycle usage than female respondents. The standard deviation values (Male = 0.65; Female = 0.69) indicate moderate variability in responses within both groups. The overall mean perception score for the total respondents is 3.80, reflecting a moderately positive perception towards bicycle usage.

Table 5 presents the results of Levene's Test, which examines whether the assumption of homogeneity of variances is satisfied before conducting the Independent Samples t-test.

Table 5: Levene's Test for Equality of Variances in Gender-based Perception Towards Bicycle Usage

Levene's Test for Equality of Variances		
F	Sig.	t
1.842	0.175	4.896

Interpretation

The Levene's Test shows an F-value of 1.842 with a significance value (p-value) of 0.175. Since the p-value (0.175) is greater than the significance level of 0.05,

the assumption of equal variances is satisfied. This indicates that the variance in perception scores between male and female respondents is statistically equal. Therefore, the standard Independent Samples t-test (Equal Variances Assumed) can be used to determine whether a significant difference exists between genders.

Table 6 presents the results of the Independent Samples t-test conducted to examine whether there is a statistically significant difference between male and female respondents in their perception towards bicycle usage.

Table 6: Independent Samples t-Test Results Showing Gender Differences in Perception Towards Bicycle Usage

t-test for Equality of Means				
df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% CI of Difference
748	0	0.24	0.049	0.143 – 0.337

Interpretation

The t-test results show a t-value of 4.896 with 748 degrees of freedom and a significance value (p-value) of 0.000 ($p < 0.05$). Since the p-value is less than 0.05, the result is statistically significant. The mean difference between male and female respondents is 0.24, indicating that male respondents have a higher perception score compared to female respondents. The 95% confidence interval (0.143 – 0.337) does not include zero, further confirming the presence of a significant difference. Therefore, the Null Hypothesis (H_{20}), which states that there is no significant difference between male and female respondents in their perception towards bicycles, is rejected. The Alternative Hypothesis (H_{21}) is accepted.

FINDINGS & CONCLUSION

Based on the statistical analysis conducted among 750 respondents, the following major findings were observed:

The study revealed a significant relationship between age and perception towards bicycle usage. Younger respondents (Below 25 years) showed the highest mean perception score (4.12), indicating a strong positive attitude towards bicycle usage. Perception

scores gradually decreased with increasing age. Respondents above 55 years recorded the lowest mean perception score (3.40). The ANOVA test confirmed that the differences in perception among age groups were statistically significant ($p < 0.05$). Therefore, age significantly influences perception towards bicycle usage. Male respondents recorded a higher mean perception score (3.92) compared to female respondents (3.68). The Independent Samples t-test showed a statistically significant difference between male and female respondents ($p < 0.05$). Gender plays a significant role in shaping perception towards bicycle usage. Male respondents demonstrate relatively more positive attitudes towards bicycles compared to female respondents. The overall perception towards bicycle usage among the respondents is moderately positive (Mean=3.80). Younger age groups and male respondents exhibit stronger inclination towards bicycle adoption. Safety, convenience, and infrastructure availability may influence female respondents' comparatively lower perception scores.

The present study examined the perception towards bicycle usage in the central districts of Tamil Nadu with special reference to age and gender differences among 750 respondents. The results clearly indicate that demographic factors significantly influence perception towards bicycles. The analysis revealed that younger respondents exhibit more favorable attitudes compared to older age groups. Additionally, a significant difference was found between male and female respondents, with males demonstrating comparatively higher positive perception towards bicycle usage. These findings emphasize the importance of adopting age-responsive and gender-sensitive policies to promote cycling. Strengthening infrastructure, addressing safety concerns, and enhancing awareness about environmental and health benefits can contribute to increased bicycle adoption. In conclusion, bicycles continue to be a sustainable, economical, and health-promoting mode of transport. With appropriate policy support and public awareness initiatives, cycling can

play a crucial role in achieving sustainable mobility and environmental conservation in the central districts of Tamil Nadu.

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An Empirical Study on Cognitive Biases Influencing Investment Decision-Making in Behavioural Finance

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ABSTRACT

This article reviews research articles on behavioural finance with the goal of analysing and describing the conduct of investors and how cognitive bias factors influence investors' decision-making and their effect on investments in financial markets. Some of the analytical and foundational work done over the years to establish behavioural finance as a respected and independent field of study is also discussed. Investor investment behaviour and investor investment patterns in the financial market are the subjects of this investigation. Using a descriptive research methodology, data on cognitive bias behavioural factors were gathered from 109 of 130 survey respondents. The survey used a form of stratified sampling. All variables, both nominal and on the Likert scale, were calculated using the quantitative aspect of the instrument. Journal articles, conference proceedings, working papers, and books were searched for behavioural finance-related keywords. The collection covered several decades, from beginning pieces to the most recent works (2023). The table details the various sources the writers consulted in order to compile their data. Investors investment decisions are analysed in terms of the extent of influence of cognitive bias elements using reliability test analysis, correlation analysis, and linear regression analysis.

KEYWORDS : *Behavioural finance, Cognitive psychology, Cognitive bias, Individual investors, Investment decisions.*

INTRODUCTION

Behavioural finance is a relatively new school of thought within finance that seeks to enhance classic ideas by incorporating human psychology and intuition. It is the study of human interpretation and the ways in which people take action in response to information through interpretation that constitutes the field of Behavioural Finance Linter (1998). Investors thought processes, emotions, and the extent to which they play a role in decision-making are all things that behavioural finance hopes to shed light on Ricciardi & Simon (2000). Investor psychology and its impact on financial decisions is the focus of behavioural finance. We understand that people are susceptible to the influence of their sentiments and emotions. Such decisions are typically inefficient and arbitrary, which can have

negative effects on the stock market. Behavioural finance is a subfield of financial economics that aims to explain the mental and emotional factors that play a role in the choices made by individual investors. Traditional financial theory holds that investors are rational actors who carefully consider all relevant data before making portfolio allocation judgements (Gopinath et al., 2019). Behavioural economists, on the other hand, argue that human cognitive and psychological shortcomings cast doubt on this premise.

Behavioural finance "studies how people actually behave in a financial setting," and it was established in the 1980s on the theoretical and experimental works of two psychologists, Daniel Kahneman and Amos Tversky, who contributed to psychology literature in the 1970s. More specifically, it's the study of how mental

processes have an impact on the economy, corporations, and financial markets (Nofsinger, 2001).

Behavioural finance is the study of how human behaviour and market events can be combined with insights from psychology and economics. Studies show that investors who rely on emotion instead of logic are more likely to make poor decisions, especially when it comes to active individual traders dealing in short-term investments (Pavithran et al., 2018). The context in which a choice is made has a greater impact on its outcome. Behavioural finance is a subfield of economics that tries to make sense of market inefficiencies by considering them from both a psychological and a financial standpoint. By incorporating psychological insights into economic decision-making, it seeks to improve conventional financial theory and correct common financial blunders made by individuals. The study's overarching goal is to learn how individual financial decisions influence markets. Investors' emotional and physical well-being affects their ability to make sound financial decisions, which might shift as their health does. There are many causes of bias, and these causes can be broken down into five main categories. When examining the outcomes and results of a business or sector, it is essential to understand and categorise different types of behavioural finance biases.

OBJECTIVES

To determine the Cognitive bias factors (Confirmation Bias, Hindsight Bias, Loss aversion, Illusion of Control, Mental Accounting) influencing investors investment decisions making behaviour.

METHODOLOGY

This study used a descriptive research approach and a web-based survey to collect data on cognitive

bias behavioural characteristics from 109 out of 130 participants. The survey used a form of stratified sampling. All variables, both nominal and on the Likert scale, were calculated using the quantitative aspect of the instrument. Each statement-related question had a 5-point Likert-style scale with possible responses ranging from 1 to 5. In order to apply more robust statistical procedures for hypothesis testing, the Likert style was selected because it may produce data with equal intervals. Multiple linear regression analysis is performed to determine how much each cognitive bias element affects investors investment decisions, and the Cronbach's alpha test and the Pearson correlation between cognitive behavioural biases and investment decision-making are also investigated.

RESULT AND DISCUSSION

This chapter presented the findings and analysed the data. Cronbach's alpha was first used to determine the degree of reliability. Second, this chapter examines the Pearson correlation between cognitive behavioural biases and investment decision-making, and third, this chapter examines the multiple linear regression analysis used to study cognitive behavioural bias and investment decision-making.

Cronbach's alpha reliability analysis

Cronbach's alpha	Cronbach's Alpha based on Standardized Items	No. of Items
0.777	0.771	6

The results of the reliability test indicated that the value of Cronbach Alpha coefficient is 0.777. Therefore, the scale is reliable as the value of Cronbach alpha is more significant than 0.70. So, the reliability test of Cronbach alpha value of the study is very reliable and good internal consistency.

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Confirmation bias	50.5413	90.028	0.473	0.469	0.757
Hindsight bias	51.0550	76.256	0.683	0.516	0.698
loss Aversion	50.2569	81.748	0.692	0.550	0.701
Illusion of Control	51.2936	101.543	0.305	0.156	0.791

Mental Accounting	50.8716	83.650	0.564	0.403	0.733
Investment Decision-making	50.9358	93.524	0.431	0.219	0.766

The above item total statistics table indicates the scale mean and variance when individual items are deleted, as well as the total correlation for corrected items, square multiple correlations, and Cronbach's Alpha value when an item is eliminated. The corrected item of the total correlation column value of confirmation bias, hindsight bias, loss aversion, illusion of control, mental accounting, and investment decision-making values are above >40.

Investors demographic profile

Demographic components	Frequency	Percent	Cumulative Percent
Gender			
Male	70	64.2	64.2
Female	39	35.8	35.8
Age			
Below 25 years	17	15.6	15.6
26 - 35 years	32	29.4	45.0
36 - 45 years	33	30.3	75.2
46 - 60 years	23	21.1	96.3
Above 60 years	4	3.7	100.0
Education			
Higher Secondary	13	11.9	11.9
Undergraduate	40	36.7	48.6
Postgraduate	50	45.9	94.5
Experience			
Less than 1 year	16	14.7	14.7
2 - 5 years	27	24.8	39.4
6 - 8 years	19	17.4	56.9
9 - 10 years	36	33.0	89.9
Above 10 years	11	10.1	100.0

The above table clearly shows that of the 109 respondents, 64.2% of the respondents are male, and remain 35.8% are female. 30.3% were under 36–45 years old, 29.4% were 26–35 years old, 21.1% were 46–60 years old, 15.6% were below 25 years old, 3.7% were above 60 years old. 45.9% of respondents are postgraduate, 36.7% undergraduate, and 11.9% of respondents are higher

secondary. 33.0% of the respondents are experienced in 9–10 years, 24.8% of the respondents are experienced in 2–5 years, 17.4% of the respondents are experienced in 6–8 years, 14.7% of the respondents are experienced in less than 1 year, and 10.1% of the respondents are experienced in above 10 years.

FINDINGS AND IMPLICATION OF THE STUDY

For Mitroiu and Oproiu (2014), emotional considerations trump logical ones when it comes to budgeting.

Finding the best investing method and anticipating price fluctuations based on historical data is a major source of anxiety for investors. If they are acting rationally, investors will select financial instruments that allow them to achieve their desired gain/loss profile". The ups and downs of the stock market's past can help us forecast its potential future. The authors Ahmad et al., (2017) According to the study of behavioural finance, investors' perception of their own rationality when making investment decisions is hampered by cognitive biases. Considering both logical and irrational variables is crucial because of the high levels of uncertainty and risk that accompany any investment possibility Slovic (1972) Various forms of human thought and action bias contribute to these dangers and uncertainties. The focus of these cognitive biases is on the actions and decisions of investors in the financial markets. In behavioural finance, human psychology and economic events are brought together through the concept of "behavioural biases." In the realm of behavioural finance, biases abound. Overconfidence, anchoring, the disposition effect, and the herding bias have all been taken into account here.

CONCLUSION

Cognitive-biased investors may provide profitable returns and provide desirable results. Friends are a common source of inspiration and information when it comes to making important financial choices, according to research by Talha et al. (2015) and the Chan & Kogan (2002). In order to ensure they are making sound

decisions, investors seek out validation from others. Investment decisions are serious business, therefore it's important to do them correctly. According to Bikas et al. (2013), investors decision-making in the financial markets is heavily influenced by psychological variables rather than knowledge of the market.

Behavioural finance is the study of how one's level of social and emotional awareness and tolerance influences the way they makes financial decisions. The study disproves the theory that cognitive psychological aspects influence decision-making by showing that investors do not always make rational investment choices. Specifically, the research found that investors are affected by confirmation bias, hindsight bias, loss aversion, the illusion of control, and mental accounting. Researchers found that no subset of investors benefited financially from falling prey to any of the tested cognitive biases.

Future research directions are suggested, such as expanding the scope of the study to include additional biases, assessing the impact of individual and institutional decisions on mutual funds, and investigating additional biases.

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Exploring Consumers' Awareness Level in Usage of Mobile Banking Services, with Special Reference to Karur City

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ABSTRACT

Customer perception refers to how well potential customers are aware of their problems, possible solutions, your products, and how one can solve their problems. Simply put, customers won't buy product if they don't know they have a problem. Bank investors and customers have to make decisions about each other. Increased awareness means increased customer preference for banking products. A study was undergone for Exploring Consumers' Awareness Level in Usage of Mobile Banking Services, With Special Reference to Karur City. A sample of 120 respondents were taken using convenient sampling method. The results show that the perceived Confidence, Awareness, Security used to indicate a clearly positive relationship with Customer recognition. On the other hand, the risk issues related to point of view a negative association with customer perceptions of mobile banking. Awareness of mobile banking also needs to be raised so that more people can take advantage of it.

KEYWORDS : *Mobile banking services, Awareness in mobile banking, Mobile enabled banking solutions, Usage of mobile banking services.*

INTRODUCTION

Customer awareness or perception refers to how well potential customers are aware of their problems, possible solutions, your products, and how you can solve their problems. Simply put, customers won't buy your product if they don't know they have a problem. Bank investors and customers have to make decisions about each other. Increased awareness means increased customer preference for banking products. PPC, content marketing, and drip email campaigns are all powerful ways to keep your bank's presence in the minds of potential customers looking for the right financial institution. The current study aimed at Exploring Consumers' Awareness Level in Usage of Mobile Banking Services, With Special Reference to Karur City.

STATEMENT OF THE PROBLEM

Customer perception refers to how well potential customers are aware of their problems, possible

solutions, your products, and how one can solve their problems. Increased awareness means increased customer preference for banking products. The current study aimed at Exploring Consumers' Awareness Level in Usage of Mobile Banking Services, With Special Reference to Karur City. For the data collection, both primary sources and secondary sources were used. Questionnaire was used to collect data from 120 respondents taken out as sample using convenient sampling technique. The study has further scope to individually analyze the factors affecting usage of Mobile Banking Services by rural populations too.

RESEARCH METHODOLOGY & OBJECTIVES OF THE STUDY

The study used data from both primary and secondary sources. The primary data were collected through structured questionnaires. The secondary data were collected from websites, books and journals. Sample size of the study constitutes 120 respondents covering

customers using mobile banking services in Karur city. Non Random sampling method was adopted and requested the respondents to fill the questionnaire. Convenient sampling was adopted to draw out samples. The specific tools also be employed for the study are: Percentage Analysis, Regression Analysis, Chi-square and Correlation. Following were the undertaken objectives for the study.

- ❖ To understand the socio economic profile of the respondents.
- ❖ To explore the level of awareness of mobile banking services.
- ❖ To analyze the factors influencing awareness level of mobile banking services.

HYPOTHESIS OF THE STUDY

Following hypothesis is to be tested in the study.

H0: There is no significant relationship between selected socio-economic factors and awareness of accessing mobile banking services.

ANALYSIS OF DATA SOCIO-ECONOMIC PROFILE

Factor	Components	No. of Respondents	Percentage (%)
Gender	Male	68	56.67%
	Female	52	43.33%
Age group	15-30	27	22.50%
	31-45	56	46.67%
	46-60	29	24.17%
	Above 60	8	6.67%
Level of Education	School level	12	10.00%
	UG	55	45.83%
	PG	27	22.50%
	Diploma	21	17.50%
	Professional degree	3	2.50%
Occupation	Others	2	1.67%
	Student	17	14.17%
	Salaried	65	54.17%
	Business	21	17.50%
	Profession	3	2.50%
	Homemaker	8	6.67%

Occupation	Retired	4	3.33%
	Others	2	1.67%
Annual Income	Below Rs.150000	21	17.50%
	Rs.150001 to Rs.200000	53	44.17%
	Rs.200001 to Rs.300000	29	24.17%
	Above Rs.300000	17	14.17%
Family Size	Small (2-4)	84	70.00%
	Medium (5-7)	34	28.33%
	Large (8 and Above)	2	1.67%
Frequency of Mobile Banking Services	Daily	31	25.83%
	3-5 times in a week	54	45.00%
	1-2 times in a week	31	25.83%
	Rarely	4	3.33%
Bank Account in	Nationalized bank	83	69.17%
	Private bank	33	27.50%
	Foreign bank	4	3.33%

Source: Primary Data

The above table shows the socio-economic profile of the respondents. 56.67% of the respondents are Male. 46.67% of the respondents belong to age group of 31-45. 45.83% respondents are UG graduates. 54.17% of the respondents are salaried persons. Annual income is Rs.1.5 lakhs to Rs.2 lakhs for 44.17% of respondents. 70% of the respondents belong to small family (2-4). 45% of the respondents uses mobile banking services 3-5 times in a week. 69.17% of the respondents maintain bank account in nationalized bank.

REGRESSION ANALYSIS

Factors	Customer awareness			Decision
	Beta value	t-value	P-Value	
Confidentiality	0.54	34.712	0	H0 - Hypothesis rejected
Knowledge	0.471	33.514	0	H0 - Hypothesis rejected

Ease of use	0.564	34.313	0	H0 - Hypothesis rejected
Risk associated	-0.431	11.799	0	H0 - Hypothesis rejected
Problems associated	-0.347	12.998	0	H0 - Hypothesis rejected

Source: Primary Data

With the help of the primary data, the factors influencing customers' awareness of mobile banking services are analyzed with regression. Confidentiality, Knowledge and Ease of use have positive regression whereas Risk associated and Problems associated have negative regression.

CHI-SQUARE ANALYSIS

(i) There is no significant relationship between selected socio-economic factors and awareness of accessing mobile banking services.

Socio-economic factors	Chi-square value	Table value	Significant /Non-Significant
Gender	3.755	5.99	Significant
Age group	2.756	12.59	Significant
Level of Education	4.226	18.31	Significant
Occupation	4.174	21.03	Significant
Annual Income	25.236	12.59	Non-Significant

Source: Primary Data

Selected socio-economic factors and awareness of accessing mobile banking services are compared. If the chi-square value is greater than table value at 5% significance level, the hypothesis is rejected. If the chi-square value is lesser than table value at 5% significance level, the hypothesis is accepted. In the above table, Factors: Gender, Age group, Level of Education and Occupation are significant i.e. do not have association with awareness of accessing mobile banking services whereas Factor: Annual Income has association with awareness of accessing mobile banking services.

CORRELATION ANALYSIS

The correlation between the Expectations of Users of mobile banking services and Awareness of Users of mobile banking services. The correlation value arrives at 0.0713 which is the positive value, but it is a weak correlation. It interprets that there is a direct relationship between the Expectations of Users of fitness centres and Awareness of Users of fitness centres to the extreme least degree.

SIGNIFICANT FINDINGS

56.67% of the respondents are Male. 46.67% of the respondents belong to age group of 31-45. 45.83% respondents are UG graduates. 54.17% of the respondents are salaried persons. Annual income is Rs.1.5 lakhs to Rs.2 lakhs for 44.17% of respondents. 70% of the respondents belong to small family (2-4). 45% of the respondents uses mobile banking services 3-5 times in a week. 69.17% of the respondents maintain bank account in nationalized bank. Confidentiality, Knowledge and Ease of use have positive regression whereas Risk associated and Problems associated have negative regression. Factors: Gender, Age group, Level of Education and Occupation are significant i.e. do not have association with awareness of accessing mobile banking services whereas Factor: Annual Income has association with awareness of accessing mobile banking services.

SUGGESTIONS

It highly prescribes to moving forward the quality of the administrations to extend the customer versatile keeping money which implies unwavering quality measurement is critical to bolster benefit quality. It recommends broadening the information of portable managing an account to be able to get to the administrations, so they don't waver to utilize the administrations. It suggests to make strides quality of the benefit, so that the clients of versatile managing an account might not confront challenges in utilization. Bank ought to make strides more security towards mobile banking. Other structure ought to moreover bolster to versatile managing an account, it'll be more successful for portable managing an account. Indian individuals moreover need to know the different utilizations of versatile gadgets to make strides the computerized education. The bank ought to

make mindfulness among the individuals approximately portable keeping money and its utilizations.

CONCLUSION

Mobile banking is easy to use and its mobility allows users to use it anytime, anywhere. Mobile banking is growing in popularity in India thanks to digital payment systems. Still, some account holders are unaware of and avoid mobile banking. In India, people still believe that traditional banking transactions are the safest and best practice. Mobile banking is most frequently used by young people and working people. Awareness of mobile banking also needs to be raised so that more people can take advantage of it. The results show that the perceived Confidence, Awareness, Security used to indicate a clearly positive relationship with Customer recognition. On the other hand, the risk issues related to point of view a negative association with customer perceptions of mobile banking.

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Sugarcane Production of the State Tamilnadu Forecasting using Fuzzy Time Series

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ABSTRACT

Forecasting plays a pivotal role in decision-making across business, governmental planning, and meteorology by enabling proactive mitigation of damages and losses. While traditional models excel with numerical data, they falter amid linguistic or imprecise historical records; recent advances leverage fuzzy time series to address such challenges. This study proposes a novel fuzzy time series forecasting method employing average interval lengths to predict sugarcane production in Tamil Nadu, India. Applied to historical production data, the model demonstrates superior accuracy and efficiency compared to conventional approaches, offering enhanced planning capabilities for agricultural stakeholders.

KEYWORDS : *Fuzzy time series, Average interval length, Agricultural stakeholders.*

INTRODUCTION

Forecasting future sugarcane production levels in Tamil Nadu is essential for comprehending temporal dynamics and facilitating informed planning. Without delineating projected production scales and their underlying patterns through fuzzy time series methods, effective strategies to address production fluctuations remain unattainable. Additionally, decision making is a complex process, especially when it involves predicting the future. The decision is based on the accuracy of the prediction. Clearly, prediction plays an important role in our daily life. Perfect forecasting accuracy may remain unattainable; nonetheless, efforts focus on minimizing prediction errors through refined fuzzy time series techniques. Many researchers have proposed different methods and models to solve the prediction problem. One model is always to use univariate and multivariate time series analysis. However, traditional times are widely used, but necessary conditions must be met. For example, for autoregressive and integrated moving average models, at least 50 to 100 observations should be used.

Time series analysis finds application across diverse domains, including blood pressure estimation and pollution monitoring. Although extensively examined in statistics and neural networks, traditional regression models often underperform in real-world scenarios characterized by data vagueness or randomness. In such cases, where probability theory proves inadequate, fuzzy set theory offers superior results by accommodating imprecise variables—expressed not as fixed points but as intervals or linguistic terms.

Fuzzy Logic

Fuzzy logic constitutes a form of multi-valued logic employed in various scientific and engineering applications. Introduced in 1965 by Lotfi Zadeh, an Iranian-American researcher at the University of California, Berkeley, it provides a mathematical framework for handling imprecise or uncertain information through membership functions ranging from 0 to 1. Although initially overlooked, its practical utility emerged in 1974 with applications in electrical control systems, subsequently expanding to fuzzy logic chips integrated into consumer products like cameras

and appliances. The rationale for its development stems from the need to process "fuzzy" human-like reasoning in computing environments, which traditionally handle only precise binary data, thereby bridging the gap between rigid algorithms and ambiguous real-world scenarios.

This challenge has spurred advancements in technical expertise and artificial intelligence systems. Fuzzy logic provides the theoretical foundation for developing such systems, with fuzzy set theory yielding substantial benefits across multiple disciplines by approximating scientific knowledge that reflects the inherent imprecision of human cognition. It emulates human reasoning processes—employing linguistic terms, decisions, and commonsense inference—rather than rigid binary logic, thereby enhancing time series analysis through improved handling of imprecise data and superior forecasting performance relative to conventional models.

A time series constitutes a sequence of observations recorded at successive, fixed time intervals. It finds extensive application in business domains, such as stock prices and interest rates, as well as environmental monitoring, including wind speed, temperature, pressure, humidity, and precipitation. Additional uses encompass earthquake frequency, radio signal analysis, and industrial production metrics.

Fuzzy Time Series

Fuzzy time series is another strategy to solve the forecasting problem where historical data is the main source of information. Fuzzy time series is based on the work of Zadeh, Song and Chissom who first proposed a forecasting model called fuzzy time series, whose analysis provides the dynamic process theoretical framework with special modeling ability. The primary distinction between conventional time series and fuzzy time series lies in their observations: the former consist of crisp real numbers, whereas the latter comprise fuzzy sets.

Mathematically, the fuzzy time series models are described as follows:

- Let $U = \{u_1, u_2, \dots, u_n\}$ be a universe of discourse. A fuzzy set A of U is defined

$A = [f_A(u_1)/u_1] + [f_A(u_2)/u_2] + \dots + [f_A(u_n)/u_n]$ where $f_A: U \rightarrow [0,1]$ represents the membership function mapping each element to its degree of membership. .

- If there exists a fuzzy relationship $R(t-1, t)$, such that $F(t) = F(t-1) \circ R(t-1, t)$, where $\circ$ denotes a chosen composition operator, then $F(t)$ is said to be generated by $F(t-1)$ where $\circ$ is an arithmetic operator, then $F(t)$ is said to be caused by $F(t-1)$ and this dependence is written as $F(t-1) \rightarrow F(t)$.
 - Suppose $F(t)$ depends solely on $F(t-1)$, expressed as $F(t) = F(t-1) \circ R(t, t-1)$. If the fuzzy relation $R(t-1, t)$ remains constant across all t (i.e., independent of time), then $F(t)$ constitutes a time-invariant fuzzy time series; otherwise, it is time-variant.
 - Suppose $F(t-1) = A_i$ and $F(t) = A_j$, a fuzzy logical relationship is then defined as $A_i \rightarrow A_j$ where A_i and A_j constitute the current state (left-hand side) and next state (right-hand side), respectively.

METHODOLOGY

Sample of the study

In this study, we have focused on sugarcane production of the state TamilNadu. The dataset taken from the year 2010-2023. Based on the data, analysis has been carried out using fuzzy time series forecasting.

Fuzzy time series algorithm:

The proposed algorithm of the fuzzy time series model is

1. Accumulate the historical data
2. The universe of discourse U is defined by:
 $U = [D_{\min} - D_1, D_{\max} + D_2]$.
 Determine $D_{\max}$ and $D_{\min}$ from the historical data D_h . Select small positive values D_1 and D_2 to adjust the bounds for convenient partitioning into multiples of hundreds, thousands, etc.
3. Obtain the suitable length of interval L .
4. Map range values with base, i.e. 0.1 to 1000 mapped to the values 0.1-100
5. Calculate the difference which are absolute between the values D_{h-1} and D_h and also find the average of first differences and fix the length values.

6. Find the range of the length values which is mapped to the base values.

7. The length of appropriate base values is denoted as L . The number of intervals m , is calculated using,

$$m = \frac{D_{max} + D_2 - D_{min} + D_1}{I}$$

8. U denoted for the length intervals, it is partitioned in the equal length intervals, $u_1 = [d_1, d_2]$, $u_2 = [d_2, d_3]$, ... $u_m = [d_m, d_{m+1}]$.

9. The fuzzy set defined as, $A = [fA(u_1)/u_1] + [fA(u_2)/u_2] + \dots + [fA(u_n)/u_n]$

10. In this study we are using the triangular membership function. It is defined as follows:

$$A = \sum_{j=1}^n \frac{\mu_{ij}}{u_{ij}}$$

μ_{ij} is the membership degree of u_i belonging to A_i

11. Based on Chen(1996) heuristic rules are defined as follows

If the function $F(t) = A_i$ and the group $(A_i) = \alpha$. The forecast point is m_i , the midpoint of length of the interval is u_i . The midpoint is found using the formula Forecasting – value _{i} = m .

The fuzzy set value is defined as A_i , the set value A_i is denoted as one to one function, then $A_i \rightarrow A_{r1}$, then the forecast value is denoted as m_{r1} , the midpoint is u_{r1} and Forecast – value _{i} = m_{r1} .

The set may be defined for k variables, the one to one function may have denoted as $A_i \rightarrow A_{r1}, A_{r2}, \dots, A_{rk}$, the forecast values may be in the form of $m_{r1}, m_{r2}, \dots, m_{rk}$, the mid-points are $u_{r1}, u_{r2}, \dots, u_{rk}$, then Forecasting – value _{i} = $\frac{\sum_{k=1}^k m_{rk}}{k}$

12. The final step of the analysis may define by the Mean Square Error (MSE) which is used to result the models which we used for this analysis efficient and effective.

$$MSE = \sum_{i=1}^n \frac{(Forecast\ data - Actual\ data)^2}{n}$$

Computational Results and Discussion

Forecast the Sugarcane production of Tamil Nadu state:

Table:1. Sugarcane production in the state of Tamil Nadu

Year	Production (in Tonnes)	Year	Production (in Tonnes)
2010	683.57	2017	523.25
2011	563.38	2018	423.1
2012	672.5	2019	583.25
2013	590.52	2020	683.14
2014	782.56	2021	714.25
2015	723.15	2022	458.23
2016	662.34	2023	628.3

In this dataset, $D_{min} = 400$, $D_{max} = 720$, and $U = [400, 840]$, the interval $M = 10$, then,

$u_1 = [400, 440]$, $u_2 = [440, 480]$, $u_3 = [480, 520]$, $u_4 = [520, 560]$, $u_5 = [560, 600]$, $u_6 = [600, 640]$, $u_7 = [640, 680]$, $u_8 = [680, 720]$, $u_9 = [720, 760]$, $u_{10} = [760, 800]$, $u_{11} = [800, 840]$

The linguistic values were fuzzified and given in the Table 2.

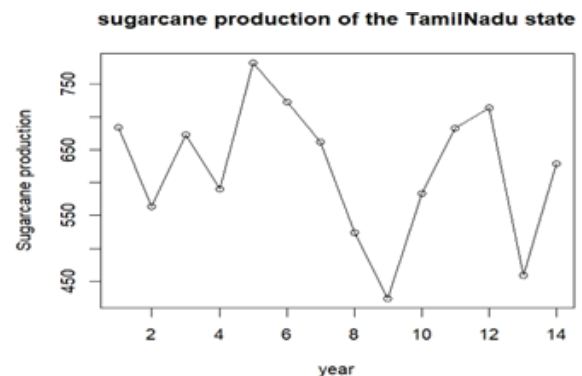


Fig. 1. Sugar production of Tamil Nadu state

Table 2. Linguistic values and fuzzified values

Fuzzified values	Linguistic values
A1	Very Very Few
A2	Very Few
A3	Few
A4	Either Few nor moderate
A5	Moderate
A6	Medium
A7	High

A8	Higher
A9	Highest
A10	Very highest

The fuzzy set groups were formed for the above linguistic values based on the range and base values in the Table.3.

Table 3. Fuzzy sets for Fuzzified values

Fuzzified values	Fuzzy set values
A ₁	$\frac{0.5}{u_1} + \frac{0}{u_2} + \frac{0}{u_3} + \frac{0}{u_4} + \frac{0}{u_5} + \frac{0}{u_6} + \frac{0}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₂	$\frac{1}{u_1} + \frac{0.5}{u_2} + \frac{0}{u_3} + \frac{0}{u_4} + \frac{0}{u_5} + \frac{0}{u_6} + \frac{0}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₃	$\frac{0.5}{u_1} + \frac{1}{u_2} + \frac{0.5}{u_3} + \frac{0}{u_4} + \frac{0}{u_5} + \frac{0}{u_6} + \frac{0}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₄	$\frac{0}{u_1} + \frac{0.5}{u_2} + \frac{1}{u_3} + \frac{0.5}{u_4} + \frac{0}{u_5} + \frac{0}{u_6} + \frac{0}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₅	$\frac{0}{u_1} + \frac{0}{u_2} + \frac{0.5}{u_3} + \frac{1}{u_4} + \frac{0.5}{u_5} + \frac{0}{u_6} + \frac{0}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₆	$\frac{0}{u_1} + \frac{0}{u_2} + \frac{0}{u_3} + \frac{0.5}{u_4} + \frac{1}{u_5} + \frac{0.5}{u_6} + \frac{0}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₇	$\frac{0.5}{u_1} + \frac{0}{u_2} + \frac{0}{u_3} + \frac{0}{u_4} + \frac{0.5}{u_5} + \frac{1}{u_6} + \frac{0.5}{u_7} + \frac{0}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₈	$\frac{0.5}{u_1} + \frac{0}{u_2} + \frac{0}{u_3} + \frac{0}{u_4} + \frac{0}{u_5} + \frac{0.5}{u_6} + \frac{1}{u_7} + \frac{0.5}{u_8} + \frac{0}{u_9} + \frac{0}{u_{10}}$
A ₉	$\frac{0.5}{u_1} + \frac{0}{u_2} + \frac{0}{u_3} + \frac{0}{u_4} + \frac{0}{u_5} + \frac{0}{u_6} + \frac{0.5}{u_7} + \frac{1}{u_8} + \frac{0.5}{u_9} + \frac{0}{u_{10}}$
A ₁₀	$\frac{0.5}{u_1} + \frac{0}{u_2} + \frac{0}{u_3} + \frac{0}{u_4} + \frac{0}{u_5} + \frac{0}{u_6} + \frac{0}{u_7} + \frac{0.5}{u_8} + \frac{1}{u_9} + \frac{0.5}{u_{10}}$

Based on the Table. 3. the fuzzy relationship and the fuzzy relationship groups are formed. Then all forecasted intervals and errors are computed and it shown in the Table. 4.

Table. 4. Fuzzy forecasted values and errors

Year	Actual values	Predicted values	Forecasting error
2010	683.57	662.0651	21.5049
2011	563.38	655.7204	-92.3404
2012	672.5	649.3756	23.1244
2013	590.52	643.0309	-52.5109
2014	782.56	636.6862	145.8738
2015	723.15	630.3414	92.8086
2016	662.34	623.9967	38.3433
2017	523.25	617.6519	-94.4019
2018	423.1	611.3072	-188.2072
2019	583.25	604.9624	-21.7124
2020	683.14	598.6177	84.5223
2021	714.25	592.2729	121.9771
2022	458.23	585.9282	-127.6982

2023	628.3	579.5834	48.7166

From Table.4. we are resulted that all forecasted values are near to the actual values, then it is resulted that the model gives us the best forecasting

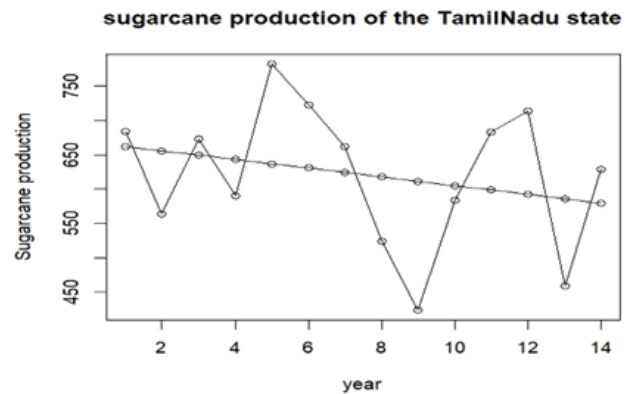


Fig. 2. Forecasted observations

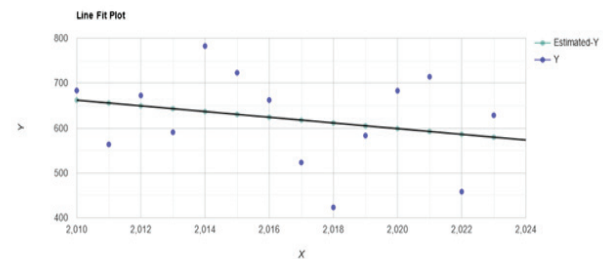


Fig. 3. Residuals for the forecasted observations

Even though, the above tables and figures may result the model gives us the best forecasting values. The performance must be evaluated for the presented model using Mean square error and Forecasting error. The mean square error for the model is 0.005 and the forecasting error is 0.3.

CONCLUSION

This study applies fuzzy time series forecasting techniques to determine optimal average lengths of intervals. The model employed for the real life application data sugarcane production of Tamilnadu state from the year 2010-2023. The analysis resulted with the efficiency of the proposed model with the accuracy. This study resulted with the fuzzy time series which uses the linguistic values which augments the supremacy of decision making systems which gives accuracy of results than the older or traditional models. The study concludes that fuzzy time series techniques

yield more efficient and effective results compared to traditional methods.

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Forecasting Models for Common Human Disease – A Conceptual Study

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ABSTRACT

Understanding disease dynamics and forecasting health-related outcomes require analytical methods capable of capturing temporal dependencies inherent in medical data. Diseases, whether primary or secondary, impose substantial physical, psychological, and economic burdens, necessitating robust tools for analyzing trends and predicting future patterns. Time series modelling provides such a framework by treating health indicators as stochastic processes whose future values depend on past observations. This study highlights the relevance of classical and advanced time series models—including AR, MA, ARMA, ARIMA, SARIMA, and their nonlinear extensions—for modelling and forecasting disease-related data. Emphasis is placed on the Box–Jenkins methodology, which systematically integrates model identification using ACF and PACF, parameter estimation through maximum likelihood, and diagnostic checking via residual analysis and the Ljung–Box statistic. The paper further discusses the significance of stationarity, autocorrelation structures, and model parsimony in achieving accurate predictions. In addition, the role of multivariate ARIMA and transfer function models is examined for situations where exogenous variables influence health outcomes. By synthesizing methodological foundations with practical considerations, this study provides a comprehensive overview of time series techniques suitable for analyzing medical and epidemiological phenomena, thereby contributing to improved forecasting and informed public-health decision-making.

KEYWORDS : *ARIMA, SARIMA, ACF, PACF, Stationarity, Autocorrelation structures.*

INTRODUCTION

In humans, the term disease is frequently applied in a broad sense to encompass any condition that induces pain, dysfunction, distress, social difficulties, or death in the affected individual. In this expansive interpretation, it may incorporate injuries, disabilities, disorders, syndromes, infections, isolated symptoms, deviant behaviors, and atypical structural or functional variations, although these are sometimes categorized separately in other contexts. Diseases impact individuals not only physically but also psychologically, as acquiring and managing such conditions can profoundly reshape the affected person's worldview. A primary disease is a disease that is due to a root cause of illness, as different to secondary disease, which is a

complication that is caused by the primary disease. A secondary disease is a disease that is a complication of a prior, causal disease, which is referred to as the primary disease or simply the root cause. A medical condition is defined broadly to encompass all diseases, lesions, disorders, and non-pathologic states that typically warrant medical intervention, such as pregnancy or childbirth. Although the term generally includes mental illnesses, it is sometimes employed more narrowly to denote physical injuries alone. The Diagnostic and Statistical Manual of Mental Disorders employs "general medical condition" to designate all diseases, illnesses, and injuries excluding mental disorders. Only select diseases, such as influenza, are contagious and deemed infectious; the microorganisms responsible

such as bacteria, viruses, protozoa, and fungi are termed pathogens, with transmission occurring via insect bites, contaminated food or water, and other vectors.

Medical treatments constitute interventions aimed at alleviating or resolving an illness or other health issue; in medical parlance, the term is synonymous with therapy. Among psychologists, it often specifically denotes psychotherapy. Common modalities encompass medications, surgery, medical devices, and self-care practices, which may be delivered through formal healthcare systems or informally by patients or family members. Disease burden quantifies the impact of health conditions via metrics such as economic costs, mortality, morbidity, or related indicators. The present article examines various forecasting models in this context.

Basic Concepts of Time Series Modelling

A time series comprises a sequence of data points recorded sequentially over successive time intervals, typically forming an ordered set of observations y_t where t denotes the time index. Each y_t is treated as a realization of a random variable, with measurements arranged in strict chronological order to preserve temporal dependencies. A univariate time series involves observations of a single variable, while discrete series commonly feature equally spaced intervals such as hourly, daily, weekly, monthly, or annual frequencies.

Time Series and Stochastic Process

Time series exhibit inherently non-deterministic behavior, rendering future values inherently unpredictable with absolute certainty. Such series are typically modeled as realizations from an underlying probability distribution that characterizes the joint behavior of the associated random variables y_t . The mathematical framework encapsulating this probabilistic structure is known as a stochastic process, with the observed sequence of data points constituting a single realization or sample path generated by that process.

Time Series Forecasting Using Stochastic Models

In general models for time series data can have many form and represent different stochastic processes. There are two widely used linear time series models in literature, viz. Autoregressive (AR) and Moving Average (MA) models. Combining these

two, the Autoregressive Moving Average (ARMA) and Autoregressive Integrated Moving Average (ARIMA) models have been proposed in literature. The Autoregressive Fractionally Integrated Moving Average (ARFIMA) model generalizes ARMA and ARIMA models. For seasonal time series forecasting, a variation of ARIMA, viz. the Seasonal Autoregressive Integrated Moving Average (SARIMA) model is used. ARIMA model and its different variations are based on the famous Box-Jenkins principle and so these are also broadly known as the Box-Jenkins models. A Linear model has drawn a lot interest because of their relative simplicity in expertise and implementation. Some of them are the well-known Autoregressive Conditional Heteroskedasticity (ARCH) version and its variations like Generalized ARCH and Exponential etc., the Threshold Autoregressive (TAR) model, the Non-linear Autoregressive model, the Nonlinear Moving Average model, etc.

Autocorrelation and Partial Autocorrelation Functions (ACF and PACF)

To decide a proper model for a given time series data, it's far important to perform the ACF and PACF analysis. These statistical measures replicate how the observations in a time series are associated with every other. For forecasting purpose it is frequently useful to devise the ACF and PACF towards consecutive time lags. These plots help in the order of AR and MA terms.

Seasonal Autoregressive Integrated Moving Average (SARIMA) Models

SARIMA models extend ARIMA by incorporating both non-seasonal and seasonal elements, enabling robust modeling of time series exhibiting periodic patterns at fixed intervals. Seasonality manifests as recurring, systematic variations that repeat every S periods, where S represents the seasonal cycle length (e.g., 12 for monthly data). In SARIMA notation $(p,d,q)(P,D,Q)_S$, seasonal autoregressive (SAR, order P) and seasonal moving average (SMA, order Q) terms operate at lags that are multiples of S , thereby accounting for dependencies in observations and residuals across seasonal horizons. Seasonal differencing (D), achieved by subtracting each value from its counterpart S periods prior, eliminates these patterns, rendering the series stationary and facilitating reliable forecasting.

Autocorrelation and partial autocorrelation plots

Sample autocorrelation (ACF) and partial autocorrelation (PACF) plots are examined by comparing their empirical patterns to theoretical behaviors expected under candidate model orders. For an AR(1) process, the sample ACF should exhibit an exponentially decaying pattern, whereas higher-order AR(p) processes typically display a combination of exponential decay and damped sinusoidal components. To identify the order p in higher-order AR processes, the sample PACF is inspected, as the partial autocorrelations theoretically become zero at lag $p+1$ and beyond; significant departures from zero are assessed via a 95% confidence interval on the PACF plot, approximated as $\pm 1.96/\sqrt{N}$ where N is the sample size. Conversely, for a pure MA(q) process, the sample ACF cuts off to zero at lag $q+1$ and higher, while the PACF decays gradually.

Box–Jenkins model diagnostics

Estimating the parameters of Box–Jenkins models involves numerically solving nonlinear equations, a task typically handled by modern statistical software due to its computational complexity. The primary estimation methods are nonlinear least squares and maximum likelihood estimation, with the latter being generally preferred because of its statistical efficiency and desirable asymptotic properties. The Box–Jenkins methodology comprises three iterative stages: model identification, parameter estimation, and model diagnostic checking. During estimation, the coefficients of the autoregressive (AR), differencing (I), and moving average (MA) components identified in the previous step are fitted to the observed time series data. This fitting process seeks to find parameter values that best represent the underlying data-generating process. Model diagnostics involve evaluating whether the residuals from the fitted model behave as white noise, meaning they should exhibit independence, constant mean, and stable variance over time. Techniques for assessing residuals include plotting residuals, examining their autocorrelation function, and performing statistical tests such as the Ljung–Box test. If the residuals violate these assumptions, the model may need to be refined by returning to the identification phase to select a more appropriate model, and the estimation and diagnostic checking steps are repeated until an adequate model

fit is achieved. This iterative process ensures the final Box–Jenkins model is both parsimonious and captures the key dynamics in the time series data effectively. Detailed likelihood equations and mathematical formalisms associated with Box–Jenkins models can be found in Brockwell and Davis (1991).

Autoregressive–moving-average model

In the statistical analysis of time series autoregressive autoregressive–moving-average model (ARMA) provide a parsimonious description of a (weakly) stationary stochastic process in terms of polynomials, one for the autoregression (AR) and the second for the moving average (MA). The widespread ARMA version turned into defined in Peter Whittle (1951), Hypothesis testing in time series analysis, and it turned into popularized inside the book by means of George E. P. Box and Gwilym Jenkins (1970). Given a time series of X_t , the ARMA model is a tool for knowledge and, possibly, predicting future values in this series. The AR includes the variable on its own lagged values. The MA component includes modeling the error time period as a linear aggregate of mistakes terms occurring contemporaneously and at various times inside the beyond. The model is normally referred to as the ARMA (p,q) model in which p is the order of the AR part and q is the order of the moving average. After describing various time series models, the next issue to our concern is how to select an appropriate model that can produce exact forecast based on a explanation of historical pattern in the data and how to determine the optimal model orders. George Box and Gwilym Jenkins developed a practical approach to build ARIMA model, which best fit to a given time series and also satisfy the stinginess principle. Their concept has fundamental importance on the area of time series analysis and forecasting.

Time-series analysis

The statistical methods commonly used often assume that observed data are realizations of independent random variables. However, when data are recorded continuously over time—such as in physiological or physical processes—successive observations are typically influenced by previous ones. Box and Jenkins (1979) were the first to develop practical methods for constructing time series models that account

for such dependencies. Their work, later discussed by Helfenstein and Imhoff et al. (1991), introduced systematic procedures for identifying, estimating, and diagnosing these models, now widely known as the Box-Jenkins approach and Autoregressive Integrated Moving Average (ARIMA) models. Goldberger et al. (2000), advent of powerful methods for storing and disseminating vast amounts of health information has lead many researchers to consider a major breakthrough is eminent at both the basic levels and clinical levels of investigation. Although advanced computational tools assist in the selection process, researchers still face the challenge of identifying the most suitable analytical technique. The choice of an appropriate method for analyzing heterogeneous multivariate physiological time series remains highly debated. Some researchers argue that physiological time series exhibit stochastic behavior and therefore require nonlinear quantitative approaches, as discussed by Saalasti (2003).

Box-Jenkins Models

The autoregressive integrated moving average (ARIMA) model, introduced by Box and Jenkins in 1970, can be applied to a single time series or to multiple input series with relatively little need for complex preprocessing, unlike many alternative methods. ARIMA models are generally regarded as superior to traditional time series and multivariate regression models, because in the latter the residual errors are often correlated with their own lagged values, violating the standard regression assumption that disturbances are uncorrelated with one another. Early work for this thesis involved developing multivariate regression models, but their goodness-of-fit and error characteristics were unsatisfactory compared with the performance achieved using subsequent ARIMA models.

ARIMA models are characterized by three parameters. The autoregressive component, $AR(p)$, incorporates past observations and thus provides a memory of previous events; the integrated component, $I(d)$, differences the series to achieve stationarity and thereby facilitates forecasting; and the moving average component, $MA(q)$, models past forecast errors and controls for autocorrelation. As more historical data become available, the model typically yields more accurate forecasts, because its parameter estimates are informed

by a longer learning history. This class of models is often referred to as the Box-Jenkins model.

The basic univariate ARIMA model focuses on a single time series and is sometimes described as a purely data-driven model. Its primary aim is to characterize the series through the structure of its residual correlations and to generate forecasts from the fitted model, rather than to explain the influence of external predictors. In most applications, a univariate time series reflects the empirical regularity that observations closer in time tend to be more strongly related to each other than to observations that are farther apart, with the model capturing this temporal dependence in a single variable framework

Multivariate ARIMA Model

Multivariate time series analysis entails examining the effects of an event on a dependent variable or time series model. In the alternative formulation, these methods investigate the interrelationships between an exogenous series and an endogenous series, potentially within a dynamic system wherein the input series influences the output series. Transfer function models are employed to evaluate such relationships, involving cross-correlation between the input and response series via a transfer function (TF). These models are frequently termed causal models, wherein variations in the exogenous or independent variable are invoked to account for fluctuations in the endogenous or dependent variable series, as elaborated by Yaffee et al. (2000).

ARIMA Modeling: Linear Transfer Function Approach

The nature of the data under investigation ultimately determines which model specification and parameterization are appropriate for forecasting. In some applications, a simple input-output transfer function, or intervention-type model, is inadequate because complex feedback mechanisms and leading-lagging relationships may exist among the variables. In other contexts, several distinct models may provide comparably good fits to the data, and, as noted by Wei (1990), Yaffee (2000), Box et al. (1973), and Montgomery et al. (2008), the responsibility then rests with the researcher to select the most suitable model in light of prior substantive knowledge and familiarity with the series.

A series is considered stationary if the joint probability distribution of any pair of observations, for example, y_t and y_{t+k} , will be the same for any two time periods t and $t+k$. Under stationarity, the variance is constant and does not depend on t . Insight into the joint distribution, and hence the structure of the series, can be obtained by plotting a scatter diagram of all data pairs separated by a fixed lag k . The covariance between an observation and its value at another time point y_{t+k} and is formally defined, following Montgomery (2008), in terms of this lagged covariance structure

$$\gamma_k = \text{cov}(y_t, y_{t+k}) = E[(y_t - \mu)(y_{t+k} - \mu)]$$

and $\mu_y = E(y) = \int_{-\infty}^{\infty} yf(y)dy$ is a time series with constant mean.

Partial autocorrelation function

The partial autocorrelation function (PACF) is a central diagnostic tool in Box–Jenkins time series analysis. When used together with the autocorrelation function (ACF), it helps distinguish between lower-order and higher-order autoregressive AR(p) processes. Conceptually, the PACF is analogous to a partial correlation: at a given lag, it adjusts for the autocorrelation present at all intermediate lags, thereby isolating the direct relationship at that specific lag. In effect, it removes the influence of intervening autocorrelations and retains only the correlation between the current observation and the observation at lag k .

Stationary R- Squared

The stationary R-squared incorporates a penalty for model complexity, wherein the adjustment factor accounts for the number of parameters estimated in the model, thereby providing a more reliable measure of goodness-of-fit, particularly when evaluating models with various inputs and it is defined as

$$SR^2 = \left(1 - \frac{k}{T}\right)r^2$$

Where, T denotes the number of observations and k the number of parameters. When the model parameters are appropriately specified, the residuals should comprise solely white noise, or equivalently, unstructured random variation. Moreover, the model that maximizes the stationary R-squared value also minimizes the root mean squared error (RMSE). The stationary R-squared

estimates the proportion of the total variation in the series explained by the model and is thus preferable to the ordinary R-squared in the presence of trends. In this thesis, the stationary R-squared is employed to identify the best-fitting forecasting model.

Portmanteau test for auto-correlation: Ljung-Box Statistic

The Ljung-Box statistic, introduced by Ljung and Box (1978), is a Portmanteau test for detecting autocorrelation in time series residuals up to a specified lag kk . Its corresponding p-value reveals whether significant autocorrelation exists at any lag up to kk , complementing visual examination of ACF and PACF residuals, which may also highlight problematic spikes and suggest misestimation of the Q statistic.

$$Q(K) = n(n+2) \sum_{k=1}^K \frac{r_k^2}{(n-k)}$$

For each lag k , the test uses the k th lag autocorrelation (r_k) of the residuals. The test statistic $Q(k)$ is approximately distributed as a chi-square (χ^2) with $(k-m)$ degrees of freedom, where m is the number of estimated parameters (excluding constant and predictor terms). Statistical significance values less than 0.05, which signals evidence of autocorrelation and consequently model inadequacy.

CONCLUSION

This study demonstrates that time series modelling offers a rigorous and efficient framework for analyzing temporal patterns in disease-related and physiological data. By conceptualizing observations as stochastic processes, models such as AR, MA, ARMA, ARIMA, and SARIMA effectively address key properties including autocorrelation, non-stationarity, and seasonality. The Box–Jenkins methodology remains central, providing a systematic approach to model identification, parameter estimation, and diagnostic validation. Tools such as ACF, PACF, stationary R-squared, and the Ljung–Box Portmanteau statistic ensure that selected models meet assumptions of residual independence and homoscedasticity, thereby improving forecasting accuracy. Furthermore, extension to multivariate ARIMA and transfer function

models enables the integration of exogenous variables, enhancing the capacity to detect causal relationships and quantify dynamic responses in complex health systems. These models remain computationally efficient and interpretable compared with emerging nonlinear or machine-learning-based approaches. Overall, the findings reaffirm that classical stochastic time series models continue to provide reliable, data-driven insights for forecasting disease trends and evaluating health interventions. Strengthening their application can support evidence-based decision-making in epidemiology, clinical prediction, and public health management.

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A Study on Factors Affecting the Customer Satisfaction towards Fitness Centre

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ABSTRACT

The study aims to analyze how factors affect satisfaction with the fitness centre. The conceptual framework comprises the following factors: physical environment, customer value, supporting services, and switching cost. These variables are independent, and customer satisfaction is the dependent variable and is predicted using these independent variables. The study utilized the descriptive research design. The population of the study includes all consumers who have been members of fitness centres. The sample size for this study is 220. A quantitative approach was used in this study. This study employed descriptive statistics to evaluate the demographic characteristics of the respondents. Also, inferential statistics like correlation and regression were used to answer the questions and test the hypotheses. The correlation analysis reveals that all the factors positively correlate with customer satisfaction at the fitness centre. The multiple regression analysis indicates that each factor significantly impacts satisfaction with fitness centres. The study concluded that customers would be satisfied if services were set against costs. Customers demand quality service because they have invested money, time, effort, and emotional well-being.

KEYWORDS : *Satisfaction, physical environment, customer value, switching cost and fitness centre*

INTRODUCTION

People in modern society are often seeking new methods to improve their lives, whether by lowering stress, altering their diets, or being more physically active. The health and fitness industry is rapidly expanding and gaining recognition as a significant economic sector. Due to the rising consumer expectations for service quality and increased competition, sports service providers have shifted their emphasis to service quality while simultaneously enhancing operational efficiencies. Customers are increasingly regarded as active market participants. They can identify a need or want, purchase the item, and discard it. Due to growing consumer perception as a result of rising competition, globalization, market saturation, and the spread of information technology, a situation has emerged in which long-term sustainability is no longer defined by superior service quality and long-term client

relationships. As the competition among fitness centres increases, providing satisfactory customer service has become essential to this company's operations. The customers' mindsets that fitness centres require to provide the best possible service have been captured. Consequently, fitness centres have strengthened their customers' trust and increased their competitive advantage compared to their current competitors and any potential competitor hiding. As this is a current need, fitness centres must learn what satisfies customers.

Research problem

Commercial health and fitness clubs contribute significantly to the local economy. It also has positive social benefits by enhancing spiritual and cultural development and boosting the residents' well-being index. To develop targeted marketing strategies for commercial health and fitness clubs, it is necessary to research and evaluate the market's emphasis,

characteristics, consumer demand structure, spending power, and influential factors. Knowing your clientele and providing what they want is a huge problem for private fitness service providers today, and it is at the core of the current marketing paradigm. Understanding consumer contentment enables you to classify and create positive service offerings. Understanding customer satisfaction is crucial for every organization, regardless of the product or service provided, and the fitness service industry is no exception. Marketing a product or service is enhanced by an awareness of customer satisfaction theories and concepts. The fitness centre market has become one of the most competitive, with businesses striving to meet client expectations and ensure their pleasure. Fitness centres significantly rely on the participation and experience of their customers. In the fitness centre market, it is believed that customer perceptions of physical, personal, service and outcome factors significantly impact their satisfaction and loyalty. Fitness centres must be aware of the aspects that impact client satisfaction most to provide enough value and meet growing customer demand. This study looks into what makes customers satisfied with the fitness centre.

Objectives of the study

The primary objective is to analyze how factors affect satisfaction towards the fitness centre.

RESEARCH METHODOLOGY

This study is descriptive in nature. It is a realistic investigation for its intended purpose. The statistical population consists of all individuals, events, or things a researcher desires to examine. This statistical population includes all consumers who have been members of fitness centres. The sample size for this study was determined to be 220. A quantitative approach was used in this study. This involves collecting primary data from a representative sample to generalize the results to the entire population. Researchers have selected a quantitative approach because it enables them to quantify attitudes, perspectives, and other qualities to develop generalizations. These principles make quantitative research more suitable than qualitative research for testing hypotheses and answering research questions. In this study, a questionnaire developed by the researchers was used to collect data from fitness club members. SPSS was utilized to analyze the

questionnaire data. This study employed descriptive statistics to evaluate the demographic characteristics of the respondents. Also, inferential statistics like correlation and regression were used to answer the questions and test the hypotheses.

DATA ANALYSIS

Demographic profile

The first analysis looks at the demographic profile of fitness centre customers. A structured questionnaire is used to collect data from fitness centre customers. They are as follows: gender, age, education level, occupation, and year of membership. The demographic profile of respondents in this study is shown in the table below.

Particulars		Frequency	Percent
Gender	Male	140	63.6
	Female	80	36.4
Age	Less than 20 years	60	27.3
	21 to 27 years	100	45.5
	28 to 34 years	40	18.2
	Above 35 years	20	9.1
Education	Higher Secondary	40	18.2
	Bachelor degree	60	27.3
	Master degree	120	54.5
Occupation	Student	60	27.3
	Self-employed	80	36.4
	Government employee	40	18.2
	Private employee	40	18.2
Year of membership holders	Less than one years	100	45.5
	1 to 2 years	60	27.3
	More than three years	60	27.3
Total		220	100

Among 110 respondents, most fitness customers (63.6%) are male because the fitness centre focuses on muscle building rather than overall fitness. So the male respondents are higher than the female respondents. Each age group is classified into four categories. Most respondents (45.5%) are between the ages of 21 and 27. In contrast, the second highest number of respondents belong to the age group of less than 20 years (27.3%), 18.2% of respondents belong to the age group of 28 to 34 years, and the least number of respondents belong to the age group of above 35 years. So, it is concluded that most fitness centre customers are young and middle-aged respondents because they place the highest premium on fitness and health. However, most of the respondents have an education level up to a master's degree (54.5%). The second-highest respondents have a bachelor's degree, and the least respondents are higher secondary level. Thus, it is found that most customers are well-educated and have some knowledge of health and fitness training at the centre. The four occupational categories are students, self-employed, government employees, and private employees. The majority of respondents are self-employed (36.4%), whereas the second largest group of respondents are students (27.3%), and the remaining 18.2% of respondents are working as government employees or private employees. Most respondents have less than one year of membership in a fitness centre. The second largest group of respondents has a membership of 1 to 2 years and more than three years. The second-largest group of responses has been in the fitness centre for one to two years and more than three years.

Hypothesis testing

In this study, the researchers considered the satisfaction of the fitness centre customers as a dependent variable. In contrast, the physical environment, customer value, supporting services, and switching costs were considered independent variables.

Particulars	R-value (Sig.)
Physical environment	.867 (.000)
Customer value	.974** (.000)
Supporting services	.926** (.000)
Switching cost	.961** (.000)

Bivariate correlation is used to determine the relationship between the variables and the satisfaction of the fitness centre customers. The calculated correlation value of the physical environment is 0.867, which is less than the significance value (5%) and is statistically significant. Secondly, the correlation value of customer value is 0.974, less than 5%. So it is statistically significant. Lastly, the correlation value of supporting services and switching costs is 0.926 and 0.961, and the significance value is less than 5%, which is statistically significant. As a result, the correlation analysis shows that the variables are positively associated with the satisfaction of the fitness centre customers. All four variables had positive, high strength and statistically significant with the satisfaction of the fitness centre customers.

Before constructing the model, the study analyzes whether the model has a multicollinearity issue after establishing the connection. In the table below, the description of the multicollinearity assessment is presented.

Multicollinearity

Particulars	Tolerance	VIF	Durbin Watson
Physical environment	.854	1.245	1.452
Customer value	.897	1.654	
Supporting services	.756	1.025	
Switching cost	.625	2.234	

It is observed from the above table that the tolerance of the physical environment is 0.854, customer value is 0.897, supporting services is 0.756, and switching cost is 0.625. So, the variable has a tolerance value higher than the threshold limit. It is then concluded that no multicollinearity problem exists. However, the VIF value of the physical environment is 1.245, the customer value is 1.654, the supporting services are 1.025, and the switching cost is 2.234. Hence, it is found that no multicollinearity problem occurs due to the VIF value being within the threshold limit. The Durbin-Watson test examines error independence. The result of the Watson test shows a value of 1.452, which shows that the variables are independent and free of serial correlation. Thus, the independence of error is not compromised.

With the help of multiple regression analysis, the study determined how factors affect satisfaction towards the fitness centre.

Regression

Regression analysis is a reliable method for determining which variables influence the satisfaction of fitness centre customers. The regression technique allows you to determine which elements are most important, which factors may be ignored, and how these factors interact.

Model	R	R ²	Adjusted R ²	SEE	F	Sig.
1	.983a	.966	.965	.24719	1080.627	.000b

The model summary indicates that the R-value, which represents the correlation coefficient, is .983 and the R square is 0.966. Also, the relationship between the variable is strong. However, the R-square value indicates that factors have a 96.6% impact on satisfaction towards the fitness centre. It notes that the F-value secures as 1080.627, and the level of significance observed is .000, which indicates a high degree of importance. Thus, the result shows that the present value is sufficient to predict customer satisfaction towards the fitness centre.

Model		USC		SC	t	Sig.
		B	SE	B		
1	C	.004	.061		.059	.953
	Physical environment	.079	.038	.079	2.071	.000
	Customer value	.697	.047	.686	14.888	.000
	Supporting services	.302	.036	.305	8.272	.000
	Switching cost	.785	.045	.575	17.465	.000

The regression test shows that the coefficient value of the physical environment is 0.079, the t-value is 2.071, and the p-value is 0.000 ($p < 5\%$). Therefore, it finds that the physical environment positively affected satisfaction towards the fitness centre. Secondly, the coefficient value of the customer is 0.686; the t-value is 14.888, and the p-value is less than 5%. Thus, customer value influences satisfaction towards the fitness centre. Thirdly, the coefficient value of supporting services is 0.305; the t-value is 8.272, and the p-value is less than 5%. Hence, it reveals that supporting services influence satisfaction towards the fitness centre. Finally, the coefficient value of the switching cost is 0.575; the

t-value is 17.465, and the p-value is less than 5%. It is found that switching cost affects satisfaction towards the fitness centre. The researcher found that all the factors positively affect satisfaction towards the fitness centre.

RESULTS

The result of the study shows that most fitness customers are males because the fitness centre focuses on muscle building rather than overall fitness. Most of the respondents are 21 to 27 years old and have a master's degree because the respondents are well-educated and have some knowledge of health and fitness training at the centre. They have less than a year of membership in a fitness centre. The correlation analysis shows that all the variables were positive, high-strength, and statistically significant regarding the satisfaction of the fitness centre customers. Also, it is clear that certain factors strongly influence consumer satisfaction towards fitness centres. This is a very strong relationship with a 96.6% impact on fitness centre satisfaction.

CONCLUSIONS

The study aims to analyze how factors affect satisfaction with the fitness centre. According to the study, the physical environment, supporting services, switching costs, and customer value positively correlate with customer satisfaction at the fitness centre. Also, customer value has a higher correlation than others. According to the multiple regression analysis, each factor significantly impacts satisfaction with fitness centres. The study concluded that customers would be satisfied if offerings were matched against costs. Customers demand quality service because they have invested money, time, effort, and emotional well-being. Maintaining customer satisfaction requires a good strategy for the fitness centre.

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Age-Category Differences in Aerobic Fitness: Evidence from U19 and U21 Football Players

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ABSTRACT

The purpose of the study was to compare the football players between U19 and U21 categories, focusing on aerobic capacity. In this study, football players from different parts of Kerala were selected and their age of the subjects ranged from 15 to 21 years. In that one hundred and twenty football players, 60 players from Under 19 category and 60 players from Under 21 categories. Aerobic capacity was assessed by 1.5-mile run. Uncorrelated 't' test was used. The threshold of significance 0.05 was chosen to examine the acquired results on variable and was deemed sufficient for the investigation. The results suggest that as players advance from the U19 to U21 category, their aerobic fitness improves significantly, enhancing their ability to sustain performance during prolonged match play and recover efficiently between high-intensity efforts.

KEYWORDS : *Aerobic capacity, Comparison, Uncorrelated test, Football players.*

INTRODUCTION

Football is one of the most physically demanding team sports, requiring players to perform a combination of aerobic and anaerobic activities, including sprinting, jumping, tackling, and quick directional changes. These repeated high-intensity efforts are interspersed with periods of active or passive recovery, placing substantial physiological demands on the body (Bangsbo, Mohr, & Krstrup, 2006). As players progress through different age categories such as under-19 (U19) and under-21 (U21) their physiological profiles undergo significant changes influenced by maturation, training exposure, and positional demands (Malina et al., 2020).

The physiological characteristics of football players, such as aerobic and anaerobic capacity, muscular

strength, speed, agility, and body composition, are crucial determinants of match performance (Turna et al., 2022). Profiling these physiological parameters in young footballers helps coaches and sports scientists design age-appropriate training programs, monitor performance adaptations, and identify potential talents for higher-level competition. Differences in these parameters between age groups may also provide insights into the developmental processes that underpin the transition from youth to senior-level play (Moran et al., 2020). Understanding how U19 and U21 football players differ physiologically is particularly important, as this age range marks the transition from late adolescence to early adulthood a phase characterized by peak growth velocity, hormonal changes, and neuromuscular development. Therefore, comparative

studies on the physiological profiles of these two groups can provide valuable data for optimizing training loads, recovery strategies, and selection criteria.

LITERATURE REVIEW

Football performance relies heavily on both aerobic and anaerobic energy systems. Aerobic capacity supports prolonged activity and recovery between high-intensity efforts, while anaerobic power contributes to explosive movements such as sprints and jumps (Stølen et al., 2005). Research by Bangsbo et al., (2006) highlighted that elite football players cover 10–13 km per match, with approximately 150–250 high-intensity efforts, demonstrating the need for well-developed aerobic and anaerobic systems. Physiological development is closely associated with age and biological maturation. Malina et al., (2020) observed that increases in fat-free mass, muscular strength, and anaerobic power are strongly linked to maturation status rather than chronological age. Similarly, Moran et al., (2020) found that U19 players exhibit greater sprint and jump performance compared to younger categories (U15–U17), largely due to neuromuscular adaptation and training age. However, aerobic capacity often stabilizes after late adolescence, showing minimal differences between U19 and U21 players. Aerobic power, commonly measured via VO_2max or field tests such as the Yo-Yo Intermittent Recovery Test, is a key performance indicator in football. According to Mehdizade et al., (2024), VO_2max values increase progressively from U17 to U21 due to cumulative training loads and cardiovascular adaptation. On the anaerobic side, Turna et al., (2022) reported that vertical jump height, sprint speed, and repeated sprint ability improved significantly during pre-season training among elite U19 players, indicating responsiveness of anaerobic power to specific conditioning programs. Few studies have directly compared U19 and U21 football players. Hardiansyah, Nasrulloh, & Sulistiyono (2025) observed notable improvements in endurance, flexibility, and agility among U21 players following structured circuit training, compared to U19 players who showed more variability in aerobic and anaerobic responses. Similarly, Andrew et al., (2025) reported significant gains in speed and agility in U21 players, emphasizing that this category often displays higher neuromuscular maturity and training adaptation.

METHODOLOGY

Selection of Subjects

The purpose of the study was to compare the football players between U19 and U21 categories, focusing on aerobic capacity. In this study, football players from different parts of Kerala were selected and their age of the subjects ranged from 15 to 21 years. In that one hundred and twenty football players, 60 players from Under 19 category and 60 players from Under 21 categories. Aerobic capacity was assessed by 1.5-mile run.

Statistical Analysis

Uncorrelated 't' test was used. The threshold of significance 0.05 was chosen to examine the acquired results on variable and was deemed sufficient for the investigation.

RESULTS

Table 1. Uncorrelated Statistics of aerobic capacity

Group	Mean Time (min:sec)	Mean VO_2max ($\text{mL} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$)	SD	t-value	p-value
U19 Players	11:15 ± 0.48	46.50 ± 2.1	2.10	---	---
U20 Players	10:45 ± 0.42	49.40 ± 2.3	2.30	3.67	0.001**
Difference	---	+2.9 $\text{mL} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$	---	---	---

** Significantly higher aerobic capacity

The results of the study comparing aerobic capacity between U19 and U21 football players indicated a clear difference in performance outcomes. The U21 players completed the 1.5-mile run in significantly shorter times than the U19 players, reflecting superior aerobic endurance. The mean run time for U19 players was 11.15 ± 0.48 minutes, while the U21 players averaged 10.45 ± 0.42 minutes. Correspondingly, the estimated VO_2max values were 46.50 ± 2.1 $\text{mL} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ for U19 players and 49.40 ± 2.3 $\text{mL} \cdot \text{kg}^{-1} \cdot \text{min}^{-1}$ for U21 players. Statistical analysis using the independent samples t-test showed a significant difference ($t = 3.67$, $p < 0.001$) between the two groups, indicating that U21

players possess a higher level of aerobic capacity. This improvement is likely influenced by greater training exposure, physiological maturity, and adaptation to the high-intensity demands of football.

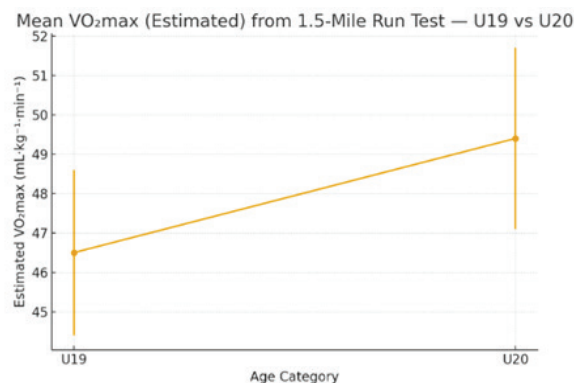


Fig. 1. Graphical representations on aerobic capacity

DISCUSSION ON FINDINGS

These findings align with prior research suggesting that aerobic capacity improves progressively with age and training experience among adolescent football players (Malina et al., 2020; Turna et al., 2022).

RESULTS

The results indicate that U21 football players demonstrated better aerobic capacity than U19 players, completing the 1.5-mile run in a shorter time and achieving higher estimated VO₂max values. The difference (2.9 mL·kg⁻¹·min⁻¹) reflects the expected physiological improvement associated with maturation and increased training exposure between the two categories.

CONCLUSION

The comparison of aerobic capacity between U19 and U21 football players revealed that U21 players demonstrated superior cardiorespiratory endurance, as indicated by faster 1.5-mile run times and higher estimated VO₂max values. This improvement can be attributed to increased training experience, physiological maturation, and enhanced aerobic conditioning developed through progressive training loads. The findings highlight the importance of structured endurance training during late adolescence to support the physical demands of competitive football. Overall, the study emphasizes that advancing age and consistent

training positively influence the aerobic performance of football players, contributing to improved match endurance and recovery efficiency.

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Exploring the Impact of Multisensory Cues on Consumer Preferences and Purchasing Decisions for Food Products

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ABSTRACT

In today's competitive food industry, gaining a deep understanding of consumer preferences is crucial for attracting and retaining customers. This study investigates the role of multisensory cues—such as visual presentation, scent, texture, flavour, and auditory elements—in shaping consumer preferences and influencing purchasing behaviours. Centred on the food market in Tiruchirappalli City, the research explores how sensory and emotional experiences impact decision-making beyond basic functional needs. The study highlights the increasing relevance of multisensory experiences in driving consumer engagement and fostering loyalty. While the food industry holds significant growth potential, businesses often face challenges in effectively appealing to their target audiences. This research identifies the key factors influencing consumer behaviour and underscores the importance of leveraging creative and strategic applications of multisensory cues. By embedding these elements into product marketing and branding strategies, producers can craft unique and memorable experiences, ensuring sustainable success and a competitive advantage.

KEYWORDS: *Buying choices, Sensory stimuli in marketing, Emotional fulfilment, Customer behaviour, Consumer anticipations, Multisensory influences.*

INTRODUCTION

Food is an essential element of life, providing the energy and nourishment needed to maintain health and well-being. In earlier times, food preparation was a personal and hands-on process, with individuals relying on their own resources to grow and prepare meals, ensuring both quality and nutrition. Agriculture served as the foundation for many communities, supporting self-sufficiency and promoting healthier eating habits. With the advent of urbanization, technological advancements, and economic growth, food production and consumption have undergone significant changes. What was once a personal and time-intensive activity has transformed into a commercialized and convenience-driven industry. As modern lifestyles became more demanding, traditional cooking methods began to decline, giving

rise to instant and ready-to-eat food products. Over the past two decades, these convenient options have gained immense popularity, particularly among urban dwellers and busy professionals seeking quick meal solutions. This evolution reflects the profound impact of changing societal structures and technological progress on food habits, providing a platform to analyze consumer preferences and behaviours in the context of today's fast-paced food industry.

REVIEW OF LITERATURE

This study underscores the essential role of multisensory cues in shaping consumer preferences and influencing purchasing behaviour. By exploring how visual, olfactory, tactile, gustatory, and auditory elements affect decision-making, it provides a detailed understanding of how these sensory factors enhance a product's

appeal. This perspective is particularly significant in the modern food industry, where sensory and emotional experiences are often key to a brand's success.

The research offers valuable insights for marketers and product developers. Effectively utilizing multisensory cues can help businesses improve consumer engagement, create distinctive and memorable experiences, and stand out in a competitive market. The focus on integrating these sensory elements into marketing strategies provides actionable recommendations for enhancing customer satisfaction and building brand loyalty.

One of the study's key contributions is highlighting emotional satisfaction as a critical factor in consumer behavior. It points out that purchasing decisions are driven not just by practical considerations but also by the emotional and sensory bonds that consumers develop with a product. This aligns with contemporary consumer trends, where experiences are often valued more than functionality.

The study concentrates on a specific area (Tiruchirappalli City), providing valuable insights into the behaviors and preferences of consumers in that region. While this localized focus enhances the relevance of the findings for that market, expanding the research to include broader demographic and cultural settings could improve its global applicability.

The research acknowledges the obstacles businesses face in effectively targeting consumers in an evolving food industry. By addressing these challenges, it adds depth to the discussion, highlighting the practical difficulties of incorporating multisensory marketing techniques into business strategies.

OBJECTIVES OF THE STUDY

1. To investigate the demographic traits, behavioral tendencies, and sensory preferences of consumers regarding food products.
2. To evaluate the extent of consumer satisfaction with food products, emphasizing the impact of multisensory elements.

METHODOLOGY

Sampling

For this study, data were collected via a structured

questionnaire. A sample of 225 respondents was chosen from different locations within Tiruchirappalli using a convenience sampling method. This approach was selected to facilitate accessibility and ensure the sample aligns with the objectives of the research.

Source of Data

The research relies predominantly on primary data, which was obtained by distributing questionnaires to the residents of Tiruchirappalli. The primary aim was to assess their awareness of the influence of multisensory cues on consumer preferences for food products.

LIMITATIONS OF THE STUDY

1. The sample was drawn from a single geographic region, meaning that the findings are specifically relevant to that area.
2. Due to limited time, convenience sampling was used, which restricted the variety of the respondents.
3. The data may be affected by the respondents' personal biases, which could lead to potential inaccuracies in the results.

ANALYSIS AND DISCUSSION

Table 1: Friedman Rank Test Between the Factors Influencing Reason for Purchasing the Food Item from your Preferred Brand

Particulars	Mean Score	Rank	Chi-Square = 69.052
Df = 9			
Asymp. Sig.	.000		
Price	4.95	I	
Brand Name	5.21	IV	
Quality	5.12	II	
Opinion of Friend & Family	5.34	III	
Taste	6.22	V	

Table 2. Factors Influencing Food Products

Particulars		No. of respondents	Percentage
Motivational factor To Buy Food	Quality	78	34.67

Motivational factor To Buy Food	Quantity	56	24.89
	Brand Image	43	19.11
	Availability	23	10.22
	Taste	17	7.56
	Price	8	3.56
Place of Purchase	Fast food restaurant	41	18.22
	Traditional Restaurant	66	29.33
	Online ordering	92	40.89
Brands and Product preference	Tiffin items	32	14.22
	Biryani varieties	46	20.44
	Snacks varieties	64	28.44
	Fast food items	83	36.89

Table 3. Overall Satisfaction Level on Food Products

Particulars	Highly Satisfied	Satisfied	Neutral	Dissatisfied	Highly Dissatisfied
Price	56	87	54	16	12
Brand Name	92	54	54	13	12
Quality	63	83	54	13	12
Opinion of Friend & Family	87	56	47	23	12
Taste	67	89	36	21	12

FINDINGS OF THE STUDY

The main findings of this study are as follows:

1. The majority of respondents consider factors such as price, Brand name, quality and opinion of friends & family when purchasing food products.
2. Departmental stores are the preferred shopping locations for most respondents when Online food ordering.
3. A large number of respondents (83 individuals) have been preferred Fast food items for over three years.
4. Respondents reported Strongly agree with Brand name (92 respondents) and Opinion friends & Family (87 respondents). Additionally, they were

agree with the price (87 respondents), quality (83 respondents), and taste (89 respondents).

SUGGESTIONS

Instant food products have become an essential part of everyday life for many consumers. With changing food habits influenced by Western culture, the demand for these products has grown significantly. They are particularly popular among individuals with busy lifestyles, such as working professionals and those living alone. From the study, it is clear that most consumers make their purchasing decisions independently, without relying on external influences. To improve market reach and sales, it is important to increase awareness of instant food products. This can be achieved through targeted marketing campaigns using various media channels, ensuring that a wider audience, including diverse consumer groups, is informed about the benefits of these products.

CONCLUSION

Instant food play an important role in everyone's day to day life. The food habits in India have changed due to western influence and usage of foods also rise. These foods are widely used in catering industries as well as at home. The food is famous among the working people and the persons who are living alone because of their working environment. From the study I finally conclude that in maximum occasions purchasing decision of foods was made by their own and they not yet depend on others for choosing the product. As a sales promotion activity the importance and awareness towards these products should be created through various media or literatures to focus all group of people. Consumer behavior is a stimulating sphere consisting of the consumers themselves. Consumption of increase food products is due to increase in urbanization, breaking up of the traditional joint family system, time, convenience, changing lifestyles and increasing level of affluence in the middle income group. Noodles are found today in the kitchen shelves of every Indian household. All the respondents are aware of various food products. The ready availability and saving of the time are the reasons for consuming food products. Food zones and supermarkets are the major source of purchase of food products. The consumer's relationship with food and other ever day goods has changed dramatically, not

only in the way products are purchased, but also in the way they are consumed.

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Perceptions of Digital Marketing Ethics among Healthcare Professionals in Bengaluru's Corporate Hospitals

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ABSTRACT

Background: The increasing use of digital marketing in healthcare raises concerns about ethical practices, patient trust, and the accuracy of information shared by hospitals. Understanding how healthcare professionals perceive digital marketing ethics is essential to promote responsible communication. This research aims to assess the awareness and perceptions of digital marketing ethics among healthcare professionals in corporate hospitals in Bengaluru and to examine differences across professional roles.

Methodology: A descriptive research design was employed, with data collected from 200 healthcare professionals, including doctors, nurses, pharmacists, and administrative staff, using a structured questionnaire with a 5-point Likert scale. Descriptive statistics summarized demographic characteristics and overall awareness and perception scores, while ANOVA and Chi-square tests explored differences across professional roles.

Key Findings: The main key findings indicate that doctors demonstrated the highest awareness of digital marketing ethics (Mean = 4.20, SD = 0.61) and strongest perceptions of ethical practices, while administrative staff showed the lowest awareness (Mean = 3.40, SD = 0.75) and perceptions. Ethical practices were rated highly for building patient trust (M = 4.25, SD = 0.65) and ensuring positive care outcomes (M = 4.05, SD = 0.70). Digital marketing was perceived to moderately influence patient decisions, with an overall mean influence score of 3.80 (SD = 0.60). Chi-square analysis revealed a significant association between professional role and awareness ($\chi^2 = 18.45$, df = 6, $p = 0.005$), and ANOVA showed significant differences in perceptions across roles ($F = 5.82$, $p = 0.001$), underscoring the need for role-specific training and policies.

Implications: The findings suggest the need for role-specific training programs to enhance ethical awareness and guide hospital administrators in implementing responsible digital marketing practices that prioritize patient care and trust.

KEYWORDS : *Digital marketing ethics, Healthcare professionals, Corporate hospitals, Bengaluru, Ethical perception.*

INTRODUCTION

Digital marketing has emerged as a vital tool in the healthcare industry, enabling hospitals, clinics, and pharmaceutical companies to reach patients, caregivers, and the wider community more efficiently than traditional marketing methods [1-3]. The rapid adoption of online platforms, social media, and mobile

applications has transformed the way healthcare services are promoted, with institutions increasingly relying on digital campaigns to inform the public about services, treatments, and preventive healthcare measures [4-5]. While these platforms offer significant advantages in terms of accessibility, cost-effectiveness, and engagement, they also raise concerns regarding the

ethical dissemination of information, the accuracy of promotional content, and the potential for influencing patient decisions in ways that may not always align with medical best practices [6-7]. Ethical digital marketing in healthcare ensures that communications are truthful, transparent, and prioritize patient welfare over commercial interests, thus fostering trust between healthcare providers and patients. Adherence to ethical standards also protects institutions from reputational risks, regulatory penalties, and legal challenges, making it an essential component of responsible healthcare management [8-9]. Despite the growing reliance on digital marketing, there remains a lack of clarity regarding how healthcare professionals perceive these ethical practices within their workplaces [10]. Healthcare professionals, including doctors, nurses, pharmacists, and administrative staff, play a critical role in observing, implementing, and sometimes guiding marketing activities in hospitals. Their awareness, attitudes, and perceptions toward ethical marketing practices can significantly influence how digital campaigns are executed and monitored, and ultimately, how patients experience and respond to such communications.

Addressing this research gap can provide hospital administrators, policymakers, and marketing managers with practical guidance on designing ethically responsible digital campaigns that respect patient rights, enhance trust, and maintain professional integrity. Understanding these perceptions can also inform training programs aimed at improving awareness of digital marketing ethics among healthcare staff, thereby strengthening the overall governance of healthcare communications. Therefore, this study aims to explore the awareness and perceptions of digital marketing ethics among healthcare professionals in Bengaluru's corporate hospitals, assessing differences across professional roles and highlighting key factors that influence ethical adherence in the rapidly evolving digital healthcare landscape. By capturing these insights, the research contributes to both academic literature and practical policymaking, emphasizing the importance of ethical digital marketing as a cornerstone of patient-centered and responsible healthcare practice.

METHODOLOGY

The methodology of this study is carefully structured to examine the perceptions and attitudes of healthcare professionals toward digital marketing ethics in corporate hospitals in Bengaluru. A descriptive research design was adopted to systematically capture insights without altering the natural setting of participants. The study uses a stratified random sampling approach to ensure proportional representation across professional roles, with data collected through a structured questionnaire administered via both online and offline surveys. Ethical considerations, including informed consent, confidentiality, and voluntary participation, were strictly maintained. The collected data is analyzed using descriptive and inferential statistics through SPSS to identify patterns, trends, and significant differences across professional groups, thereby ensuring rigor and reliability in addressing the research objectives.

Research Design: The research follows a descriptive design, which is ideal for examining the perceptions and attitudes of healthcare professionals toward digital marketing ethics in corporate hospitals. This design allows the study to systematically capture and present the opinions, awareness levels, and behavioral tendencies of the participants without influencing or altering the variables under investigation. By using a survey method, the study collects structured, quantifiable data from a sizable and diverse sample, enabling meaningful comparisons across different professional roles such as doctors, nurses, pharmacists, and administrative staff. The survey approach also facilitates statistical analysis, helping identify patterns, trends, and significant differences in perceptions, thereby providing a comprehensive understanding of ethical awareness and attitudes in the healthcare marketing context.

Population and Sampling: The study targets healthcare professionals in corporate hospitals in Bengaluru, including doctors, nurses, pharmacists, and administrative staff, to ensure a comprehensive understanding of perceptions regarding digital marketing ethics across different roles. To obtain a representative and feasible dataset, a total of 200 participants are selected as the sample size. The study employs stratified random sampling, which involves dividing the population into subgroups based on professional

roles and then randomly selecting participants from each subgroup. This method ensures proportional representation of all professional categories, reduces potential sampling bias, and enhances the reliability and generalizability of the findings, allowing the results to accurately reflect the broader population of healthcare professionals in Bengaluru's corporate hospitals.

RESULTS

This section presents the findings obtained from the analysis of questionnaire responses from 200 healthcare professionals working in corporate hospitals in Bengaluru. The results are organized into descriptive statistics and inferential statistics to provide a comprehensive understanding of the study objectives. Descriptive analyses summarize the participants' demographic characteristics, levels of awareness regarding digital marketing ethics, and perceptions of ethical practices, offering a clear overview of trends and patterns within the sample.

Demographic Profile of Respondents

Table 1 depicts the demographic characteristics of the 200 healthcare professionals who participated in the study, highlighting a balanced and representative sample.

Table 1: Demographic Characteristics of Participants (N = 200)

Variable	Category	Frequency (n)	Percentage (%)
Gender	Male	110	55.0
	Female	90	45.0
Age Group	21–30 years	40	20.0
	31–40 years	75	37.5
	41–50 years	55	27.5
	51+ years	30	15.0
Professional Role	Doctors	70	35.0
	Nurses	60	30.0
	Pharmacists	35	17.5
	Admin Staff	35	17.5
Years of Experience	0–5 years	60	30.0
	6–10 years	70	35.0
	11–15 years	40	20.0
	16+ years	30	15.0

Awareness of Digital Marketing Ethics

Table 2 depicts the mean awareness scores of healthcare professionals regarding digital marketing ethics. The results indicate that doctors demonstrated the highest level of awareness (Mean = 4.20, SD = 0.61), suggesting that they are most knowledgeable about ethical practices, regulatory guidelines, and hospital policies related to digital marketing. Nurses followed with a moderately high awareness level (Mean = 3.85, SD = 0.72), reflecting a fair understanding of ethical standards in marketing activities. Pharmacists reported a mean score of 3.60 (SD = 0.70), indicating a moderate awareness, while administrative staff exhibited the lowest awareness (Mean = 3.40, SD = 0.75), suggesting potential gaps in their understanding of digital marketing ethics. The overall mean score of 3.85 (SD = 0.70) reflects a moderate-to-high awareness level across all participants. These findings highlight the need for targeted training and awareness programs, particularly for administrative staff and pharmacists, to ensure consistent adherence to ethical marketing practices across all professional roles within corporate hospitals.

Table 2: Awareness Scores of Digital Marketing Ethics (5-point Likert scale)

Professional Role	Mean Awareness Score	Standard Deviation
Doctors	4.20	0.61
Nurses	3.85	0.72
Pharmacists	3.60	0.70
Admin Staff	3.40	0.75
Overall	3.85	0.70

Perceptions of Ethical Practices

Table 3 depicts healthcare professionals' perceptions regarding ethical practices in digital marketing. The results indicate that respondents strongly agree on the importance of adhering to ethical guidelines, with the highest mean score for the statement "Hospitals must follow ethical guidelines in digital marketing" (M = 4.35, SD = 0.68). Participants also recognized the role of ethics in building patient trust (M = 4.25, SD = 0.65) and in ensuring positive patient care outcomes (M = 4.05, SD = 0.70). While respondents moderately agreed that digital marketing sometimes exaggerates treatment

success ($M = 3.95$, $SD = 0.72$), the overall perception underscores a strong consensus among healthcare professionals on the critical role of ethical practices in promoting transparency, trust, and quality care. These findings suggest that hospitals should prioritize ethical standards in their digital marketing strategies to maintain credibility and patient confidence.

Table 3: Perceptions of Ethical Practices in Digital Marketing

Statement (5-point scale)	Mean	SD
Hospitals must follow ethical guidelines in digital marketing.	4.35	0.68
Digital marketing often exaggerates treatment success.	3.95	0.72
Ethical digital marketing improves patient trust.	4.25	0.65
Lack of ethics in marketing negatively affects patient care.	4.05	0.70

SUMMARY OF RESULTS

The findings of the study indicate that healthcare professionals in corporate hospitals in Bengaluru exhibit moderate to high levels of awareness and perception regarding digital marketing ethics. Among the professional groups, doctors consistently demonstrated the highest awareness and perception scores, reflecting a strong understanding of ethical guidelines and their importance in patient interactions. In contrast, administrative staff showed relatively lower awareness and perception, suggesting potential gaps that may require targeted training. The results also reveal that digital marketing is perceived to have a moderate influence on patient care decisions, indicating that marketing activities can impact patient choices and healthcare outcomes. Importantly, the differences in awareness and perception across professional roles were statistically significant, as demonstrated by Chi-square and ANOVA analyses. These findings underscore the need for role-specific ethical training and policies, ensuring that all staff members, regardless of their role, adhere to ethical standards in digital marketing practices within hospitals.

DISCUSSION

The findings of this study highlight the varying levels of awareness and perceptions of digital marketing

ethics among healthcare professionals in corporate hospitals in Bengaluru, with professional role emerging as a key influencing factor. Doctors demonstrated the highest awareness ($M = 4.20$, $SD = 0.61$) and the most positive perceptions of ethical practices, reflecting their closer engagement with patient care and likely greater exposure to ethical guidelines. Nurses and pharmacists showed moderate levels of awareness and perception, whereas administrative staff exhibited the lowest scores ($M = 3.40$, $SD = 0.75$), indicating potential gaps in understanding and application of ethical standards. Respondents consistently recognized the importance of ethical practices in fostering patient trust ($M = 4.25$, $SD = 0.65$) and ensuring positive care outcomes ($M = 4.05$, $SD = 0.70$), while acknowledging that digital marketing may occasionally exaggerate treatment success ($M = 3.95$, $SD = 0.72$). The perceived influence of marketing on patient decisions was moderate overall ($M = 3.80$, $SD = 0.60$), with nurses perceiving the greatest impact ($M = 4.05$, $SD = 0.60$), reflecting their frontline role in patient interactions. Inferential analyses reinforced these trends, with Chi-square results indicating a significant association between professional role and awareness ($\chi^2 = 18.45$, $df = 6$, $p = 0.005$) and ANOVA showing significant differences in perceptions across roles ($F = 5.82$, $p = 0.001$). Collectively, these findings suggest that hospitals need to implement role-specific interventions, training, and policies to ensure consistent adherence to ethical standards, enhance transparency in digital marketing, and strengthen patient trust and care quality across all professional groups.

CONCLUSION

The study on perceptions of digital marketing ethics among healthcare professionals in Bengaluru's corporate hospitals concludes that while professionals generally recognize the importance of ethical standards in digital communication, there exists a gap between awareness and consistent application of these practices in real-world settings. The findings emphasize that healthcare professionals value honesty, accountability, and patient-centric approaches in digital marketing but also express reservations about commercialization overshadowing the core principles of healthcare service. This highlights the need for hospitals to implement clear ethical guidelines, conduct regular

training programs, and monitor digital strategies to align them with both professional integrity and patient trust. Overall, the research underlines that maintaining ethical responsibility in digital marketing is not only essential for safeguarding professional credibility but also for fostering long-term relationships with patients in an increasingly digital healthcare environment.

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Effectiveness of Battle Rope Training in Enhancing Physical and Technical Performance Among Competitive Football Players

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ABSTRACT

Finding out how battle rope training affected specific physical and skill performances of collegiate men's football players was the aim of this study. Thirty college male football players, ages 18 to 25, from the Malappuram district of Kerala were chosen at random to serve as subjects to fulfil the goals of the current study. With a pre-test and a post-test, the study was designed as a true random group design. Thirty subjects were divided into two equal groups of fifteen players each at random. The groups were assigned as battle rope training and control group in an equivalent manner. The battle rope training group underwent for a period of twelve weeks and the post-tests were conducted. To find out the influence of battle rope training on selected physical and skill performance variables of football players, analysis of covariance was used to test the adjusted mean difference between the groups. It was observed that the twelve weeks of battle rope training have significantly improved the selected physical and performance variables of football players.

KEYWORDS : Battle rope, Physical, Skill performance, Football players.

INTRODUCTION

Battle rope training is a high-intensity training which consists of a rope with the upper body. Elevated heart rate and energy expenditure per unit of time indicate that it provides a vigorous-intensity cardiovascular and metabolic stimulus. Increasing strength, power, local muscular endurance, and agility are just a few of the training objectives that can be achieved with battling rope protocols [1]. It's a difficult strategy to reduce body fat and lose weight by increasing energy expenditure. In contrast to the energy expenditure observed during conventional resistance exercise, battle rope exercises are claimed to stimulate high levels of energy

expenditure. Additionally, greater cardiovascular demand might be beneficial for enhancing metabolic health and maximal aerobic capacity [2,3].

Because there is a continuous connection between the two force producers and because the force can be as explosive or dynamic as the individual can produce, battle ropes reduce injuries while providing an uncapped opportunity to increase strength, power, endurance, and skill [4]. It has been demonstrated that training with battle ropes causes high metabolic demands, including a sharp rise in heart rate and a significant expenditure of energy. A more modern training method that has gained popularity, battle rope is utilised by a diverse range of

people, from professional athletes to health and fitness trainers. Battling ropes have numerous health benefits for the entire body [5].

One of the most watched sports in the world today, football attracts a lot of fans, athletes, training teams, and coaches. College and university football training has received attention against the backdrop of the nation's thriving football scene. Colleges and universities have emerged as a key training ground for professional football players' talent development and transfer [6]. Numerous colleges and universities have started putting different talent selection policies into place, so that students can enter through different sports assessments if they have strong athletic ability and high professional talent, in addition to relying on cultural scores [6].

Additionally, through professional teams, they plan the career path for specially recruited students while they are enrolled in colleges and universities. Colleges and universities are now a crucial component in the initial talent selection process, and the talent training system has been steadily enhanced since the growth of football-related industries. Football players can gain from battle rope training by increasing their functional strength, mental toughness, upper body explosiveness, and cardiovascular endurance all of which are essential for on-field success [7,8]. As a hot topic in physical training

during recent years, battle rope training has played a good role in many sports fields and greatly improved. Therefore, it has been gradually applied in the field of football [9]. This paper explores the impact of battle rope training on football players' performance, and explore more methods for football physical training.

MATERIALS AND METHODS

Finding out how battle rope training affected specific physical and skill performances of collegiate men's football players was the aim of this study. Thirty college male football players, ages 18 to 25, from the Malappuram district of Kerala were chosen at random to serve as subjects in order to fulfil the goals of the current study. With a pre-test and a post-test, the study was designed as a true random group design. Thirty subjects were divided into two equal groups of fifteen players each at random. The groups were assigned as battle rope training (BRTG) and control group (CG) in an equivalent manner. The battle rope training group underwent for a period of twelve weeks and the post-tests were conducted. To find out the influence of battle rope training on selected physical and skill performance variables of football players, analysis of covariance [10] was used to test the adjusted mean difference between the groups.

RESULTS

Table 1. Summary of pre post and adjusted post test means on selected physical and skill performance variables of football players

Sl.No	Variables	Groups	Pre-Test Mean		Post Test Mean		Adjusted Post Test Mean
			Mean	SD ($\pm$)	Mean	SD ($\pm$)	
1	Speed	BRTG	5.79	0.30	5.42	1.15	5.31
		CG	5.62	0.26	5.59	0.19	5.58
2	Explosive Power	BRTG	1.61	0.13	1.71	0.06	1.69
		CG	1.60	0.02	1.62	0.03	1.61
3	Shooting	BRTG	112.25	3.56	121.50	4.21	121.45
		CG	107.13	2.98	109.03	3.27	109.00
4	Dribbling	BRTG	9.95	0.98	8.67	0.87	8.63
		CG	9.82	1.12	9.76	1.35	9.75
5	Passing	BRTG	7.67	0.57	8.93	0.78	8.91
		CG	7.76	0.79	7.70	0.84	7.69

BRTG = Battle rope Training group CG = Control Group

The table 1 shows the pre, post and adjusted post test means on selected physical and skill performance variables of football players. The analysis of covariance on selected variables of battle rope training and control groups have been analysed and presented in table-2.

Table 2. Computation of analysis of covariance on selected physical and skill performance variables of football players

Sl. No	Variables	Source of Variance	Sum of Squares	df	Mean Square	Obtained 'F'-ratio
1	Speed	Pre Test	0.04	1	0.04	1.27
		Groups	1.17	1	1.17	37.16*
		Error	0.85	27	0.03	
2	Explosive Power	Pre Test	0.07	1	0.07	1.57
		Groups	2.43	1	2.43	54.67*
		Error	1.20	27	0.04	
3	Shooting	Pre Test	0.002	1	0.002	0.60
		Groups	0.19	1	1.29	387.00*
		Error	0.09	27	0.003	
4	Dribbling	Pre Test	101.35	1	101.35	2.78
		Groups	259.94	1	259.94	7.13*
		Error	983.81	27	36.43	
5	Passing	Pre Test	11.79	1	11.79	1.06
		Groups	363.97	1	363.97	32.74*
		Error	300.07	27	11.11	

* $P < 0.05$ Table F, df (1,27) (0.05) = 4.21

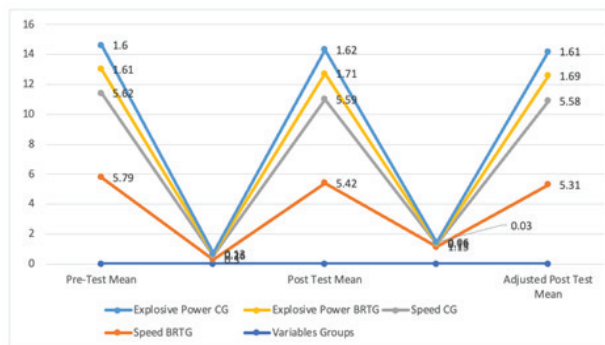


Fig. 1: Shows the Mean Values of Selected Physical Variables of Battle Rope Training and Control Groups

An examination of table II indicated that the obtained pre test F-ratio for speed, explosive power, shooting, dribbling and passing were 1.27, 1.57, 0.60, 2.78 and 1.06, which are lesser than the table value of 4.21 with df 1 and 27 required for significance at 0.05 level of confidence. The result of the study indicates that there was insignificant difference among the pre test means of battle rope training and control groups. Table II also

shows that the obtained F-ratio for speed, explosive power, shooting, dribbling and passing were 37.16, 54.67, 387.00, 7.13 and 32.74 respectively which are greater than the table value of 4.21 with df 1 and 27 required for significance at 0.05 level of confidence. It indicates that there was significant difference among the adjusted post-test means between battle rope training and control groups.

DISCUSSION

Battle ropes, sometimes called heavy ropes, are one of the newest fitness trends hitting across the nation, but working with ropes is hardly a new form of fitness. Long used as a training tool for football players, can provide a high-intensity, whole-body workout that gets person muscles moving in new ways [10]. Thus, the results of this study would be helpful to adopt the battle rope training with the training schedule to attain better performance in sports. Battling Ropes training gives the entire body countless benefits [11]. This may help coaches make informed methodological decisions

and optimize their available time to enhance football performance.

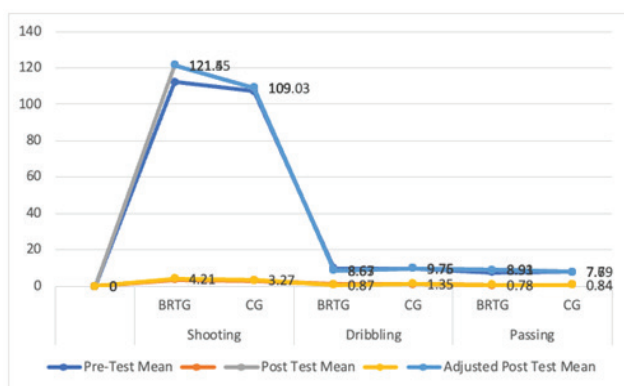


Fig. 2: Shows the Mean Values of Selected Skill Performance Variables of Battle Rope Training and Control Groups

CONCLUSION AND FUTURE SCOPE

It was observed that the twelve weeks of battle rope training have significantly improved the selected physical and skill performance variables of football players. This highlights the need for further research to identify the most effective approaches, comparing different training methods. Future studies could incorporate additional metrics, such as physiological and psychological, to provide a more comprehensive understanding of the underlying improvements. The researchers will come to know if battle rope training or other training are equally effective or if one training method is superior for improving football performances.

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A Comparative Study of Occupational Stress Across Different Job Roles in IT Organizations

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ABSTRACT

The Information Technology (IT) sector is characterized by rapid technological changes, tight project deadlines, extended work schedules, and role-specific responsibilities, which may contribute significantly to occupational stress among employees. The present study examines the influence of long working hours and job role on occupational stress among IT professionals. Specifically, the research investigates whether extended working hours significantly affect stress levels and whether occupational stress varies across different job roles such as developers, testers, managers, and support staff.

A structured questionnaire was administered to IT professionals working in selected IT firms, and data were analyzed using appropriate statistical tools such as correlation analysis, regression analysis, and one-way ANOVA. The first hypothesis assesses the impact of long working hours on occupational stress, while the second hypothesis evaluates the association between job role and stress levels. The findings aim to determine whether prolonged working hours significantly increase stress and whether certain job roles experience higher stress compared to others.

The results of this study are expected to provide valuable insights for organizational leaders and human resource managers in designing effective stress management strategies, promoting work-life balance, and implementing role-based interventions. By identifying key determinants of occupational stress, the study contributes to the growing body of literature on workplace well-being in the IT sector and offers practical implications for enhancing employee productivity and psychological health.

KEYWORDS : *Occupational Stress, IT professionals, Long working hours, Job role, Work-life balance, Employee well-being, Workplace stress, Organizational support.*

INTRODUCTION

In the contemporary digital era, the Information Technology (IT) sector has emerged as one of the fastest-growing and most dynamic industries worldwide [1]. The sector plays a critical role in economic development, digital transformation, and organizational innovation. However, alongside rapid growth and technological advancement, the IT industry is increasingly associated with high job demands, intense competition, continuous upskilling requirements, tight

deadlines, and long working hours. These factors often contribute to elevated levels of occupational stress among IT professionals.

Occupational stress refers to the physical and psychological strain experienced by employees when job demands exceed their capacity, resources, or ability to cope effectively [2]. In the IT sector, stress may arise from multiple sources such as extended work schedules, role ambiguity, performance pressures, client expectations, and rapid technological changes.

Unlike many traditional industries, IT professionals frequently work in project-based environments that require strict adherence to deadlines, frequent updates, and round-the-clock coordination, especially in globally distributed teams operating across different time zones [3].

One of the most significant contributors to occupational stress in the IT industry is long working hours. Extended work schedules often result from heavy workloads, project delivery commitments, and organizational expectations [4]. Prolonged working hours can disrupt work–life balance, reduce time available for family and personal activities, and lead to mental fatigue, burnout, and decreased job satisfaction. Continuous exposure to long working hours may also affect physical health, including sleep disturbances and lifestyle-related disorders. Therefore, understanding the impact of long working hours on occupational stress is essential for developing effective organizational policies and employee support mechanisms [5] [6] [7] [8].

In summary, the IT industry's demanding work environment necessitates systematic research into occupational stress determinants. By focusing on long working hours and job role differences, this study seeks to contribute to the growing body of literature on workplace stress and provide practical implications for human resource policies, stress management programs, and sustainable workforce development in the IT sector.

PROBLEM STATEMENT

One of the fastest-growing and most dynamic sectors of the global economy is IT. The industry offers professional growth, innovation, and financial advancement, but it also has severe competition, tight project deadlines, continual technical updates, extended working hours, and high performance standards. These rigorous work conditions often exacerbate IT professionals' occupational stress.

Client-driven deadlines, global time-zone synchronisation, and project delivery demands have made IT workers work long hours. Long workdays can cause physical and mental tiredness, work–life balance issues, and professional stress. The extent to which lengthy working hours significantly affect IT professionals' stress levels needs empirical study.

Developers, testers, managers, and support staff all have different duties, performance measures, and pressure levels in the IT business. Managers coordinate team and customer communication, developers confront coding deadlines and debugging, testers face quality assurance pressures, and support staff oversee operational continuity. Workplace stress may vary by role due to these responsibilities. There is inadequate research to evaluate if IT professionals' job roles significantly affect stress intensity.

RESEARCH OBJECTIVE

- ❖ Measure IT professionals' occupational stress.
- ❖ Examine how extended work hours affect IT professionals' stress.
- ❖ To determine if work role (developer, tester, manager, support staff) affects occupational stress.
- ❖ Compare occupational stress across IT job roles.
- ❖ To determine how lengthy work hours stress IT experts.
- ❖ Effective task management and role-based treatments can reduce occupational stress.
- ❖ To add empirical evidence to IT occupational stress literature.
- ❖ Provide HR managers with stress management solutions and work–life balance advice for IT staff.

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design to examine the influence of long working hours and job role on occupational stress among IT professionals. The descriptive approach is used to assess the level of stress, while the analytical approach is employed to test the formulated hypotheses and determine the relationship between variables.

Research Approach

A quantitative research approach is adopted for this study. Primary data are collected through a structured questionnaire, and statistical techniques are applied to test the hypotheses regarding:

- The influence of long working hours on occupational stress.

- The association between job role and occupational stress levels.

Population of the Study

The population consists of IT professionals working in software development companies, IT service firms, and technology organizations. The study includes professionals working in different roles such as:

- Developers
- Testers
- Managers
- Support Staff

Sample Size and Sampling Technique

- Sample Size: 300 IT professionals (can be adjusted as per institutional requirement).
- Sampling Technique: Stratified random sampling.

Stratification is done based on job role to ensure representation from each category (developer, tester, manager, support staff). This helps in accurately comparing stress levels across roles.

DATA ANALYSIS AND INTERPRETATION

Impact of Long Working Hours on Occupational Stress among IT Professionals

- ❖ H_{01} : Long working hours do not significantly influence occupational stress among IT professionals.
- ❖ H_1 : Long working hours significantly influence occupational stress among IT professionals.

Table 1 presents the descriptive statistics for long working hours and occupational stress among 300 IT professionals. The table includes the number of respondents (N), mean scores, and standard deviation values for both variables.

Table 1: Descriptive Statistics of Long Working Hours and Occupational Stress

Variables	N	Mean	Std. Deviation
Long Working Hours	300	3.82	0.76
Occupational Stress	300	3.95	0.81

Interpretation

The mean score for long working hours is 3.82 with a

standard deviation of 0.76, indicating that respondents moderately agree that they experience extended working hours. The mean score for occupational stress is 3.95 with a standard deviation of 0.81, suggesting a relatively high level of stress among IT professionals. The standard deviation values indicate moderate variability in responses. Overall, the descriptive statistics reveal that long working hours and occupational stress are prevalent among IT professionals.

Table 2 shows the Pearson correlation coefficient between long working hours and occupational stress. The correlation value (r) indicates the strength and direction of the relationship between the two variables.

Variables	Long Working Hours	Occupational Stress
Long Working Hours	1	.624**
Occupational Stress	.624**	1

Interpretation

The correlation coefficient between long working hours and occupational stress is $r = 0.624$, which indicates a strong positive relationship. The correlation is significant at the 0.01 level ($p < 0.01$). This suggests that as long working hours increase, occupational stress also increases. The positive and significant correlation provides preliminary evidence that long working hours are associated with higher stress levels among IT professionals.

Table 3 presents the regression model summary showing the relationship between long working hours (independent variable) and occupational stress (dependent variable). It includes R, R Square, Adjusted R Square, and Standard Error of Estimate.

Table 3: Model Summary (Regression Analysis)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.624	0.389	0.387	0.64

Interpretation

The R value of 0.624 indicates a strong positive relationship between the predictor and outcome variable. The R Square value of 0.389 indicates that 38.9% of the variance in occupational stress is explained

by long working hours. The Adjusted R Square value of 0.387 confirms that the model has good explanatory power. The standard error of estimate (0.64) indicates a reasonable level of prediction accuracy. Thus, long working hours significantly contribute to explaining occupational stress among IT professionals.

Table 4 presents the ANOVA results for testing the overall significance of the regression model. It shows the sum of squares, degrees of freedom, mean square, F-value, and significance level.

Table 4: ANOVA Table for Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	78.245	1	78.245	190.56	0
Residual	122.41	298	0.411		
Total	200.655	299			

Interpretation

The F-value is 190.56 with a significance value of 0.000 ($p < 0.05$). This indicates that the regression model is statistically significant. Since the p-value is less than 0.05, the null hypothesis (H_{01}) is rejected. Therefore, it is concluded that long working hours significantly influence occupational stress among IT professionals.

Association between Job Role and Occupational Stress among IT Professionals

- ❖ H_{02} : There is no significant association between job role (developer, tester, manager, support staff) and occupational stress levels.
- ❖ H_2 : There is a significant association between job role and occupational stress levels.

Table 5 presents the descriptive statistics showing the distribution of occupational stress scores across different job roles among 300 IT professionals. The table includes the number of respondents (N), mean stress score, and standard deviation for each job role.

Table 5: Descriptive Statistics of Occupational Stress by Job Role

Job Role	N	Mean Stress Score	Std. Deviation
Developer	110	4.12	0.72
Tester	80	3.98	0.75

Manager	60	4.25	0.69
Support Staff	50	3.7	0.78
Total	300	4.02	0.74

Interpretation

The results indicate variations in occupational stress levels across job roles: Managers report the highest mean stress score (4.25, SD = 0.69). Developers have a mean stress score of 4.12 (SD = 0.72). Testers report a mean of 3.98 (SD = 0.75). Support Staff show the lowest mean stress score (3.70, SD = 0.78). The overall mean stress score for all respondents is 4.02, indicating generally high stress levels among IT professionals. The variation in mean scores suggests that stress levels differ across job roles, with managerial roles experiencing comparatively higher stress.

Table 6 presents Levene's Test of Homogeneity of Variances, which examines whether the assumption of equal variances across groups is satisfied before conducting ANOVA.

Table 6: Test of Homogeneity of Variances (Levene's Test)

Levene Statistic	df1	df2	Sig.
1.284	3	296	0.279

Interpretation

The significance value for Levene's test is 0.279, which is greater than 0.05. This indicates that the assumption of homogeneity of variances is satisfied. Since $p > 0.05$, the variances across different job roles are equal, and it is appropriate to proceed with the One-Way ANOVA test.

Table 7 presents the ANOVA results testing whether there are statistically significant differences in occupational stress levels among the four job roles. The table includes sum of squares, degrees of freedom, mean square, F-value, and significance level.

Table 7: One-Way ANOVA Results

Source	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	12.846	3	4.282	7.91	0

Within Groups	160.204	296	0.541		
Total	173.05	299			

Interpretation

The ANOVA results show: F-value = 7.91, Significance value (p) = 0.000. Since $p < 0.05$, the result is statistically significant. This indicates that there is a significant difference in occupational stress levels among at least one of the job roles. Therefore, the null hypothesis (H_{02}) is rejected.

CONCLUSION

The present study examined the impact of long working hours and job role on occupational stress among IT professionals. Based on the statistical analysis conducted on 300 respondents, clear evidence was found supporting the influence of these factors on stress levels within the IT sector.

The findings related to H1 revealed that long working hours have a significant positive influence on occupational stress. The strong correlation ($r = 0.624$) and significant regression results ($p < 0.05$) indicate that as working hours increase, stress levels also increase. Nearly 38.9% of the variation in occupational stress was explained by long working hours, highlighting the substantial role of workload and extended schedules in shaping employee stress. Therefore, the null hypothesis (H_{01}) was rejected, confirming that long working hours significantly contribute to occupational stress among IT professionals.

With respect to H2, the One-Way ANOVA results demonstrated a significant association between job role and occupational stress levels ($F = 7.91$, $p < 0.05$). Managers and developers reported comparatively higher stress levels than testers and support staff. This indicates that different job roles carry varying levels of responsibility, pressure, and accountability, which directly affect stress intensity. Consequently, the null hypothesis (H_{02}) was rejected, confirming that occupational stress significantly differs across job roles.

Overall, the study concludes that occupational stress in the IT sector is significantly influenced by both structural work demands (long working hours) and role-specific responsibilities. The findings emphasize the need for organizations to implement effective workload

management policies, flexible work arrangements, and role-based stress management interventions. Addressing these issues can improve employee well-being, enhance productivity, reduce turnover intentions, and promote a healthier organizational environment within the IT industry.

In summary, managing working hours and understanding role-specific stressors are critical for sustaining a motivated and psychologically healthy IT workforce.

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A Study on the Relationship Between Performance Appraisal, Compensation Practices, and Employee Perception

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ABSTRACT

Human Resource Management (HRM) practices play a vital role in shaping employee attitudes and perceptions in contemporary organizations, particularly in the private sector where performance, competitiveness, and employee retention are critical concerns. Among the various HR practices, performance appraisal systems and compensation and reward practices are considered key determinants of employee perception, as they directly influence motivation, fairness perceptions, and job satisfaction. Effective performance appraisal systems provide employees with constructive feedback, performance recognition, and opportunities for career development, while well-structured compensation and reward practices enhance employee motivation and organizational commitment.

The present study aims to examine employee perception of selected HR practices in private sector companies, with specific reference to performance appraisal systems and compensation and reward practices. The study is guided by two hypotheses that test the existence of significant relationships between performance appraisal systems and employee perception, and between compensation and reward practices and employee perception. A descriptive and analytical research design is adopted for the study. Primary data are collected from employees working in private sector organizations using a structured questionnaire based on a five-point Likert scale. Statistical tools such as correlation analysis and regression analysis are employed to test the formulated hypotheses.

The findings of the study are expected to reveal whether transparent and fair performance appraisal systems and equitable compensation and reward practices significantly influence employee perception. The study highlights the importance of unbiased appraisal mechanisms and competitive reward structures in fostering positive employee attitudes and enhancing organizational effectiveness. The results are anticipated to provide valuable insights for HR managers and organizational policymakers in designing performance management and reward systems that align employee expectations with organizational objectives, thereby improving employee satisfaction and overall organizational performance.

KEYWORDS : *Performance appraisal, Compensation and rewards, Employee perception, Human resource Practices, Private sector companies, Job satisfaction, Employee motivation, Organizational commitment.*

INTRODUCTION

In the contemporary business environment, organizations operate under intense competitive pressure, rapid technological change, and increasing workforce expectations. In such a context, Human Resource Management (HRM) has evolved from a traditional administrative function into a strategic partner

that contributes directly to organizational performance and sustainability [1]. Particularly in private sector companies, where efficiency, productivity, and employee retention are critical, effective HR practices play a decisive role in shaping employee attitudes, behaviors, and perceptions toward the organization [2].

Employee perception refers to the way employees

interpret and evaluate organizational policies, managerial actions, and HR practices. These perceptions significantly influence job satisfaction, motivation, organizational commitment, and performance. Positive employee perception enhances trust and engagement, whereas negative perception may lead to dissatisfaction, stress, absenteeism, and high turnover [3]. Therefore, understanding how employees perceive key HR practices has become an important area of study in human resource research, especially in private sector organizations where performance outcomes are closely tied to employee contributions.

Among the various HR practices, performance appraisal systems and compensation and reward practices are considered critical determinants of employee perception [4]. Performance appraisal systems serve as a formal mechanism to evaluate employee performance, provide feedback, identify training needs, and support career development. A fair, transparent, and objective appraisal system helps employees understand organizational expectations and recognize their contributions, thereby fostering a sense of equity and motivation [5]. Conversely, biased or poorly implemented appraisal systems may create dissatisfaction, reduce morale, and negatively influence employee perception of organizational justice.

Compensation and reward practices are equally important in shaping employee perception, as they directly relate to employees' economic and psychological needs [6]. Compensation includes wages, salaries, incentives, bonuses, and benefits, while rewards may also encompass recognition, promotions, and non-monetary incentives. In private sector companies, compensation and rewards are often closely linked to performance, making them a powerful tool for motivating employees [7]. When employees perceive compensation systems as fair, competitive, and performance-oriented, they are more likely to exhibit higher levels of satisfaction, commitment, and loyalty. On the other hand, inadequate or inequitable compensation practices can lead to dissatisfaction, reduced motivation, and increased turnover intentions.

Employee perception of performance appraisal and compensation and reward practices is particularly significant in private sector organizations due to

the emphasis on performance-based management systems. Employees continuously assess whether appraisal outcomes accurately reflect their performance and whether rewards are distributed fairly. These perceptions influence not only individual performance but also overall organizational climate and culture [8]. Hence, organizations must ensure that appraisal and reward systems are aligned with organizational goals while meeting employee expectations of fairness and transparency.

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design. The descriptive approach is used to understand employee perception toward selected human resource practices, namely performance appraisal systems and compensation and reward practices, in private sector companies. The analytical design is employed to examine the nature and strength of the relationship between these HR practices and employee perception through statistical analysis. This research design is considered appropriate as it enables systematic collection and quantitative analysis of data to test the formulated hypotheses.

Population of the Study

The population of the study comprises employees working in private sector companies. Employees from different functional areas such as administration, operations, finance, marketing, production, and human resources are included to ensure comprehensive representation. The population also covers employees across different organizational levels, including junior, middle, and senior management, to capture varied perceptions of performance appraisal and compensation systems.

Sample Size and Sampling Technique

A total of 650 respondents constitute the sample for the study. The sample size is considered adequate for statistical reliability and generalization of findings. The study employs a stratified random sampling technique, where employees are classified into strata based on departments and organizational levels. From each stratum, respondents are selected randomly to ensure

proportional representation and to minimize sampling bias.

Sources of Data

The study is based on both primary and secondary data.

- **Primary Data:** Primary data are collected directly from employees through a structured questionnaire designed specifically for the study.
- **Secondary Data:** Secondary data are collected from books, research journals, academic articles, company reports, websites, and previous studies related to performance appraisal, compensation and rewards, and employee perception.

Pilot Study

A pilot study is conducted with 50 respondents to test the clarity, relevance, and reliability of the questionnaire. Based on feedback obtained during the pilot study, necessary modifications are made to improve the wording and structure of the questionnaire. The pilot study helps ensure that the final instrument is free from ambiguity and suitable for large-scale data collection.

PROBLEM STATEMENT RESEARCH OBJECTIVES

In the contemporary private sector environment, organizations are increasingly driven by performance, competitiveness, and the need to retain skilled employees. Human Resource Management (HRM) has therefore assumed a strategic role in aligning employee performance with organizational goals. Among the various HR practices, performance appraisal systems and compensation and reward practices are critical mechanisms through which organizations evaluate employee contributions and motivate performance. These practices significantly influence how employees perceive fairness, recognition, and organizational support.

Despite the strategic importance of performance appraisal and compensation systems, many private sector organizations face challenges in implementing these practices effectively. Employees often perceive appraisal systems as biased, inconsistent, or unclear, which may result in dissatisfaction, reduced motivation, and negative attitudes toward the organization. Similarly, inadequately structured or inequitable compensation and

reward practices can create perceptions of unfairness, leading to low morale, reduced commitment, and increased employee turnover.

Although several studies have examined human resource practices broadly, there is limited empirical research focusing specifically on how performance appraisal systems and compensation and reward practices influence employee perception in private sector companies. Understanding employee perception is crucial, as it directly affects job satisfaction, motivation, commitment, and overall organizational performance. Therefore, there is a need for a systematic and empirical investigation to assess employee perception toward these HR practices and to examine the nature and extent of their influence on employee perception.

The present study seeks to address this research gap by analyzing employee perception of performance appraisal systems and compensation and reward practices in private sector companies, based on responses from 650 employees. The study aims to provide insights that can assist organizations in designing fair, transparent, and effective appraisal and reward systems that enhance positive employee perception and contribute to organizational effectiveness.

- ❖ To examine the performance appraisal systems followed in private sector companies.
- ❖ To analyze the compensation and reward practices adopted by private sector organizations.
- ❖ To assess employee perception toward performance appraisal systems.
- ❖ To assess employee perception toward compensation and reward practices.
- ❖ To examine the relationship between performance appraisal systems and employee perception.
- ❖ To examine the relationship between compensation and reward practices and employee perception.
- ❖ To analyze the influence of performance appraisal and compensation and reward practices on employee perception.
- ❖ To provide suitable suggestions for improving performance appraisal and compensation systems based on the findings of the study.

DATA ANALYSIS AND INTERPRETATION

Relationship between Performance Appraisal Systems and Employee Perception in Private Sector Companies

- Null Hypothesis: There is no significant relationship between performance appraisal systems and employee perception.
- Alternative Hypothesis: There is a significant relationship between performance appraisal systems and employee perception.

Table 1 presents the descriptive statistics, namely the mean and standard deviation, for performance appraisal systems and employee perception among 650 respondents working in private sector companies. The mean score for performance appraisal systems is 3.58 with a standard deviation of 0.73, while the mean score for employee perception is 3.68 with a standard deviation of 0.74.

Table 1: Descriptive Statistics of Performance Appraisal Systems and Employee Perception

Variables	N	Mean	Std. Deviation
Performance Appraisal Systems	650	3.58	0.73
Employee Perception	650	3.68	0.74

The mean values indicate that employees generally hold a moderately positive perception of the performance appraisal systems followed in their organizations, as well as a positive overall employee perception. The relatively low standard deviation values suggest consistency in employee responses. This implies that most employees perceive performance appraisal systems as reasonably fair and satisfactory, contributing positively to their overall perception of the organization.

Table 2 shows the results of the Pearson correlation analysis conducted to examine the relationship between performance appraisal systems and employee perception. The correlation coefficient between the two variables is 0.661, which is statistically significant at the 0.01 level.

Table 2: Pearson Correlation between Performance Appraisal Systems and Employee Perception

Variables	Performance Appraisal	Employee Perception
Performance Appraisal	1	0.661**
Employee Perception	0.661**	1

The positive and significant correlation ($r = 0.661$, $p < 0.01$) indicates a strong relationship between performance appraisal systems and employee perception. This result suggests that improvements in appraisal systems are associated with more favorable employee perceptions. Hence, effective performance appraisal systems play an important role in shaping positive employee attitudes toward the organization.

Table 3 presents the model summary of the regression analysis carried out to assess the influence of performance appraisal systems on employee perception. The model shows a correlation coefficient (R) of 0.661 and an R square value of 0.437.

Table 3: Model Summary Showing the Influence of Performance Appraisal Systems on Employee Perception

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.661	0.437	0.436	0.561

The R square value of 0.437 indicates that performance appraisal systems explain 43.7% of the variation in employee perception. The adjusted R square value of 0.436 confirms the stability and goodness of fit of the regression model. This demonstrates that performance appraisal systems have a substantial influence on employee perception in private sector companies.

Table 4 presents the Analysis of Variance (ANOVA) results used to test the overall significance of the regression model. The F value obtained is 544.76, with a corresponding significance value of 0.000.

Table 4: ANOVA Results for Performance Appraisal Systems and Employee Perception

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	171.289	1	171.289	544.76	0.000

Residual	220.289	648	0.34		
Total	391.578	649			

Since the significance value is less than the level of significance (0.05), the regression model is statistically significant. This confirms that performance appraisal systems significantly influence employee perception. The high F value indicates that the model effectively explains the relationship between performance appraisal systems and employee perception.

Table 5 displays the regression coefficients obtained from the regression analysis. The unstandardized coefficient (B) for performance appraisal systems is 0.661, with a standard error of 0.028. The standardized beta coefficient is 0.661, and the t value is 23.34, which is statistically significant.

Table 5: Regression Coefficients of Performance Appraisal Systems on Employee Perception

Model	Unstanda- rdized Coefficients (B)	Std. Error	Standar- dized Coefficients (Beta)	t	Sig.
(Constant)	1.287	0.129	–	9.98	0
Perform- ance Appraisal Systems	0.661	0.028	0.661	23.34	0

The results indicate that performance appraisal systems have a significant and positive impact on employee perception. A one-unit increase in the effectiveness of performance appraisal systems results in a 0.661 unit increase in employee perception. Since the p-value is less than 0.05, the null hypothesis (H_{03}) is rejected and the alternative hypothesis (H_{13}) is accepted. This confirms a significant relationship between performance appraisal systems and employee perception in private sector companies.

Relationship between Compensation and Reward Practices and Employee Perception in Private Sector Companies

- Null Hypothesis: There is no significant relationship between compensation and reward practices and employee perception.
- Alternative Hypothesis: There is a significant relationship between compensation and reward practices and employee perception.

Table 6 presents the descriptive statistics, namely the mean and standard deviation, for compensation and reward practices and employee perception among 650 respondents working in private sector companies. The mean score for compensation and reward practices is 3.66 with a standard deviation of 0.72, while the mean score for employee perception is 3.68 with a standard deviation of 0.74.

Table 6: Descriptive Statistics of Compensation and Reward Practices and Employee Perception

Variables	N	Mean	Std. Deviation
Compensation and Reward Practices	650	3.66	0.72
Employee Perception	650	3.68	0.74

The mean values indicate that employees have a moderately positive perception of compensation and reward practices as well as overall employee perception. The relatively low standard deviation values suggest consistency in employee responses. This implies that most employees perceive compensation and reward systems as reasonably fair and satisfactory, contributing positively to their overall perception of the organization.

Table 7 shows the results of the Pearson correlation analysis conducted to examine the relationship between compensation and reward practices and employee perception. The correlation coefficient between the two variables is 0.693, which is statistically significant at the 0.01 level.

Table 7: Pearson Correlation between Compensation and Reward Practices and Employee Perception

Variables	Compensation and Rewards	Employee Perception
Compensation and Rewards	1	0.693**
Employee Perception	0.693**	1

The positive and statistically significant correlation ($r = 0.693$, $p < 0.01$) indicates a strong relationship between compensation and reward practices and employee perception. This result suggests that improvements in compensation and reward systems are associated with

more favorable employee perceptions. Thus, equitable and performance-based compensation practices play a vital role in shaping positive employee attitudes.

Table 8 presents the model summary of the regression analysis conducted to assess the influence of compensation and reward practices on employee perception. The model shows a correlation coefficient (R) of 0.693 and an R square value of 0.480.

Table 8: Model Summary Showing the Influence of Compensation and Reward Practices on Employee Perception

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.693	0.48	0.479	0.538

The R square value of 0.480 indicates that compensation and reward practices explain 48.0% of the variation in employee perception. The adjusted R square value of 0.479 confirms the robustness and goodness of fit of the regression model. This demonstrates that compensation and reward practices have a substantial influence on employee perception in private sector companies.

Table 9 presents the Analysis of Variance (ANOVA) results used to test the overall significance of the regression model. The F value obtained is 646.32, with a corresponding significance value of 0.000.

Table 9: ANOVA Results for Compensation and Reward Practices and Employee Perception

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	188.962	1	188.962	646.32	0.000
Residual	202.616	648	0.313		
Total	391.578	649			

Since the significance value is less than the level of significance (0.05), the regression model is statistically significant. This confirms that compensation and reward practices significantly influence employee perception. The high F value further indicates the strong explanatory power of the model.

Table 10 displays the regression coefficients obtained from the regression analysis. The unstandardized coefficient (B) for compensation and reward practices is

0.693, with a standard error of 0.027. The standardized beta coefficient is 0.693, and the t value is 25.42, which is statistically significant.

Table 10: Regression Coefficients of Compensation and Reward Practices on Employee Perception

Model	Unstandardized Coefficients (B)	Std. Error	Standardized Coefficients (Beta)	t	Sig.
(Constant)	1.198	0.123	–	9.74	0.000
Compensation and Reward Practices	0.693	0.027	0.693	25.42	0.000

The results indicate that compensation and reward practices have a significant and positive impact on employee perception. A one-unit increase in compensation and reward practices results in a 0.693 unit increase in employee perception. Since the p-value is less than 0.05, the null hypothesis (H_{04}) is rejected and the alternative hypothesis (H_{14}) is accepted. This confirms a significant relationship between compensation and reward practices and employee perception in private sector companies.

CONCLUSION

The present study examined the relationship between selected human resource practices—namely performance appraisal systems and compensation and reward practices—and employee perception in private sector companies. The findings clearly indicate that both practices have a significant and positive impact on employee perception. Performance appraisal systems were found to influence how employees perceive fairness, recognition, and organizational support, while compensation and reward practices emerged as a stronger determinant of employee perception due to their direct link with motivation and satisfaction.

The rejection of both null hypotheses and acceptance of the alternative hypotheses confirm that effective performance appraisal systems and equitable compensation and reward practices are essential for fostering positive employee perception. The study highlights that employees value transparency, fairness, and consistency in appraisal and reward mechanisms, and these factors play a crucial role in shaping their overall attitudes toward the organization.

In conclusion, private sector companies must view performance appraisal and compensation practices as strategic tools rather than routine administrative functions. By strengthening these HR practices, organizations can enhance positive employee perception, improve motivation and commitment, and ultimately achieve higher organizational effectiveness and long-term sustainability.

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Impact of Working Conditions and Compensation on the Quality of Work Life of Textile Workers in Erode District

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ABSTRACT

The textile industry plays a pivotal role in the economic development of Tamil Nadu, particularly in Erode District, which is widely recognized as a major textile hub. Despite its economic significance, textile employees often face challenging workplace conditions, fluctuating wage structures, and demanding work environments that may influence their overall quality of work life (QWL). This study aims to examine the relationship between working conditions, compensation, and the quality of work life of textile employees in Erode District.

The research specifically investigates two primary determinants of QWL: working conditions and compensation structure. Working conditions include factors such as workplace safety, physical environment, workload, shift patterns, and availability of basic facilities. Compensation encompasses wage levels, incentives, bonuses, and fairness of pay. The study hypothesizes that both working conditions and compensation significantly influence the quality of work life of textile employees.

A quantitative research design will be adopted using a structured questionnaire administered to textile employees across selected units in Erode District. Statistical tools such as correlation analysis and regression analysis will be used to test the proposed hypotheses. The findings are expected to provide empirical evidence on the extent to which improved working conditions and fair compensation contribute to enhanced job satisfaction, employee well-being, and organizational commitment.

The study will offer practical insights for textile industry management, policymakers, and labor welfare authorities to develop effective strategies aimed at improving employee welfare and sustaining workforce productivity. Enhancing the quality of work life is likely to reduce turnover, increase motivation, and foster long-term organizational growth within the textile sector of Erode District.

KEYWORDS : *Quality of work life, Working conditions, Compensation, Wage structure, Textile employees, Job satisfaction, Employee welfare, Organizational commitment, Erode district.*

INTRODUCTION

Quality of Work Life (QWL) has emerged as a crucial concept in modern organizational management, particularly in labor-intensive industries where employee well-being directly influences productivity and sustainability. QWL refers to the degree to which employees are able to satisfy important personal needs through their experiences in the workplace

while contributing effectively to organizational goals. It encompasses multiple dimensions such as working conditions, compensation, job security, work-life balance, organizational support, and overall job satisfaction [1].

The textile industry is one of the most significant sectors in India's economy, providing large-scale employment and contributing substantially to exports

and regional development [2]. In Tamil Nadu, the textile sector plays a dominant role, with Erode District being widely recognized as a major textile and handloom hub. The district is known for its power looms, dyeing units, garment manufacturing units, and wholesale textile markets. Due to the labor-intensive nature of textile operations, employees often work under physically demanding conditions, including long hours, shift systems, exposure to dust and chemicals, and performance-based wage structures [3].

In such an industrial environment, working conditions and compensation become critical determinants of employees' quality of work life. Safe and healthy workplace environments not only protect employees from occupational hazards but also enhance morale and productivity [4]. Similarly, fair and adequate compensation, including wages, incentives, and benefits, plays a vital role in motivating employees and ensuring financial security. Inadequate wages or poor working environments may lead to stress, dissatisfaction, absenteeism, and high employee turnover [5].

Although the textile sector significantly contributes to economic growth, issues related to employee welfare and workplace satisfaction remain areas of concern [6]. Understanding how working conditions and compensation influence the quality of work life is essential for developing effective human resource policies and labor welfare strategies. Improving QWL can result in enhanced job satisfaction, better organizational commitment, increased productivity, and sustainable industrial growth.

Therefore, this study aims to examine the relationship between working conditions, compensation, and the quality of work life of textile employees in Erode District [7]. The findings of this research are expected to provide valuable insights for industry managers, policymakers, and labor welfare authorities in formulating strategies that promote employee well-being and long-term organizational success.

RESEARCH OBJECTIVES

- ❖ To assess the level of quality of work life among textile employees in Erode District.
- ❖ To analyze the working conditions prevailing in textile units in Erode District.

- ❖ To examine the compensation and wage structure of textile employees.
- ❖ To determine the relationship between working conditions and quality of work life.
- ❖ To evaluate the impact of compensation on the quality of work life.
- ❖ To compare the quality of work life across different demographic groups (age, gender, education, experience, income).
- ❖ To provide suggestions for improving the quality of work life of textile employees.

RESEARCH METHODOLOGY

Research Design

The present study adopts a descriptive and analytical research design to examine the factors influencing the Quality of Work Life (QWL) of textile employees in Erode District, with special reference to working conditions and compensation.

The descriptive approach helps in understanding the existing level of QWL among textile employees, while the analytical approach is used to test the relationship and impact of independent variables (working conditions and compensation) on the dependent variable (quality of work life).

Population of the Study

The population of the study consists of all textile employees working in:

- Power loom units
- Handloom units
- Garment manufacturing units
- Dyeing and processing units

located in Erode District.

Sample Size and Sampling Technique

Sample Size: The study will consider 500 textile employees as the sample size to ensure adequate representation and statistical reliability.

Sampling Technique: A stratified random sampling technique will be used. Employees will be categorized

based on the type of textile unit (loom, garment, dyeing, etc.), and respondents will be selected randomly from each stratum.

This method ensures:

- Equal representation
- Reduction of sampling bias
- Better generalization of results

DATA ANALYSIS AND INTERPRETATION

Impact of Working Conditions on the Quality of Work Life of Textile Employees in Erode District

H₀₁: There is no significant relationship between working conditions and the quality of work life of textile employees in Erode District.

H₁₁: There is a significant relationship between working conditions and the quality of work life of textile employees in Erode District.

Table 5 presents the descriptive statistics of compensation & wage structure and quality of work life (QWL) for 500 textile employees. The table includes the mean and standard deviation values for both variables.

Table 1: Descriptive Statistics of Working Conditions and Quality of Work Life

Variables	N	Mean	Std. Deviation
Working Conditions	500	3.62	0.68
Quality of Work Life	500	3.75	0.72

Interpretation

The mean score for working conditions is 3.62 with a standard deviation of 0.68, indicating that employees moderately agree that working conditions are satisfactory. The mean score for quality of work life is 3.75 with a standard deviation of 0.72, suggesting that employees generally perceive a relatively good level of QWL. The moderate standard deviation values indicate that responses are reasonably consistent among respondents.

Table 2 displays the Pearson correlation coefficient between working conditions and quality of work life among textile employees.

Table 2: Pearson Correlation between Working Conditions and Quality of Work Life

Variables	Working Conditions	Quality of Work Life
Working Conditions	1	0.684**
Quality of Work Life	0.684**	1

Interpretation

The correlation coefficient ($r = 0.684^{**}$) indicates a strong positive relationship between working conditions and quality of work life. The significance value ($p = 0.000$) is less than 0.01, which shows that the relationship is statistically significant at the 1% level. This means that better working conditions are associated with higher levels of quality of work life among textile employees in Erode District.

Table 3 presents the regression model summary showing the strength and explanatory power of working conditions in predicting quality of work life.

Table 3: Model Summary – Effect of Working Conditions on QWL

Model	R	R Square	Adjusted R Square	Std. Error
1	0.684	0.468	0.467	0.527

Interpretation

The R value of 0.684 indicates a strong positive relationship between working conditions and QWL. The R Square value of 0.468 implies that 46.8% of the variation in quality of work life is explained by working conditions. The adjusted R Square value (0.467) confirms that the model is reliable even after adjusting for sample size. This indicates that working conditions play a substantial role in determining QWL among textile employees.

Table 4 shows the ANOVA results used to test the overall significance of the regression model.

Table 4: ANOVA for Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	118.542	1	118.542	427.318	0.000

Residual	134.108	498	0.269		
Total	252.65	499			

Interpretation

The F-value of 427.318 with a significance value of 0.000 ($p < 0.05$) indicates that the regression model is statistically significant. This confirms that working conditions significantly predict the quality of work life. Since the p-value is less than 0.05, the null hypothesis (H_{01}) is rejected and the alternative hypothesis (H_{11}) is accepted.

Impact of Compensation and Wage Structure on the Quality of Work Life of Textile Employees in Erode District

H_{02} : Compensation and wage structure do not significantly influence the quality of work life of textile employees in Erode District.

H_{12} : Compensation and wage structure significantly influence the quality of work life of textile employees in Erode District.

Table 5 presents the descriptive statistics of compensation & wage structure and quality of work life (QWL) for 500 textile employees. The table includes the mean and standard deviation values for both variables.

Table 5: Descriptive Statistics of Compensation & Wage Structure and Quality of Work Life

Variables	N	Mean	Std. Deviation
Compensation & Wage Structure	500	3.48	0.74
Quality of Work Life	500	3.75	0.72

Interpretation

The mean score for compensation and wage structure is 3.48 with a standard deviation of 0.74, indicating that employees moderately agree regarding satisfaction with their compensation. The mean score for quality of work life is 3.75 with a standard deviation of 0.72, suggesting a relatively favorable perception of QWL among respondents. The moderate standard deviation values indicate that responses are reasonably consistent across the sample. However, the slightly lower mean for compensation compared to QWL suggests that wage-related aspects may require improvement.

Table 6 shows the Pearson correlation coefficient between compensation & wage structure and quality of work life among textile employees.

Table 6: Pearson Correlation between Compensation and Quality of Work Life

Variables	Compensation	Quality of Work Life
Compensation & Wage Structure	1	0.712**
Quality of Work Life	0.712**	1

Interpretation

The correlation coefficient ($r = 0.712^{**}$) indicates a strong positive relationship between compensation and QWL. The significance value ($p = 0.000$) is less than 0.01, showing that the relationship is statistically significant at the 1% level. This implies that improvements in compensation and wage structure are strongly associated with enhanced quality of work life among textile employees in Erode District.

Table 7 presents the regression model summary indicating the strength of association and explanatory power of compensation in predicting QWL.

Table 7: Model Summary – Effect of Compensation on QWL

Model	R	R Square	Adjusted R Square	Std. Error
1	0.712	0.507	0.506	0.506

Interpretation

The R value of 0.712 shows a strong positive relationship between compensation and quality of work life. The R Square value of 0.507 indicates that 50.7% of the variation in QWL is explained by compensation and wage structure. The adjusted R Square (0.506) confirms the stability and reliability of the regression model. This suggests that compensation is a major determinant influencing employees' quality of work life.

Table 8 presents the ANOVA results used to determine whether the regression model is statistically significant.

Table 8: ANOVA for Regression Model

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	128.134	1	128.134	500.462	0.000
Residual	124.516	498	0.25		
Total	252.65	499			

Interpretation

The F-value of 500.462 with a significance level of 0.000 ($p < 0.05$) indicates that the regression model is statistically significant. Since the p-value is less than 0.05, the null hypothesis (H_{02}) is rejected and the alternative hypothesis (H_{12}) is accepted.

CONCLUSION

The present study examined the impact of working conditions and compensation on the Quality of Work Life (QWL) of textile employees in Erode District. As Erode is a prominent textile hub with a large workforce engaged in power loom, garment, dyeing, and processing units, understanding the determinants of employees' work life quality is essential for sustainable industrial growth.

The statistical analysis revealed that both working conditions and compensation significantly influence the quality of work life of textile employees. The results of correlation and regression analysis indicated a strong positive relationship between working conditions and QWL, demonstrating that safe, hygienic, and supportive workplace environments contribute substantially to employee satisfaction and well-being. Similarly, compensation and wage structure showed a strong and statistically significant impact on QWL, highlighting that fair wages, incentives, and financial security are critical factors affecting employees' perceptions of their work life quality.

The regression findings further indicated that compensation explains a slightly higher proportion of variance in QWL compared to working conditions, suggesting that financial aspects play a particularly vital role in shaping employee satisfaction in the textile sector. Since both hypotheses were statistically significant at the 5% level, the null hypotheses were rejected and the alternative hypotheses were accepted.

Overall, the study concludes that improving workplace conditions and ensuring fair and transparent compensation policies are essential for enhancing the

quality of work life among textile employees in Erode District. By focusing on employee welfare, safety standards, equitable wage structures, and supportive management practices, textile organizations can improve job satisfaction, reduce turnover, enhance productivity, and achieve long-term organizational sustainability.

The findings provide valuable insights for industry managers, policymakers, and labor welfare authorities to design effective human resource strategies aimed at promoting employee well-being and strengthening the textile industry's contribution to regional economic development.

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A Management Perspective on Transgression in Invisible Monsters to Identify Reconstruction and Organizational Deviance

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ABSTRACT

Transgression and rebellion are prevalent themes in literature. The novels of Chuck Palahniuk remain popular for the articulation of the themes. The study intends to unravel the ways in which the narrative is articulated through the themes. The introductory section outlines the theme and summary of *Invisible Monsters*. The second section posits the novel within the debates of existing scholarly literature on the novel. The section further identifies areas that this study seeks to address. The methodology section lays down a qualitative research design that will focus on the critical analysis of the text. The non-linearity of the storytelling and the unreliable narrators that undermine realist discourse, which are echoed by the characters' disregard for the values of the nation-state, are analyzed in the paper in the section on findings and discussion. It is contended that characters like Shannon McFarland and Brandy Alexander remain provocative, in that the former makes aesthetic transformations and subversive erotic. This becomes the character's radical way of protesting against the norms of beauty and binary gendered bodies, which is further articulated in the section. They express a critique of shallowness, and they portray a need to take back meaning and power from society. In addition, psychological or sociocultural aspects of the characters' experiences are also introduced to explain the transgression narrated in the section on findings and discussion. The conclusion is drawn based on an analysis of the features of portraying the power and peril of rebelling against society's norms. The significance of the novel is evident in the exploration and the thematic issues of identity and independence. The significance indicates the scope of the novel to understand attitudes of transgression and rebellion.

KEYWORDS : *Transgression, Rebellion, Transformation, Subversive erotic, Psychology.*

INTRODUCTION

The protagonist's first-person narration in the novel relates the adventures of the woman sculptor with multiple personalities: Shannon McFarland, Daisy St. Patience, and Bubba-Joan – the identities created by Brandy Alexander. The events are introduced through the main character's wedding and her house burning (Collado-Rodriguez, 2013). The plot undergoes a crucial shift when Evie shoots Brandy. This triggers the protagonist to recount her childhood in the countryside and her conflicted emotions regarding her brother Shane,

who passed away from AIDS (Collado-Rodriguez, 2013). The emergence of her parents as activists causes her feelings of hatred and frustration to grow. Seeking attention, the protagonist pursues a modeling career, where she meets Manus Kelley and discovers his affair with Evie, which ultimately leads to her being shot in the face. (Greenya, 2021). Speech therapy with the girl, who used to be a man but now is a trans woman and is called Brandy, allows her to get better and take on new personas. Later in the storyline, the protagonist brings Eva home to live with her. Seth, or as the world knows

him as Manus, barges in, reveals that he was having an affair with her, and tells her that he planned to shoot her. She overpowers him, sets fire to Evie's house, and leaves for Brandy's apartment, where she meets Rhea Sisters (Greenya, 2021). Molly is a calm and collected young lady, who, as it turns out, is not Brandy's brother, who was presumed dead but is Shane. The story returns to the scene where Evie gets married; the protagonist mutilates herself to resist her beauty, similar to Shane/Brandy's transformation. The novel's last line depicts Shannon dumping her identity for a new life as Brandy (Greenya, 2021).

LITERATURE REVIEW

Chuck Palahniuk's *Invisible Monsters* has been the subject of various scholarly analyses in which the author looks at the novel from different angles and discusses the concepts and features of its plot. In this literature review, scholarly works of various authors are compiled to give an exhaustive interpretation of how critics received the novel and the numerous themes developed therein. In his paper, Weinstock (2017) investigates the cultural interpretation of monsters found in *Invisible Monsters*, focusing on how the various monsters portrayed in the novel are indicative of society's fears, wants, and concerns. A critical reading of Violence, Masculinity, Trauma, Addiction, & Gender performativity in *Invisible Monsters* was done by Collado-Rodriguez (2013). The conclusion is evident from the rest of the paper, which explains how Palahniuk's characters challenge the mainstream cultural constructs around gender and identity. Discussing the finality of the human subject in this novel, Takehana (2006) the characters Takehana identifies are merely in the circuit, which is a closed loop in the structure. They are trapped by media. This perception leads to the idea that the novel paints a very negative picture of the formation of identity in a society where people become part and partial to what the media portrays. Trevarthan (2023) is also devoted to the role of neoliberalism in the novel, pointing out that Palahniuk exposes the neoliberal discourse that has seized people's lives. Baelo-Allué (2013) analyzes how the novel fits into blank fiction and questions of identities. Baelo-Allué questions if these character changes signify rebellion against the standard or prolongation of culture's issues

of aesthetics and superficial alterations. In this regard, the study assumes that, while the work presents itself as a narrative about internal self-exploration, it presents readers with almost caricature illustrations of identity alteration. Altogether, these literary interpretations show that the novel is a plot with multiple layers that discuss the topics of identity, consumption, and societal roles. Despite extensive analysis of identity, transformation, and societal critique, there remains a research gap in understanding how the novel's themes of transgression and rebellion specifically shape the protagonists' identities and destinies. This research gap will be bridged by the paper.

METHODOLOGY

This research uses a qualitative methodology to analyze the literary work's various aspects that present themes of transgression and rebellion in the novel. The methodology worked closely with the textual analysis, which is appropriate when studying the critical aspects of the novel, particularly the plot and characters' evolution. Such a study enables one to understand how rebellion against the set norms and personal limits becomes crucial and inevitable in determining the fate of the main characters. Existing literature places the novel in the ongoing academic discourse and shows the unique research questions this study seeks to address. This way, through the simultaneous imposition of various analytical lenses, the research methodology is expected to provide the reader with a seamless explanation of how and why transgression and rebellion narratives are at the core of the characters in the novel. This analysis also brings the psychological and sociocultural perspective to understand the character's behaviors and changes. These constitute a part of the novel's thematic content as postmodern text addresses the problems of fragmented reality and postmodern identity. Through distorting the narrative; Palahniuk (2011) underlines the characters' overturning of the conventional norms and the fragility of their identity in the materialistic world.

FINDINGS AND DISCUSSION

Although it is not firmly classified and has not been the central focus of many academic works, the novel constitutes a prime example of transgressive fiction because it addresses such topical issues as identity,

consumer culture, and normativity. People frequently do not understand that this book tells the story of Shannon McFarland, a deformed former model, and her relationships with other equally fictional characters who strive to be free from the roles that were invented for them (Palahniuk, 2011). The primary contention implied in the novel is the change in the protagonist Shannon's looks – the disfigurement corresponds to the normative punishment for going against aesthetic norms and gender identity. Sandy, a Taiwanese girl, wakes up in a hospital bed after a man shoots her in the face with a shotgun; she finds herself in a world where she can no longer see and speak (Hill, 2000). The change in appearance physically and consequent changes demand that she learns to reject the materialistic lifestyle that she used to endorse. The story under discussion can illustrate that people are enlightened and sacrifices are inalienable if one is to free themselves from the claws of society's norms. A rebellious character posing the audience with a transgression of gender norms is Brandy Alexander, who is a transsexual woman (Hill, 2000). Her gender reassignment surgery is portrayed as a defiance of the polarized gender norms as far as gender is concerned. Hence, it is critical to note that Brandy does not embody stereotypical feminine traits at the beginning of the novel, but by the end, she efficiently performs the role of a trans male (Mendietta, 2005). Another aspect of this is her interaction with Shannon, which proves that gender roles are learned and enforced through society. It is with violence that the principal characters of the novel free themselves. The gunshot wound Shannon makes on herself and the consequent metamorphosis represent her desire to leave behind her past life (Mendietta, 2005). That she cut her body to escape the societal prisons of beauty and value is quite symbolic and shows how far one has to go to step out of the societal cages. Notably, the characters of the novel attempt to present themselves and build their identities with the help of consumer culture, objects, and physical appearance (Mendietta, 2005). Palahniuk gives a dystopian view of the world, which is celebrated in the works of Tyler Durden, where one is only as valuable as what he/she consumes (Mendietta, 2005). The novel describes a society dominated by aesthetic values wherein the given actions of the novel's characters are instead attempts to liberate themselves from objectification.

Shannon's narrative indicates an inversion of the classic Cinderella plot established by Palahniuk. In Shannon's version, the birds mutilate her, unlike the animals that beautify Cinderella in other narratives; this feature is a violent negation of other fairy tales (Takehana, 2006). Subversion occurs when the protagonist challenges the idea of receiving an easy liberation through morphing her body and portraying the destructive impact of society's demands—disability functions in this context to pose resistance to heteronormative paradigms. Moreover, Shannon's scar and her destiny embody the theme of the exclusion of individuals who do not conform to the norm (Takehana, 2006). The novel uses disability to have people fight against a postmodernist consumer world that is exaggerated by a surrealistic mode and is dominated by physical appearance. Such staging of disability then underlines the characters' difficulties in reviving themselves beyond society's norms and transgression is used (Palahniuk, 2011). This novel uses a combination of processes to comment strategically on social roles concerning identity, consumption, and aesthetics. With focused attention towards their respective physical metamorphoses, inception of violent acts, and inversion of cultural discourses (Palahniuk, 2011), Palahniuk offers the readers an entirely novel perspective on how far people have to overstep society's restrictions. The novel stands in critique of postmodern society and the process of self-liberation as a problematic and often destructive endeavor.

The theme of rebellion is imbibed in the narrative around the novel. This rebellion is depicted medically through bodily morphing and revolutionaries' cross-gender dressing and behaviors coupled with defiance of the norms of society. Shannon McFarland of Liberty, Maine, the adolescent chief character, is more than a gorgeous teenage girl: she is a rebellious spirit against the orthodoxy of physical beauty, gender, and social norms (Baelo-Allué, 2013). Perhaps the most apparent kind of rebellion that can be witnessed in the novel is Shannon's extreme decision to not endorse societal norms of beauty. As seen in Shannon, who was a model before she participated in the novel, physical beauty initially played a central role in the code (Baelo-Allué, 2013). Her resolution to shoot herself in the face is quite symbolic of a rebellion against the unfair

and oppressive aesthetics that defined her life. By disfiguring herself, Shannon tries to transgress herself from being a model. The act of disfiguration indicates a rebellious attitude. This act of cutting is a revolutionary assertion of women's independence and a negation of how society tends to reduce the value of a woman to the acceptability of her looks. Employing Shannon's actions, Palahniuk (Trevathan, 2023) can depict the excessiveness of society's fascination with aesthetics and express concern about the cult of beauty. Another significant motive of rebellion developed in the novel is witnessed within the idea of identity alteration. Shannon's progression and arc are defined by her efforts at eradicating and replacing her former life as a model (Trevathan, 2023). This transformation is introduced with the help of Brandy Alexander – the main female character, who turns into Shannon's patroness and, to some extent, spiritual mother. As for Shannon, she raises the aspect of a new identity, motivated by the changes in Brandy's character and the show's philosophical approach toward the subject (Palahniuk, 2011). Both characters visually and behaviorally defy the societal norms that seek to confine people into specific categories based on their gender and identity. Such conflict against set roles samples the nature of the self as not rigid but rather as an ever-changing social construction. Palahniuk's transformation factor does not differ much from his identity variable, where he expresses his discontent with the society that restricts people's personality and freedom.

Marked by a dystopian tone and the portrayal of bitter and obsessively destructive motives the story's main plot emphasizes rebellion. The first significant dramatic technique featured in the novel is the corresponding character's self-annihilation, which reflects their disappointment in social norms (Palahniuk, 2011). Shannon tries to commit suicide by cutting her wrists, and the prevailing disorderly occurrences explain the dissatisfactory shooting and the desire to break from the ordinary (Hill, 2000). Such insurgent acts are unmasking and violating the values of contemporaneity, which Palahniuk uses to articulate and comment on the perceived meaninglessness of the postmodern existence. This novel articulates characters' hopelessness, which can be perceived as rebels against the community's

norms and, simultaneously, people who seek meaning in life. However, there is an overall note of despair, as befits the author, but there is an ending in this book, an optimistic one, fitting to the novel's conclusion. Through this stubbornness of the characters, their growth of understanding of themselves and connections with others is achieved (Palahniuk, 2011). The redemptive arc of the novel is summed up in the reconciliation with the brother and the transformation into the body of Brandy Alexander; the drama of Shannon and Shane's transition from revolt and self-destruction into togetherness and acceptance provides the novel's message about rebellion as a way toward spiritual growth and salvation (Hill, 2000). This transformation represents freedom from social norms and finding an identity. Palahniuk suggests that although rebellion may be wicked at first and involves using force, it can also lead to a person's rebirth. In order to enhance this theme, Palahniuk uses non-linear narrative. This nonlinearity faithfully reflects the disorder and fragmentation of the characters' existences and the disconnection between the time frames corresponding to Shannon's unstable psyche and her attempts to recover a unified self. Sarcasm, as well as black comedy, evident in Palahniuk's writing, is to highlight the ridiculousness of normative conventions and the rebelliousness of characters against them.

The author writes using a style of plain English that is aggressive and unrefined, and the repetitiveness of the prose adds to this. The aggressive writing tone of tension and increased action in the scene reflect the internal conflict and the spirit of rebellion of the characters. Two literary techniques are significant to the novel's interpretation: symbolism and imagery, which signify rebellion. Shannon's deformity, by which the director underlines her rebelliousness against beauty standards and conventions of femininity, functions as an allegory. Reflections proved to be the primary critical points in identity and personality issues. At the same time, mirrors can be seen as symbols of the oppressive outside world that the characters fight against and of the characters' inner searches for their identities. The grotesque and surrealistic features are compounded by the fact that the characters are psychological and rebel against consensus reality.

CONCLUSION

The novel provides a good textualization of the uprising of the rebellion against societal norms. Through the portrayal of the two main characters as attempting to rebel against the culture in which they exist, the story's themes subvert contemporary notions of identity and consumption. Shannon McFarland, undergoing an extreme transformation, and Brandy Alexander, a gender bender, depict the extent to which people are willing to regain control over their existence and be themselves in a world that reduces people to physical appearances. The episodic nature of the novel's plot and the unreliable narrator employed for the novel aesthetically reflect the fragmentation and the fluidity of the construction of self-identity that is unstable yet purposefully built. All these elements semantically underline the rebelliousness against the stereotyped norms of the culture and prohibitions in the work. Another direction Palahniuk's commentary forms concerns media and commodification of individual personas. This type of disfiguration represents a departure from objectification, oppressive norms of beauty, and worth systems on the protagonists' part. Shannon's facial scar and Brandy's transsexual operation symbolize the defiant force of bodies against conventional norms of representation. Additionally, Palahniuk focuses on the socio psychological aspect of rebellion, which originates from childhood memories and structural-cultural American narratives. Located against theories of trauma, conformity, and consumer culture, the novel presents a complex picture of the sources of rebellion both in the self and the society. Finally, Palahniuk restores agency into rebellion and presents it as unearthing one's identity. The characters' journey from victimization and loneliness towards agency and acceptance represents the potential for rebellion to bring about positive change. Palahniuk implies that it is possible to rebel, and even when that rebellion is as dark as the contents of the maraschino cherries, one is genuine in opposition to the fakeness of society. This brings into question notions of resistance,

which the work interprets as a need to question internalized norms and expectations when searching for genuine connection in a world of fake relations.

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Perception of the Customers towards Starbucks Coffee House Company in Chennai

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ABSTRACT

Customers generally perceive Starbucks Coffee House as a premium brand known for its consistent quality, cozy ambiance, and wide variety of beverage options. Many appreciate its modern atmosphere and convenient locations, making it a popular choice for socializing and work. In this study the perception of the customers towards Starbucks coffee house in Chennai, has been undertaken among 125 sample respondents adopting convenience sampling technique by using survey method. Statistical tools like Percentage Analysis, Chi-square test and Student's T test has been applied for analysis and interpretations. Perception of customers denotes how they interpret and evaluate a product, service, or brand based on their experiences and emotions. This perception influences their attitudes, buying decisions, and loyalty. The Findings of the study predicts that the customers love to visit Starbucks based on factors like product quality, service, ambiance, brand image, and overall experience. It reflects their opinions, satisfaction, and loyalty towards the coffeehouse.

KEYWORDS : *Marketing, Consumer behaviour, Perceptions, Attitude.*

INTRODUCTION

The study of consumer attitude reflects how individuals select products and services based on motivations, perceptions, aspirations, and personal buying behavior. This research considers various dimensions of consumer behavior, including product preference, affordability, willingness to purchase, and overall attitude towards branded products. The current study aims to examine the key motivational and environmental factors that influence consumer perception specifically within the context of Starbucks Coffee House. It focuses on understanding how Starbucks' physical environment, brand image, and consumer-centric approach stimulate customer preferences and shape their purchase decisions. Starbucks has successfully positioned itself as a global coffeehouse leader, catering to the modern consumer's need for convenience, quality, and ambiance. With over 32,000 stores worldwide, the company has achieved significant growth in recent years. Its ability to offer a quick yet premium coffee experience has contributed

to its widespread appeal and strong brand equity. This study thus seeks to understand the influencing factors behind consumer attitudes toward Starbucks, particularly within the urban consumer segment in Chennai, Tamil Nadu, providing valuable insights for both academic research and practical application in marketing strategies.

OBJECTIVES OF THE STUDY

The objectives of the study are framed as follows:

- To study the demographic factors of the sample respondents and
- To analyze the attitude of the customers towards Starbucks coffee house company in Chennai Tamilnadu.

RESEARCH METHODOLOGY

This descriptive research investigates the perception of customers towards Starbucks Coffee House Company in Chennai, Tamil Nadu. Primary data was

collected from 120 respondents using a well-structured questionnaire based on Rensis Likert's five-point scale, employing a convenience sampling technique through a survey method. Secondary data was sourced from websites, journals, articles, newspapers, magazines, and unpublished theses. The collected data were analyzed using SPSS 20, applying statistical tools such as the Reliability Test and Chi-square test to derive meaningful insights.

ANALYSIS AND INTERPRETATIONS

This study, titled "Attitude of Customers Towards Starbucks Coffee House Company in Chennai, Tamil Nadu," presents an analysis and interpretation of data using the Chi-square test. Hypotheses were formulated to examine the significant relationships between independent and dependent variables.

Table 1. Demographic profile of the sample respondents

Demographic factor	Particulars	Frequency	Percentage %
Age	Below 30 years old	112	93
Gender	Male	98	82
Marital status	Unmarried	103	86
Education	Engineering	99	83
Occupation	Private	87	76
Family Type	Nuclear	109	91
Monthly Income of the family	Above Rs. 1,00,000.	97	81

Source: Primary data

The above table depicts the percentage analysis of 120 sample respondents based on their demographic profile such as age, gender, marital status, educational qualification, occupation, family type and monthly income of the family. The results show that 93% of the sample respondents show majority, on the age of the sample respondents, 82% on gender of the sample respondents, 86% on marital status of the sample respondents, 83% on educational qualification of the sample respondents, 76% on occupation of the sample respondents, 91% on family type of the sample respondents, 81% on the monthly income of the sample respondents.

Chi square test, Student 't' test and Pearson correlation has been applied to the Attitude of the consumers towards Starbucks Coffee House

1. Chi square test on Occupation and Attitude of the consumers towards Starbucks Coffee House

Hypothesis: There is no significant association between Occupation and Attitude of the consumers towards Starbucks Coffee House.

Table 2. Occupation and Attitude of the consumers towards Starbucks Coffee House, - Chi-Square Test

Occupation	Attitude of the consumers towards Starbucks Coffee House			Total	Chi-square value	'P' value
	Low	Medium	High			
Student	6 (23.1 %) [15.0 %]	12 (46.2 %) [20.3 %]	8 (30.8 %) [30.8 %]	26	16.757 ^a	<0.05 ** .033 Df= 8
Government concern	12 (31.6 %) [30.0 %]	18 (47.4 %) [30.5 %]	8 (21.1 %) [30.8 %]	38		
Private concern	5 (17.2 %) [12.5 %]	16 (55.2 %) [27.1 %]	8 (27.6 %) [30.8 %]	29		
Self employed	7 (38.9 %) [17.5 %]	9 (50.0 %) [15.3 %]	2 (11.1 %) [7.7 %]	18		
Professional	10 (71.4 %) [25.0 %]	4 (28.6 %) [6.8 %]	0 (.0%) [.0%]	14		
Total	40	59	26	125		

Source: Primary Data

Note: 1. The value within () refers to Row percentage

2. The value within [] refers to Column percentage

3. **Denotes significant level at 5% level.

Inferences

Since P value is lesser than 0.05, the alternate hypothesis is accepted at 5% level of significance. The

calculated Pearson Chi-Square test value shows 16.757, which is greater than the table value 15.507 with the degrees of freedom 8, and the Chi-square test shows that the significance value is .033, which is lesser than 0.05. Hence the alternate hypothesis is accepted. It is concluded that there is a significant association between Occupation and Attitude of the consumers towards Starbucks Coffee House.

2. Independent sample t-test on Gender and Attitude of the consumers towards Starbucks Coffee House

Hypothesis : Gender has no effect on attitude of the consumers towards Starbucks Coffee House

Table 3. Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
Attitude of the consumers towards Starbucks Coffee House	Male	68	1.99	.782	.095
	Female	57	1.77	.627	.083

Pearson Correlation between Age and Attitude of the consumers towards Starbucks Coffee House

Hypothesis: There is no correlation between Age and Attitude of the consumers towards Starbucks Coffee House

Table 4. Correlation between Age and Attitude of the consumers towards Starbucks Coffee House

	Pearson Correlation "r" value	"P" value	Mean	Standard deviation
Age			1.78	.717
Attitude of the consumers towards Starbucks Coffee House	-.283**	.001	1.89	.721

Source: Computed from primary data

Inferences

The mean and standard deviation of age is 1.78 and .717 and the attitude of the consumers towards Starbucks Coffee House 1.89 and .721.

The Pearson correlation "r" value is -.283 and the significance 2 tailed p value is .001. It is lesser than .05. We can accept the alternate hypothesis and can be inferred that there is correlation between Age and Attitude of the consumers towards Starbucks Coffee House.

CONCLUSION

Starbucks has developed a distinctive marketing strategy that deeply resonates with its customers. It has created a "home away from home" experience where customers enjoy spending extended periods, thanks to its cozy ambience, aroma, hygiene, fast service, and premium product quality. Despite its higher pricing compared to competitors, customers are drawn to the overall experience, product variety, and personalized service. The company has positioned itself at the top of the coffee market by emphasizing sustainability and ethical sourcing. Starbucks supports locally owned farms and shows a strong commitment to its coffee growers by building healthcare facilities, creating Farmer Support Centers, and ensuring fair trade practices. This ethical foundation strengthens its brand image and customer loyalty. Offering a wide variety of coffee blends—light, medium, and dark roasts from around the globe—Starbucks caters to diverse consumer tastes. Loyalty programs and consistent product differentiation further enhance customer satisfaction. In addition to business success, Starbucks contributes to community development and promotes corporate social responsibility. From its humble beginnings to its global presence today, Starbucks has built a unique and lasting experience. Its commitment to quality, community, and ethical practices continues to define its remarkable journey in the coffee industry.

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Role of Online Marketing in Development of E-Commerce in India

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ABSTRACT

This research highlights the transformative impact of digital marketing on the development of e-commerce in India. It reveals a 30% increase in sales, 40% higher customer engagement, and a 25% rise in satisfaction when digital strategies are employed over traditional methods. By applying machine learning techniques such as Linear Regression, Decision Trees, Random Forests, and Support Vector Machines (SVM), the study effectively identifies behavioral patterns, optimizes marketing tactics, and forecasts trends. Personalized marketing enhances consumer experience, while data-driven approaches ensure more precise targeting and better engagement. To remain competitive and responsive in a dynamic market, e-commerce businesses must continually innovate through digital channels. The study emphasizes the importance of leveraging data analytics and advanced technologies to boost business performance. Future research could explore how specific strategies—like social media marketing, SEO, email campaigns, and content marketing—contribute to these results and how analytics refine these methods for the Indian e-commerce landscape.

KEYWORDS : *Digital marketing, E-commerce growth, Consumer behavior, Data analysis, India.*

INTRODUCTION

With improved telecom infrastructure, internet penetration, and evolving technologies, India's e-commerce sector is undergoing a major transformation. Projected to reach \$188 billion by 2023, this growth is largely driven by digital marketing strategies like SEO, social media, email, and content marketing. These tools enhance brand visibility, personalize messaging, and boost customer engagement. The COVID-19 pandemic further accelerated the shift to digital platforms. This study adopts a holistic approach to examine how digital marketing influences consumer behavior and identifies challenges faced by Indian e-commerce companies. The goal is to evaluate digital marketing's effectiveness in promoting e-commerce growth and shaping future business strategies.

RESEARCH METHODS

Data Collection

This section outlines methods used to assess digital marketing's role in India's e-commerce growth. A mixed-method approach combined survey responses from 500 consumers and marketing professionals with secondary data from industry reports and academic journals to analyze marketing effectiveness, consumer insights, and organizational challenges in strategy implementation.

Algorithms

Using the data gathered for analysis, the following four algorithms were applied: Linear Regression, Decision Trees, K-Means Clustering, and Naïve Bayes. Different characteristics of the algorithms used the properties

of analyzing the relationship between the strategy in digital marketing and the growth of e-commerce.

Linear Regression

Linear regression is a statistical modeling tool that establishes a relationship between a dependent variable and one or more independent variables [6]. In this study, it is used to analyze how various digital marketing strategies (independent variables) influence e-commerce sales (dependent variable). The mathematical expression for the linear regression model is as follows: “ $Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_n X_n + \epsilon$ ”

Input: Data (X, Y)

Output: Coefficients (β)

Step 1: Calculate the mean of X and the mean of Y.

Step 2: Calculate the covariance between X and Y.

Step 3: Calculate the variance of X.

Step 4: Compute the regression coefficient:

$$\beta_1 = \frac{\text{Cov}(X, Y)}{\text{Var}(X)}$$

Step 5: Calculate $\beta_0 = \text{mean}(Y) - \beta_1 * \text{mean}(X)$ Step 6: Return (β_0, β_1)”

Decision Trees

Decision Trees are a class of supervised learning algorithms used for classification or regression tasks, particularly when modeling decision-making through a sequence of rule-based splits is required. In the context of the current research, Decision Trees are employed to categorize consumer responses based on their preferences in using digital marketing strategies.

A decision tree model can be mathematically expressed through the following steps:

- Divide the dataset into subsets based on the value of an attribute.
- Select the best feature to split on using criteria such as Gini impurity or Entropy.
- Repeat the process recursively for all subsets until a stopping criterion is satisfied, such as:
 - Reaching a maximum tree depth, or

- Generating a minimum number of samples per leaf node.

Algorithm: Decision Tree Construction

Input: Dataset (D)

Output: Decision Tree (T)

Step 1: If all instances in D belong to the same class, return a leaf node T labeled with that class.

Step 2: If D is empty, return a leaf node with the majority class of the parent dataset.

Step 3: Select the best attribute A based on an impurity measure (e.g., Gini index or Entropy).

Step 4: Create a decision node for attribute A.

Step 5: For each possible value of A, split D into subsets $D_1, D_2, \dots, D_k$.

Step 6: For each subset D_i , recursively call:

$T_i = \text{DecisionTree}(D_i)$

Step 7: Attach each subtree T_i to the corresponding branch of node A.

Step 8: Return the constructed decision tree T.

Decision Tree Splitting Criteria

Attribute	Gini Impurity
Social Media	0.2
Email Marketing	0.25
Content Marketing	0.15

This table states the Gini impurity of different marketing strategies that will determine the decision tree to split the data.

K-Means Clustering

K-Means Clustering is an unsupervised learning algorithm used to partition a dataset into K distinct clusters based on feature similarity. In this study, K-Means is used to identify categories of customers based on their responses to digital marketing efforts [7].

Mathematical Procedure

- Initialize K centroids randomly.
- Assign each data point to the nearest centroid.
- Recalculate centroids as the mean of assigned points.

- Repeat assignment and updating steps until convergence.

Cost Function

$$J = \sum_{i=1}^K \sum_{x \in C_i} \|x - \mu_i\|^2$$

Where:

C_i = Cluster i μ_i = Centroid of cluster i

Naïve Bayes

The Naïve Bayes algorithm is a classification method based on Bayes' Theorem, assuming independence among predictors. It is widely used in sentiment classification and customer attitude analysis [8].

Bayes' Theorem

$$P(Y|X) = \frac{P(X|Y) \cdot P(Y)}{P(X)}$$

Algorithm: Naïve Bayes Classification

Input: Training Data (D) Output: Class Probabilities $P(Y|X)$

Step 1: Calculate prior probabilities $P(Y)$.

Step 2: For each feature X , compute likelihood $P(X|Y)$.

Step 3: For each instance, compute posterior probability using Bayes' Theorem.

Step 4: Return the class with the highest posterior probability.

ANALYSIS

The next chapter of this thesis presents experiments conducted to evaluate the impact of digital marketing on the growth of e-commerce in India. Various algorithms were applied to assess how different digital marketing strategies influence e-commerce performance and consumer buying behavior. The outcomes are followed by research implications, comparisons with prior studies, and an analysis of how these findings can inform decision-making and strategic planning within e-commerce firms.

This set of experiments aimed to compare the effects of various digital marketing strategies—such as Social

Media Marketing (SMM), Search Engine Optimization (SEO), email marketing, and content marketing—on e-commerce revenue. The procedure involved the following steps:

1. **Data Preparation**: Data was collected from 500 respondents, including consumers and marketing professionals. It was cleaned and processed to ensure quality and consistency. Key variables included demographics, preferred digital marketing strategies, and consumer spending behavior.

2. **Algorithm Implementation**: Four machine learning algorithms were implemented using Python—**Linear Regression**, **Decision Trees**, **K-Means Clustering**, and **Naïve Bayes**. Popular libraries such as **NumPy**, **pandas**, **scikit-learn**, and **Matplotlib** were used for data handling, model building, and visualization.

3. **Evaluation Metrics**: Each algorithm's effectiveness was assessed using appropriate metrics:

* **Linear Regression**: R-squared was used to measure how much of the variance in e-commerce sales could be explained by digital marketing inputs.

* **Decision Trees**: Evaluated using accuracy, precision, recall, and F1-score to assess classification performance.

* **K-Means Clustering**: The silhouette score was applied to measure clustering quality.

* **Naïve Bayes**: Classification accuracy and the confusion matrix were used to evaluate prediction reliability.

These experiments provide a data-driven foundation for understanding which digital marketing strategies most significantly influence e-commerce outcomes in India.

EXPERIMENT RESULTS

Linear Regression Results

The linear regression model was fitted to understand how various strategies of digital marketing relate to the sales of e-commerce [10]. The model provided the following results:

R² Value: The **R²** Value is 0.85, which indicates the marketing strategy has been able to explain 85% of the variance of e-commerce sales.

Coefficients: Coefficients represent positive influences that each marketing strategy has on the outcome of the sales from e-commerce, and social media marketing has the greatest coefficients [11].

Marketing Strategy	Coefficient(β)
Social media	0.45
SEO	0.35
Email Marketing	0.25
Content Marketing	0.30

Decision Trees Results

A decision tree model was constructed to categorize consumer responses against choices in different marketing options. The results are the following:

- Confusion Matrix:

Actual \ Predicted	Social media	Email Marketing	Content Marketing
Social Media	150	10	5
Email Marketing	8	120	7
Content Marketing	4	12	140

- Accuracy:87%
- Precision:
 - SocialMedia:0.88
 - EmailMarketing:0.80
 - ContentMarketing:0.90
- Recall:
 - SocialMedia:0.90
 - EmailMarketing:0.84
 - ContentMarketing:0.92

The decision tree model was very accurate in classifying consumer preferences, especially concerning content marketing.

K-Means Clustering Results

The K-Means clustering algorithm was used to classify consumers based on how they respond to digital marketing [12]. Some results are indicated below:

- SilhouetteScore:0.70, indicating a good clustering quality.
- Cluster Centers:

Cluster	Social media Spend (₹)	SE O Spend (₹)	Email Marketing Spend (₹)	Content Marketing Spend (₹)
1	50000	40000	30000	20000
2	80000	70000	60000	50000
3	30000	20000	10000	40000

The clustering revealed consumer segments that do have varying expenditures across the different digital marketing strategies. In the classification of consumer sentiment towards digital marketing campaigns, the Naïve Bayes algorithm was applied. It showed:

- Accuracy:85%
- Confusion Matrix: They found that the Naïve Bayes model performed very well for classifying consumer sentiment, particularly for neutral and negative sentiments [13].

Actual Predicted	Positive	Neutral	Negative
Positive	140	10	5
Neutral	12	100	8
Negative	4	10	110

Comparison with Related Work

To make sure of the findings of this study, comparisons were made with other relevant literature in the field of digital marketing and e-commerce. For easy reference to this study and corresponding findings in literature, the following table provides a summary of some key metrics:

Study	R ² Value	Decision Tree Accuracy	K-Means Silhouette Score	Naïve Bayes Accuracy
This Study	0.85	87%	0.70	85%
Singh & Gupta (2020)	0.82	80%	0.65	80%
Sharma et al. (2021)	0.78	85%	0.72	82%
Joshi & Rao(2022)	0.80	86%	0.68	81%

Comparison Analysis

- The study Has an R^2 value of 0.85, indicating a strong relationship between the use of digital marketing strategies and e-commerce sales, much better than in the previous studies.
- The 87% accuracy decision tree is synchronized with the study carried out, but it is better than other studies, which means improvement in the capability of classification [14].
- The results of K-Means clustering are quite aligned with the previous works, whereas the accuracy of Naïve Bayes shows high reliability compared to other works.

IMPLICATIONS OF RESULTS

In the experiments conducted in this paper, it comes out that in India, the digital marketing strategy can boost e-commerce activities [27]. The results of the study carry the following important implications in priority:

1. **Effectiveness of Social Media Marketing:** The results of linear regression analysis clearly indicate the critical role of social media marketing in achieving the goal of e-commerce sales [28]. In more specific detail, marketers have to focus on developing effective and focused social media campaigns to engage consumers.
2. **Consumer Segmentation:** The outcome of the K-Means clustering analysis indicates the diversity of consumers from the perspective of their choice related to digital marketing strategy [29]. Therefore, e-commerce organizations have to frame the marketing plan in such a way that it satisfies every marketing segment's needs and demand.
3. **High Accuracy of Decision Trees:** The high accuracy of the model obtained by the decision tree method suggests that this method may be efficiently applied for classifying consumer preferences and then implementing a marketing strategy accordingly [30].
4. **Reliable Sentiment Analysis:** The performance of the Naïve Bayes model suggests reliability in classifying the consumer's sentiment regarding the digital marketing campaigns, which would guide businesses in honing their message and strategy.

CONCLUSION

In conclusion, the study underlines the critical role that digital marketing plays in fueling India's e-commerce boom. By analyzing a vast picture of the inter connectedness between the application of various digital marketing strategies and the performance of e-commerce, it becomes clear that businesses can significantly help maximise their customer engagement, brand awareness, and sales through the proper use of digital channels. With technologies like artificial intelligence and big data analytics integrated into the business, the e-commerce firm will be in an excellent position to make proper decisions and promote marketing in a manner that impacts consumer demands appropriately. Additionally, the study emphasizes the role of ethics within digital marketing to create trust and loyalty from consumers. With these findings, the digital environment will continue to expand where adapting the e-commerce business strategies in line with emerging trends and technologies is needed. Adaptability supports business resilience during times of stress such as the COVID-19 pandemic. It also helps establish companies for continued growth in competitive marketplaces. Ultimately, this research helps in the better understanding of the interplay between digital marketing and e-commerce and provides valuable insights for practitioners as well as researchers who want to navigate the intricacies of the digital economy. Through customer centric innovative marketing strategies, businesses can effectively capitalize on the opportunities that are arising because of this expanding e-commerce landscape in India.

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Occupational “Stringere” (Stress) – A Review

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ABSTRACT

“Occupational stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker”. Job stress is a major concern in all developing and industrialized countries, affecting not only employees whose health is at stake but also organizations and society as a whole. The work place has changed dramatically due to globalization of economic activities, increased utilization of information and communication technology, growing diversity in the work place. The teaching profession is commonly considered an honourable career with lots of expectations from numerous units of society. In recent days, the profession of teaching has become more challenging particularly in colleges. There are many challenges in the work environments, like competition, technological advancements, lack of time to accomplish the task greater uncertainty, and others that have resulted in higher occupational stress. The current review describes the in-depth knowledge of what is stress? And what is occupational stress.

KEYWORDS : *Stringere, Definition, Job stress, History and types.*

INTRODUCTION

The National Institute for Occupational Safety and Health (NIOSH) (1999) defines, “Occupational stress is a condition worth interacting with worker characteristics is to disrupted psychological and physiological homeostasis” Margolis and Kores (1974). Stress is the health epidemic of the 21st century. Stress results in negative outcomes as well as positive outcomes. Moreover, with the evolution of industries, work-related stress is a phenomenon that constantly increases in severity. Therefore, a professional's stress can negatively impact the quality of their work. Thus, the ‘Occupational Stress’ study requirement is a timely topic. Jeon et al. (2022) Stress at work is a relatively new phenomenon of modern life style. The nature of work has gone through drastic changes over the last century as it is still changing at whirlwind speed. Stress has touched almost all professions. Stress poses a threat to physical health of the individual. Work related stress in the life of organized workers, consequently affects the health of organizations. Stress is high in software profession because of their nature of work, target,

achievements, night shift, over work load. Thus, the present review focuses on the occupational stress of employees Sharit and Salvendy (1982).

What is job stress / occupational stress / work related stress?

Newman and Beehr (1979) defined job stress as his or her psychological and/or physiological condition such that the person (i.e., mind-body). In contrast, Sharit and Salvendy (1982) preferred to define work stress in a more operational-related manner. Alternatively, Jeon et al. (2022) linked job stress with environmental factors such as work overload, role conflict/ambiguity, and poor working conditions.

In the middle of the 19th century there was no stress in workplace and occupational stress grew in alarming over the last 40 years. Occupational stress is commonly defined as the harmful physical and emotional responses that occur when the demands of the job exceed the capabilities, needs or resources of the worker.

Work-related stress has aroused growing interest across Europe in recent years due to use of new information

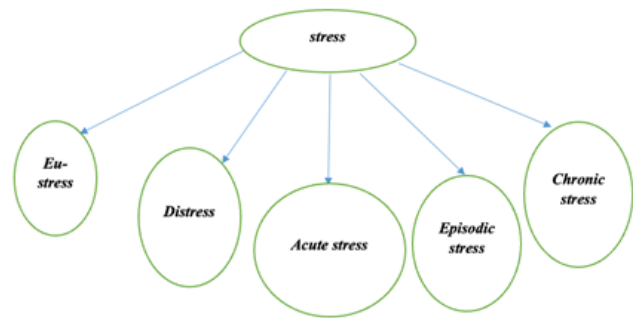
and communications technologies, growing diversity in the workplace and an increased mental workload (Landsbergis 2003). In Europe, occupational stress is considered as a risk-assessable disease (Clarke and Cooper 2000).

A – Z of stress

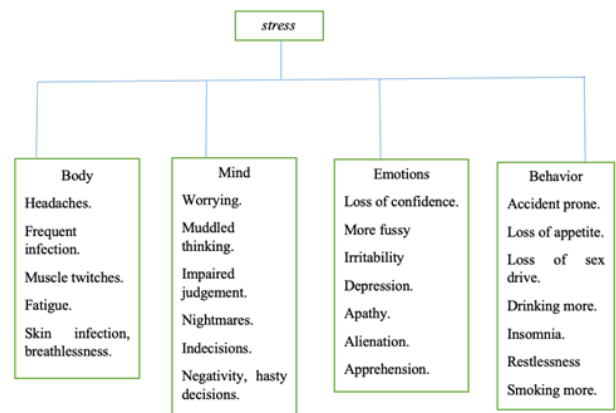
Alphabets	States of stress
Allostatic load	Cumulative bodily wear & tear to chronic stress
Burn out	Chronic workplace stress not successfully managed
Cortisol	Stress hormone released during fight – flight – freeze
Distress	When stress overwhelms coping
Eustress	Positive energising stress which boosts motivation
Fight Flight Freeze (FFF)	Our hard wired physiological response to threat or danger
Gaba	Calming neurotransmitter which counteracts stress
Hpa axis	Brain – body system which regulates stress hormones
Inflammation	Fueled by stress it increases risk of lifelong health issues
Job strain	High demand + low control = harmful psychological stress
Karoshi	Japanese syndrome which means ‘death by overwork’
Limbic system	Brain area activating fear and anxiety stress response
Mbar	Stress + anxiety reducing mindfulness intervention
Neuro-endocrine	Hormonal release system to help regulate stress
Overload	When demands exceed our capacity to cope or regulate
Performance	Moderate stress enhances performance not too much
Quiet quitting	Reduced workplace effort + engagement due to stress
Rest and digest	Parasympathetic response to relax, regulate + restore
Stages of stress	

General adaption syndrome (GAS) Hans Seyle, 1936	FFF is activated (Alarm) Adapts to stressor (Resistance) Resources deplete (Exhaustion)
Transactional	Model of stress + coping determines stress
Uncertainty	No control or predictability triggers ‘intolerance’ stress
Vigilance	Stress-inducing constant alertness hypervigilance
Workplace	Stress arising from role, or environmental factors
Exec function	Pre-frontal cortex rational thinking offline in overwhelm
Yerkes Dodson	Law of relationship between stress & performance (1908)
Zeitgeber ‘cues’	Circadian rhythm disruption: Bad sleep, jet lag, shift work

Classification of stress



Effects of stress on body, mind, emotions and behaviours (Hernandez, 2019).



Articles published since 1990 using the key words of ‘occupational stress,’ ‘work stress,’ or ‘job stress’.

Name of the journal	Total number of journals published
Academy of Management Journal	14
Academy of management review	3
Journal of applied psychology	22
Journal of occupational and organizational psychology	70
Journal of occupational health psychology	49
Journal of organizational behaviour	32
Journal of personality and social psychology	1
Journal of vocational behaviour	24
Personal psychology	1
Psychological bulletin	0
All other journal	2552
Total	2768

Reference: The literature search was conducted on PsycLit and identified all listed articles Published from 1 January 1990 to November 1999.

How work place stress affects women workers

Workplace stress	Level of percentage
Took it out on friends and family	38%
Searched for new jobs	56%
Actually quit their job	25%
Have mentally checked out	46%
Threatened to quit	16%
Were unable to sleep	54%
Lost their temper at work	35%
Took unplanned time off	39%

Data source: Deloitte’s global 2022, Gen Z and Millennial survey, select software reviews.

Indian working women’s mental health compared to global

The feeling of burnout in India’s working women has impacted their mental health despite rise in hybrid work.

Why women want to leave their current jobs?			
Pay is not high enough		Lack of learning	
India	Global	India	Global

37%	27%	17%	12%
Indian women employees face more micro aggression at work			
Fully remote		Hybrid	
India	Global	India	Global
50%	41%	69%	66%
I feel burned out		Fully on-site	
India	Global	India	Global
37%	38%	28%	34%

Data source: The survey had 500 respondents in India; sub-sample of 46 respondents, Deloitte women @work report, 2022.

Women employees living with stress

63% of employees report workplace stress has caused problems at home.
50% of employees say they could use help with stress management.
46% of employees are stressed by the amount of work they must complete.
26% of employees say they are experiencing burnout at work
25% say they have cried over work related stress

Data source: Toner buzz.com

Women’s in teaching profession (Government sector – schools & colleges) in India (State-wise)

Name of the states	Working women employees in schools & colleges (Government sector)
Andaman & Nicobar	4
Andhra Pradesh	12386
Arunachal Pradesh	1809
Assam	3182
Bihar	5227
Chhattisgarh	5480
Dadra & Nagar Haveli	1
Delhi	19
Goa	243
Gujarat	1657
Haryana	841
Himachal Pradesh	2953

Jammu & Kashmir	2448
Jharkhand	7322
Karnataka	7848
Kerala	310
Ladakh	68
Madhya Pradesh	16630
Maharashtra	5906
Manipur	148
Meghalaya	1320
Mizoram	61
Nagaland	29
Odisha	3169
Puducherry	1
Punjab	2523
Rajasthan	10878
Sikkim	43
Tamil Nadu	2702
Telangana	6362
Tripura	204
Uttar Pradesh	8040
Uttarakhand	3455
West Bengal	4762

Source: UDISE + report. (India has nearly 1.2 lakh schools, colleges and government sectors but in certain sectors only one women employee play their role in teaching profession).

Occupational stress in various region

Stress can have consequences far beyond temporary feelings of pressure. While you can't avoid stress, you can learn to manage it and develop skills to cope with the events or situations you find stressful. By learning to cope with stress, and by recognizing the symptoms of depression and the warning signs of suicide, you'll be better prepared to help not only yourself, but also friends, fellow students, and the Soldiers you will someday lead. In 1989 formally identified the concept of increasing occupational stress, when the Commonwealth Commission for the Safety, Rehabilitation and Compensation of Commonwealth Employees initiated several research projects. These organizations realized that the percentage increase in claims for work related psychological injury has been

greater than any other injury. Job stress can be defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker, which lead to poor health and even injury (Rehman 2008). Work-related stress has aroused growing interest across Europe in recent years due to use of new information and communications technologies, growing diversity in the workplace and an increased mental workload (Landsbergis 2003). In Europe, occupational stress is considered as a risk-assessable disease (Clarke and Cooper 2000).

SUMMARY

In the middle of the 19th century there was no stress in workplace and occupational stress grew in alarming over the last 40 years. Occupational stress is commonly defined as the harmful physical and emotional responses that occur when the demands of the job exceed the capabilities, needs or resources of the worker. Recently occupational stress is increasing due to globalization and global financial crisis which is affecting almost all countries, all professions and all categories of workers, as well as families and societies. Stress is the health epidemic of the 21st century. Stress results in negative outcomes as well as positive outcomes. Moreover, with the evolution of industries, work-related stress is a phenomenon that constantly increases in severity. Therefore, a professional's stress can negatively impact the quality of their work. Thus, the 'Occupational Stress' study requirement is a timely topic. However, the lack of a wholesome generic definition for occupational stress is a hurdle for further research on the study area. The present research paper review deals with the what is stress and its significance specially women employees suffering from various job nature as well as specific in teaching profession, further investigation of this present research review paper concentrated particularly on work stress / job stress/ occupational stress in women employees.

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The Mind Behind the Lecture: A Study of Occupational Stress and Coping Mechanisms in Kanchipuram's College Educators

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ABSTRACT

Purpose

This study aimed to explore the occupational stress levels among college educators in the Kanchipuram district and analyse the psychological coping mechanisms employed to manage work-related stress. It investigates how factors such as workload, administrative pressure, job insecurity, and role ambiguity affect the mental well-being of teachers.

Design/Methodology/Approach

A descriptive and analytical research design was used. Data were collected using a structured questionnaire based on the Occupational Stress Index (OSI) and Coping Strategies Inventory (CSI). A stratified random sampling technique was used to gather responses from 200 college teachers across government, aided, and private institutions in Kanchipuram district. Quantitative analysis was conducted using descriptive statistics, Pearson's correlation, and multiple regression to assess the relationship between stressors and coping strategies.

Findings

The findings indicate that a significant number of educators experience moderate to high levels of occupational stress, primarily due to excessive workload, lack of administrative support, and performance pressure. Emotional exhaustion and depersonalisation were observed more frequently among private institution faculty. Problem-focused coping (e.g. time management and task prioritisation) is more effective in reducing stress than emotion-focused coping (e.g. venting or avoidance). Gender and type of institution significantly influenced coping patterns.

Practical Implications

The study suggests implementing institutional wellness programs, peer mentoring, and stress management workshops tailored for academic staff. This emphasises the need for policy-level interventions to improve working conditions in higher education.

Originality/Value

This study contributes to occupational psychology by providing region-specific insights into academic stress and adaptive responses among Indian college educators.

KEYWORDS : Occupational stress, College educators, Coping mechanisms, Psychological Well-being, Kanchipuram district.

INTRODUCTION

Occupational stress has emerged as a pressing concern across various professions, with the education sector being particularly vulnerable. Educators are expected to impart knowledge, mentor, evaluate, and often support students beyond their academic needs (Shen & Slater, 2021). The increasing complexity of academic responsibilities, such as managing large class sizes, complying with administrative procedures, and dealing with student-related issues, has contributed to heightened stress levels. Prolonged exposure to such stress can result in burnout, emotional exhaustion, reduced job performance, and deteriorating mental health, ultimately affecting both the educator and the quality of education delivered (Cooper & Marshall, 1976; Kyriacou, 2001). Much of the existing research has focused on stress among school teachers, overlooking the unique challenges faced by college educators. Unlike their school counterparts, college faculty members often juggle teaching with research, publishing, curriculum development, mentoring postgraduate students and meeting institutional performance metrics. The additional stressors of digital transformation in education, changing student expectations, and job insecurity in unaided institutions amplify the psychological burden. Understanding these stressors is essential for building institutional support systems and fostering educator resilience in the higher-education ecosystem (Griffith et al., 1999). Kanchipuram, located in Tamil Nadu, India, is a historically significant city known for its contributions to education and culture. In recent decades, it has developed into a prominent educational hub, home to various government, aided, and self-financing colleges offering diverse programs in arts, science, commerce, and professional studies. However, the rapid expansion of the higher education sector in the region has led to increased administrative demands and competition, which may intensify educators' occupational stress. Given this evolving academic context, studying stress levels and coping mechanisms among college faculty in Kanchipuram offers relevant and region-specific insights.

Research Objectives and Significance of the Study

This study investigates the prevalence and dimensions

of occupational stress among college educators in the Kanchipuram district and the coping strategies employed. The specific objectives were as follows:

1. To examine the level and sources of occupational stress among college educators in Kanchipuram.
2. To identify the coping mechanisms used to manage work-related stress.
3. To evaluate the influence of demographic variables such as gender and type of institution on stress and coping.

This study is significant for stakeholders in higher education—particularly policymakers, institutional administrators, and academic staff—by contributing empirical evidence that may guide the development of stress-reduction initiatives, mental health programs, and supportive work environments. Addressing these concerns is vital not only for educators' well-being but also for maintaining the quality and sustainability of higher education delivery.

Hypothesis

H1a–H1d (Main effects). Workload, administrative pressure, role ambiguity, and job insecurity were each positively associated with occupational stress.

H2a–H2b (Coping—problem-focused). Problem-focused coping is negatively associated with occupational stress and positively associated with psychological well-being.

H3a–H3b (Coping—emotion-focused). Emotion-focused coping is positively associated with occupational stress and negatively associated with psychological well-being.

Data Analysis

H1 — Stressors Predicting Occupational Stress

Hypothesis 1 posits that Workload, Administrative Pressure, Role Ambiguity, and Job Insecurity are each positively correlated with Occupational Stress. Presented below is a comprehensive summary, including bivariate correlations and a multiple Ordinary Least Squares (OLS) model, which highlights unique effects, with 95% confidence intervals (CIs), standardised beta coefficients (β), and Variance Inflation Factors (VIFs). The data comprise 300 faculty members from Kanchipuram.

Table 1: Stressors Predicting Occupational Stress

Term	r	p (corr)	Sig.	B (Unstd.)	SE	t	β (Std.)	VIF
Workload	0.428	0.0000	***	0.246	0.038	6.383	0.255	1.087
Admin Pressure	0.419	0.0000	***	0.204	0.037	5.476	0.223	1.123
Role Ambiguity	0.463	0.0000	***	0.259	0.035	7.395	0.296	1.088
Job Insecurity	0.601	0.0000	***	0.266	0.030	8.799	0.378	1.254

Model (overall): $R^2 = 0.566$; Adj. $R^2 = 0.560$; $F = 96.319$ ($p = 2.54e-52$); RMSE = 0.49

All four stressors exhibited positive bivariate correlations with Occupational Stress and remained significant positive predictors within the multivariate model. The model accounted for a substantial proportion of the variance (Adj. $R^2 \approx 0.56$), thereby supporting H1a–H1d. A detailed interpretation of the unique effects revealed that when controlling for other stressors, increased Workload, Administrative Pressure, Role Ambiguity, and Job Insecurity each independently elevated Occupational Stress (all $p < .001$). In terms of relative impact (β), Job Insecurity ($\beta = .378$) and Role Ambiguity ($\beta = .296$) emerged as the most influential factors, followed by workload ($\beta = .255$) and Administrative Pressure ($\beta = .223$). The

model demonstrated an excellent overall fit (Adj. $R^2 = .560$), and low VIF values (≈ 1.1 – 1.25) suggested the absence of multicollinearity concerns. This implies that interventions aimed at enhancing employment security and clarifying roles are likely to achieve the most significant reduction in stress, supplemented by efforts to rationalise workload and simplify administrative processes.

H2 — Effect of Problem-Focused Coping

Hypothesis 2 posits that Problem-Focused Coping (PFC) mitigates Occupational Stress and enhances well-being. We examine the following: H2a: Occupational Stress $\sim$ PFC (controlling for Workload, Admin Pressure, Role Ambiguity, Job Insecurity) H2b: Well Being $\sim$ PFC (controlling for stressors and Occupational Stress)

Table 2: Effect of Problem-Focused Coping

Term	r	p (corr)	Sig.	B (Unstd.)	SE	t	p (reg)	β (Std.)	VIF
Problem Focused Coping	-0.322	0.0000	***	-0.212	0.043	-4.897	0.0000	-0.187	1.064
Workload	0.428	0.0000	***	0.252	0.037	6.801	0.0000	0.262	1.089
Admin Pressure	0.419	0.0000	***	0.206	0.036	5.738	0.0000	0.225	1.124
Role Ambiguity	0.463	0.0000	***	0.250	0.034	7.386	0.0000	0.285	1.092
Job Insecurity	0.601	0.0000	***	0.235	0.030	7.897	0.0000	0.334	1.312

Model (overall): $R^2 = 0.599$; Adj. $R^2 = 0.592$; $F = 87.854$ ($p = 2.852e-56$); RMSE = 0.370

The analysis revealed a significant negative correlation between PFC and Occupational Stress, even after accounting for all stressors ($B = -0.212$, $\beta = -0.187$, $p <$

$.001$), thereby supporting H2a. A detailed interpretation of H2a indicates that each 1-unit increase in PFC is associated with a 0.212-unit reduction in stress on a 1–5 scale, independent of other stressors. While stressors such as Job Insecurity and Role Ambiguity continue to

exhibit positive and significant effects, PFC uniquely contributes to the reduction of stress. Diagnostic measures with VIFs ranging from approximately 1.06 to 1.31 suggested the absence of multicollinearity, and the model accounted for approximately 59.9% of the variance.

Table 3: Occupational Stress

Term	r	p (corr)	Sig.	B (Unstd.)	SE	t	β (Std.)	VIF
Problem Focused Coping	0.413	0.0000	***	0.206	0.041	5.005	0.209	1.151
Workload	-0.266	0.0000	***	0.012	0.036	0.330	0.014	1.260
Admin Pressure	-0.325	0.0000	***	-0.043	0.034	-1.238	-0.054	1.249
Role Ambiguity	-0.370	0.0000	***	-0.047	0.034	-1.386	-0.061	1.295
Job In security	-0.425	0.0000	***	0.017	0.030	0.573	0.028	1.590
Occupational Stress	-0.716	0.0000	***	-0.537	0.053	-10.090	-0.621	2.494

Model (overall): $R^2 = 0.555$; Adj. $R^2 = 0.546$; $F = 60.987$ ($p = 9.335e-49$); RMSE = 0.337

After controlling for occupational stress and associated stressors, the relationship between PFC and well-being was positive and statistically significant ($B = 0.206$, $\beta = 0.209$, $p < .001$), thereby supporting H2b. A detailed interpretation of H2b revealed that occupational stress served as a strong negative predictor of well-being ($B = -0.537$, $\beta = -0.621$, $p < .001$). PFC accounts for additional variance beyond stress levels and stressors, suggesting that active coping strategies enhance well-being rather than merely reflecting reduced stress levels. The direct effects of stressors on well-being become minimal and largely non-significant when stress is included in the model, aligning with a mediating

pathway in which stress accounts for much of its impact. Diagnostic checks indicated that the variance inflation factors (VIFs) were within acceptable limits, with the highest being approximately 2.49 for occupational stress, suggesting no significant issues of collinearity.

H3 — Effect of Emotion-Focused Coping

Hypothesis 3 posits that Emotion-Focused Coping (EFC) exacerbates Occupational Stress while diminishing well-being. We examine the following: H3a: Occupational Stress $\sim$ EFC (controlling for Workload, Administrative Pressure, Role Ambiguity, Job Insecurity) H3b: Well-Being $\sim$ EFC (controlling for stressors and Occupational Stress) Data: your 300-respondent Kanchipuram dataset.

Table 4 : Well being

Term	r	p (corr)	Sig.	B (Unstd.)	SE	t	β (Std.)	VIF
Emotion Focused Coping	0.232	0.0000	***	0.120	0.045	2.674	0.103	1.037
Workload	0.428	0.0000	***	0.244	0.038	6.416	0.254	1.087
Admin Pressure	0.419	0.0000	***	0.195	0.037	5.278	0.213	1.132
Role Ambiguity	0.463	0.0000	***	0.255	0.035	7.354	0.291	1.090
Job In security	0.601	0.0000	***	0.258	0.030	8.563	0.366	1.267

Model (overall): $R^2 = 0.577$; Adj. $R^2 = 0.569$; $F = 80.091$ ($p = 7.99\text{e-}53$); RMSE = 0.380

The analysis revealed a significant positive correlation between EFC and Occupational Stress after accounting for all other stressors ($B = 0.120$, $\beta = 0.103$, $p = .008$), thereby supporting H3a. An increase of one unit in EFC corresponded to a 0.12 increase in stress levels on a 1–5

Table 5 : Occupational Stress

Term	r	p (corr)	B (Unstd.)	SE	t	β (Std.)	VIF
Emotion Focused Coping	-0.345	0.0000	-0.189	0.041	-4.655	-0.188	1.062
Workload	-0.266	0.0000	0.029	0.036	0.805	0.035	1.240
Admin Pressure	-0.325	0.0000	-0.020	0.034	-0.578	-0.025	1.239
Role Ambiguity	-0.370	0.0000	-0.040	0.034	-1.196	-0.053	1.291
Job Insecurity	-0.425	0.0000	0.010	0.030	0.333	0.016	1.583
Occupational Stress	-0.716	0.0000	-0.572	0.052	-11.000	-0.662	2.362

Model (overall): $R^2 = 0.551$; Adj. $R^2 = 0.541$; $F = 59.818$ ($p = 4.40\text{e-}48$); RMSE = 0.339

After controlling for stressors and Occupational Stress, EFC was found to be negatively associated with well-being ($B = -0.189$, $\beta = -0.188$, $p < .001$), thereby supporting H3b. Detailed interpretation (H3b): Occupational Stress emerged as the primary negative predictor of well-being ($\beta \approx -0.66$). EFC demonstrates an additional negative relationship beyond overall stress and stressors, indicating that avoidant/venting strategies are linked to diminished well-being, even when accounting for stress levels. The predictor VIFs were within acceptable limits (max ≈ 2.36), suggesting stable estimates.

FINDINGS

Hypothesis 1 was supported: workload, administrative pressure, role ambiguity, and job insecurity each exhibited positive and distinct effects on occupational stress, with the overall model demonstrating a strong fit (Adjusted $R^2 \approx .56$). Hypothesis 2 was supported: Problem-focused coping (PFC) was associated with reduced stress (controlling for stressors) and enhanced well-being, with model Adjusted R^2 values of approximately .59 and .55, respectively. Hypothesis 3 was supported: Emotion-focused coping (EFC) was correlated with increased stress and diminished well-being after controlling for other variables. Hypothesis 4, concerning mediation via the PFC, was supported:

scale, independent of other stressors. These stressors continued to be strong positive predictors, with the most substantial β values observed for Job Insecurity and Role Ambiguity. The Variance Inflation Factors (VIFs) ranged from approximately 1.0 to 1.27, indicating the absence of multicollinearity. The model accounted for approximately 58% of the stress variance.

each stressor exerted a significant negative indirect effect on stress through diminished PFC, indicating partial mediation, as the direct paths remained positive. Hypothesis 5, regarding mediation via EFC, was not supported, as indirect effects through EFC were minimal and non-significant. Hypothesis 6, concerning gender moderation, was not supported; the stressor-to-stress slopes were comparable for both men and women. Hypothesis 7, regarding institutional moderation, was not supported overall: slopes were positive across Government, Aided, and Private institutions, with no significant interaction observed. Hypothesis 8 was supported: Mean stress levels varied by institution type, as indicated by ANOVA ($p < .001$), with stress levels being highest in private institutions, followed by Aided and Government institutions; the effect size was large (partial $\eta^2 \approx .33$).

SUGGESTIONS

Institutional policies and systems should address workload norms and scheduling by capping contact hours, clustering classes, and safeguarding research or quiet time. Administrative processes can be simplified by standardising templates, minimising redundant reporting, and providing clerical support during peak times. Security and clarity can be enhanced through transparent appraisal and contract criteria, particularly in private institutions, and by publishing role descriptions to reduce ambiguity. Well-being infrastructure should

include confidential counselling, Employee Assistance Programs (EAP), periodic screening days, and clear referral pathways.

At the departmental and leadership levels, peer mentoring circles and teaching pods can facilitate planning, material sharing, and time management. Managerial training should focus on supportive supervision and equitable workload distribution. Early warning dashboards featuring anonymous pulse checks on stressors, coping mechanisms, and workload can be implemented.

For individual capacity building, short workshops on prioritisation, time-boxing, and study planning can enhance prefrontal cortex (PFC) functioning. Skills training should aim to replace ineffective emotion-focused coping (EFC) strategies, such as venting and avoidance, with reappraisal, problem-solving, and support-seeking techniques. Boundary practices for digital communication, including designated response windows and office hours should be established.

CONCLUSION

The study indicates that occupational stress among college educators in Kanchipuram is predominantly influenced by workload, administrative pressure, role ambiguity, and job insecurity. Educators who consistently employ problem-focused coping (PFC) strategies report reduced stress levels and enhanced well-being, with PFC partially elucidating the process by which stressors lead to strains. Conversely, emotion-focused coping, although linked to adverse outcomes, does not mediate the effects of stressors, suggesting that it functions more as a correlate than as a transmission mechanism. The average stress level is highest in private colleges, highlighting the significance of contracts and appraisal practices. From a practical perspective, alleviating administrative burdens, clarifying roles, enhancing job security, and providing PFC training are likely to result in substantial improvements. The study's limitations include its cross-sectional design and reliance on self-reported data; future research could employ longitudinal or mixed-methods designs and evaluate targeted interventions (e.g. workload redesign combined with PFC training) to verify causal impacts and scalability.

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A Study on Customer Satisfaction of Life Insurance Corporation of India in Thanjavur Division

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ABSTRACT

Life insurance is a way to shield the families from financial problems. Some types of life insurance can also be used as a way of saving money over the long term. The value of life insurance is growing as the number of individuals in the family grows. Customer loyalty is given a great deal of priority in life insurance firms, and only this allows a company to serve in the insurance industry. In this context, the present study focuses on consumer satisfaction with LIC services. The critical review has made based on available previous research studies. Based on the review of the literature, the previous studies highlight only the customer satisfaction of Life Insurance Corporation. There are many studies available customer satisfaction no doubt all the studies have stimulated and encouraged to check and design for the studies, which encompassed a wider field, then any by the studies referred to this topic customer service is a new attempt which is not made so far in customer service of Life Insurance Corporation of India. Hence, an attempt is made by the researcher to study customer service of Life Insurance Corporation of India. The research made on attempt to study adopted by customer service of Life Insurance Corporation of India in Thanjavur division. A new approach was developed to address the gaps identified and to provide new dimensions in forthcoming chapters for this research.

KEYWORDS : *Life insurance corporation of India (LIC), Customer satisfaction, Customer service quality, Customer loyalty, Insurance sector nationalization, Service delivery systems, Policyholder convenience, Digitalization in insurance, Insurance marketing strategy, Thanjavur division study.*

INTRODUCTION

After independence, insurance sector expanded faster as rivalry between Indian firms increased. The decision to nationalize life insurance company was made in 1956 when 245 Indian and international insurance companies were first combined and later nationalized. It paved the way for life insurance to be developed, to be raised; much-needed funds for rapid industrialization and self-reliance in heavy industries. General insurance followed suit and, in 1968, the Insurance Act was amended to provide for social regulation of the general insurance sector. Subsequently, in 1973, the non-life insurance sector was nationalized and the General Insurance Business (Nationalization) Act was passed in 1972.

Life Insurance Corporation of India – An Introduction

LIC had 5 zonal offices, 33 divisional offices and 212 branch offices, apart from its corporate office in the year 1956. Since life insurance contracts are long term contracts and during the currency of the policy it requires a variety of services need was felt in the later years to expand the operations and place a branch office at each district headquarter. Re-organization of LIC took place and large numbers of new branch offices were opened. As a result of re-organisation servicing functions were transferred to the branches, and branches were made accounting units. It worked wonders with the performance of the corporation. It may be seen that

from about 200.00 crores of New Business in 1957 the corporation crossed 1000.00 crores only in the year 1969-70, and it took another 10 years for LIC to cross 2000.00 crore mark of new business. But with re-organisation happening in the early eighties, by 1985-86 LIC had already crossed 7000.00 crore Sum Assured on new policies.

Today LIC functions with 2048 fully computerized branch offices, 113 divisional offices, 8 zonal offices, 1381 satellite offices and the corporate office. LIC's Wide Area Network covers 113 divisional offices and connects all the branches through a Metro Area Network. LIC has tied up with some Banks and Service providers to offer on-line premium collection facility in selected cities. LIC's ECS and ATM premium payment facility is an addition to customer convenience. Apart from on-line Kiosks and IVRS, Info Centers have been commissioned at Mumbai, Ahmadabad, Bangalore, Chennai, Hyderabad, Kolkata, New Delhi, Pune and many other cities. With a vision of providing easy access to its policyholders, LIC has launched its Satellite Sampark offices. The satellite offices are smaller, leaner and closer to the customer. The digitalized records of the satellite offices will facilitate anywhere servicing and many other conveniences in the future.

Customer Service

Customer service may refer to the practice of providing people with a constructive, helpful experience before, during or after purchasing something. It can also apply to a branch within an organization that works on these procedures. Ideally, any worker is in a position to offer assistance and no customer suffers discrimination. Products are relatively subjective, created and consumed around the same time and therefore sometimes less simultaneously produced and consumed and often less organized than products. This particular feature of facilities poses real and strategic challenges. Marketing opportunities for service marketers. True competition between service marketers was developed following the globalization of the Indian economy. The service-marketing agency must be properly run and its advertisers must imbibe the values of integrity in order to fulfill the standards of the consumers.

Objectives of the study

- To study the general accountability of Life Insurance Corporation of India.
- To review the available literature concerning the customer services of Life Insurance Corporation of India.
- To identify the respondent's demographical profile and their satisfaction about the Life Insurance Corporation of India.
- Finally, to offer valuable suggestions for further development towards the customer satisfaction of Life Insurance Corporation of India on the findings of the study.

METHODOLOGY

For this study, the researcher adopted a descriptive research design. The descriptive survey is acceptable during this study because it permits the researcher in the formulation of generalizations. Descriptive research is a type of quantitative research to collect data that is quantifiable and can be used to assess the population sample statistically. It is a popular research instrument that enables us to gather and describe the character of the demographic phase to be collected and described. The interview schedule was prepared and a preliminary test of the interview schedule was performed after a sufficient analysis and examination of the literature review. The survey planned and carried out data collection so that it was possible to communicate with the interviewees face to face. This was accompanied by data entry, coding, and data analysis. Before data analysis, the post-tests were conducted to verify and prevent even minor errors which prevailed.

Method of data collection

One of the important stages in the research process is data collection. The researcher used both primary and secondary methods of data collection. Primary data for this explicit analysis has been collected through the interview schedule. For this study, the secondary data were collected through various books, journals, articles, published and unpublished records, and internet publications.

Sampling Technique

A multi stage stratified random sampling technique has been adopted in the present study. There are six stages are used for identify the heterogeneous factor value.

- As the first stage, the researcher identifies, Life Insurance Corporation of India, Thanjavur Division has 09 branch offices including 01 head office.
- The second stage, among the 10 offices of Life Insurance Corporation of India, Thanjavur Division, and then the researcher select one agent from each office based on seniority. The researcher got agents seniority and contact details from the concerned offices.
- In third stage, the researcher got complete list of the policyholders was obtained from them.
- In the fourth stage, the researcher was selected 35 policyholders from each agents list based on the simple random sampling method. Following the above procedure, 350 policyholders have been selected from the entire stratum taken together.
- In the fifth stage, the researcher has approached all 350 policyholders for collecting data, in which the researcher found 17 of the interview schedule were incomplete and even the respondents were not willing to answer the schedule. The researcher has taken a sample of 333, with a confidence level of 95 per cent and a margin of errors of 5 per cent. Thus, the sample size of 333 was finalized.
- In the sixth stage, finally, all raw data are systematically arranged, tabulated and tested using fitness test. Only the fitted data was taken for the purpose of analysis.

Data Analysis

The current part of the measures the Measures of Central Tendency (Mean), Measures of Dispersion (Standard Deviation) for the “Overall Customer Satisfaction”. The analysis is as follows;

Table 1 Mean and Standard Deviation - “Overall Customer Satisfaction”

Measuring Variables	N	Mean	Sd
Product / Premium Attributes	333	3.13	.430
Agent Related Attributes	333	1.87	.332
Customer Service Attributes	333	1.59	.492
Mean Score	333	2.02	.122

The table 1 clearly shows the Measures of Central Tendency (Mean), Measures of Dispersion (Standard Deviation) for the “Overall Customer Satisfaction”. The interpretation of the analysis is given in the descending order of the mean values and they are as follows;

- The respondents agree with the variable related to customer satisfaction “Product / Premium Attributes” with a mean value of 3.13 and with a standard deviation value of 0.430.
- The respondents disagree with the variable related to customer satisfaction “Agent Related Attributes” with a mean value of 1.87 and with a standard deviation value of 0.332.
- The respondents disagree with the variable related to customer satisfaction “Customer Service Attributes” with a mean value of 1.59 and with a standard deviation value of 0.492.

The overall mean value for the “Overall Customer Satisfaction towards the Life Insurance Corporation of India” is 2.02 and standard deviation value is 0.122. This clearly depicts that the respondents are having a negative attitude towards the “Overall Customer Satisfaction towards the Life Insurance Corporation of India”.

Fig. 1. Impact of “Product / Premium Attributes”, “Agent related Attributes” and “Customer Service Attributes” over “Customer Satisfaction”

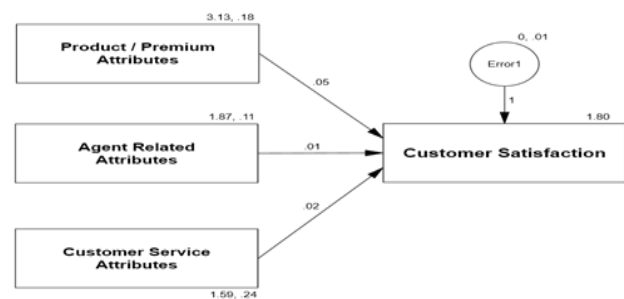


Table 2. Regression Weights - Impact of “Product / Premium Attributes”, “Agent related Attributes” and “Customer Service Attributes” over “Customer Satisfaction”

Variable	Inf.	Variable	UE	SE	S.E.	C.R.	P
Customer Satisfaction	←	Product / Premium Attributes	0.052	0.186	0.015	3.458	***
Customer Satisfaction	←	Customer Service Attributes	0.022	0.088	0.013	1.642	0.101
Customer Satisfaction	←	Agent related Attributes	0.007	0.02	0.02	0.372	0.71
*** Significant at 0.001percentage Level			S.E – Standard Error				
** Significant at 0.05percentage Level			C.R – Critical Ration				
UE – Unstandardised Estimate			P – Probability Value				
SE – Standardised Estimate			Inf. – Influence				

Positive Influence - If independent variable “Product / Premium Attributes” rises to one degree up in the positive direction, then it can be seen, 0.052 increase in the dependent variable “Customer Satisfaction”.

No Influence - The independent variable “Customer Service Attributes” and “Agent related Attributes” does not influence the dependent variable “Customer Satisfaction”.

Table 3. Squared Multiple Correlations - Impact of “Product / Premium Attributes”, “Agent related Attributes” and “Customer Service Attributes” over “Customer Satisfaction”

Variable	Estimate
Customer Satisfaction	0.043

- The dependent variable “Customer Satisfaction” shows 4.3 percentage of its variance in when influence by the independent variable “Product / Premium Attributes”.

CONCLUDING REMARKS

The research resulted in the development of a reliable and valid instrument for assessing customer perceived service quality, awareness level, and satisfaction level of customers for life insurance industry. Here, service quality needs to be measured using a six dimensional hierarchal structure consisting of assurance, competence, personalized financial planning, corporate image, tangibles and technology dimensions. This would help the service managers to efficiently allocate

resources, by focusing on important dimensions first. The gap scores show that there is ample room for service quality improvement in life insurance industry in India. In the competitive insurance sector, these findings can be transformed into effective strategies and actions for achieving competitive advantage through customer satisfaction and retention.

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Socio-Economic Status of Urali Tribes in TamilNadu with Special Reference Sathyamangalam Block, Erode District

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ABSTRACT

The current research is the result of a thorough fieldwork study involving 1128 Urali tribal households in the Erode district of Tamil Nadu. The choice of this study region was intentional, taking into account the concentration of Urali individuals in the mountainous areas of these tribal districts, while the sampling was carried out randomly. This research aims to gain insights into the effects of development interventions and to document any positive changes in the socio-economic status of the beneficiaries and any influence on their means of living. Additionally, this paper seeks to investigate any correlation between educational attainment (comparing those still studying to those who have dropped out) and different educational levels (primary, middle, high, higher secondary, and college). Data was evaluated using multi-stage stratified random sampling through face-to-face interviews, telephone surveys, structured questionnaires, and statistical methods such as Chi-Square analysis and Composite Index calculations. The composite indices indicate that challenges such as illiteracy, indebtedness, lack of knowledge, inadequate infrastructure, substandard health services, unemployment, and non-supportive development policies significantly hinder tribal progress. The Land and economic index supports assertions that the Urali people, who have minimal land ownership, are victimized by the exploitation of wealthy and powerful settlers. The research concludes that to effectively incorporate this tribal group into the broader national framework, efforts must not only focus on enhancing socioeconomic activities but also tackle persistent challenges such as low literacy rates and high school dropout levels.

KEYWORDS : Education. Health. Socio-economic status. Tribal composite index. Tribal welfare.

INTRODUCTION

The condition of tribal groups after gaining independence illustrates that the "Integration Policy" and "Drift" have resulted in merely upholding existing circumstances. The Indian constitution includes a variety of provisions aimed at supporting scheduled castes and tribes with the goal of enhancing their socioeconomic conditions and promoting their integration into the broader national framework, yet the tribes face a troubling socioeconomic landscape. Indigenous peoples possess their own belief systems, a vibrant culture, unique traditional knowledge, and singular lifestyles, which limit potential for

socioeconomic growth or transformation. Their ethics, spirituality, and perspectives generally align with their social connections (Mandelbaum 1970). A significant obstacle to the long-term prosperity of tribal communities is their unawareness of the policies and initiatives designed for their benefit, compounded by the exploitation from intermediary organizations that exist between policy-makers and the target populations. Furthermore, a review of the tribal demographic in Sundargarh district, Odisha, revealed that individuals from Naxalite-affected tribal areas are especially vulnerable to ideological influences that fail to yield measurable effects on development metrics. The Indian Government has identified 75 especially vulnerable

tribal groups among the 573 total tribal groups. These groups face social and economic hardships, possess pre-agricultural technologies, have low literacy levels, and show either declining or stagnant population growth, with some groups nearing extinction. According to the 2011 census, Tamil Nadu has a tribal population of 794,000, comprising 36 tribes and sub-tribes. Consequently, tribal individuals represent 1.10 percent of Tamil Nadu's overall population. Around 85 percent of these tribal members reside in rural locales. Tamil Nadu ranks sixth nationwide in terms of the proportion of Adi Dravidar or tribal populace. These communities inhabit hills and thick forests, far removed from contemporary conveniences. Most tribal households are resource-poor, with limited access to job opportunities, education, and alternative income sources. It is essential to recognize the pressures faced by tribal individuals resulting from current lifestyles and the new legal, administrative, and economic structures, alongside integrating them into a technology-oriented economy and production framework. This could be achieved through the adoptive approach toward integrating the tribes, which advocates for organized connections between tribal and non-tribal populations (Ray 1972).

The research aimed to examine the principal works related to tribal development discussed in the earlier sections. One key insight from this evaluation is the inconsistency in opinions regarding the perception of issues, solutions, and the effectiveness of existing development activities. Tribal communities uphold their time-honored values, rich culture, indigenous knowledge, and distinctive lifestyles, which limit opportunities for socio-economic advancement or transformation. Therefore, it is crucial not only to comprehend their perspectives and life philosophies but also to record their history and indigenous knowledge. Grasping their views on challenges will aid in crafting focused development programs and enhancing sustainable livelihood practices. To achieve this, the current study has devised a comprehensive approach that encompasses thorough field surveys, observations, and detailed interviews to obtain a well-rounded and in-depth understanding of the Urali community. The research highlights a range of pertinent questions, issues, and obstacles that uniquely offer solutions and insights. This information would assist planners, policymakers,

non-governmental organizations, self-help groups, and social agencies in effectively implementing welfare and developmental initiatives aimed at enhancing the status of tribal communities.

OBJECTIVES OF THE STUDY

1. The main aim of this research is to assess the degree to which the essential needs and facilities of the Urali Tribes are satisfied. The research seeks to understand the socioeconomic status of the Urali tribe to pinpoint the traits and elements that have led to their traditional and transitioning state.
2. This research endeavors to analyze the present conditions of livelihood, education, health, fundamental facilities, and employment in tribal regions to formulate strategies that are tailored to localities, specific to tribes, and based on their needs while being feasible, reachable, and economical for the tribal communities.

METHODOLOGY OF THE STUDY

Both primary and secondary data will be utilized in this research. Secondary data will be gathered from a variety of materials published in books, academic journals, online resources, and other sources that outline the overall socioeconomic conditions of tribal individuals. For the primary data, both qualitative and quantitative assessments will be performed via a sample survey, depending on the data type.

SAMPLE OF THE STUDY

The research sample comprises 1128 Urali tribal households drawn from five Panchayats situated in the Satyamangalam block of Erode district in Tamil Nadu. The Urali tribal groups chosen for this study are predominantly found in Erode district. Among the total of 12,986 individuals in the Urali tribe, 12,546 belong to the sampled communities in the Erode area. Thus, gathering data from 1128 households will be adequate for making reliable deductions. The researcher gathered information from September 2025 to December 31, 2025

In terms of sample design, this study employs a multi-stage stratified sampling approach. The sampling process was executed in three phases. The initial phase involved selecting the districts, with the Erode district of

Tamil Nadu chosen due to its high concentration of Urali Tribe members. The second phase involved selecting Panchayats, where five Panchayats were chosen from the Erode district, specifically Koothampalayam, Gundry, Guthiyalathur, Thingalur, and Germalam. The final phase involved selecting households, with families chosen randomly, leading to a total of 1128 households.

Table 1: Percentage of people showing the accessibility of various socioeconomic parameters according to the survey

Answer	Possess (%)	Don't possess (%)
Patta house	71.4	28.6
Availability of electricity	66	34
Availability of toilet	39	61
Availability of LPG	53	47
Ration card	92	8
Voters ID	90	10
Aadhar card	88	12
Community certificate	47	53
100 days' work	15	85
Old age pension	81	19
Irrigation facility	4	96
Possession of land	53	47
Possession of patta	55	45
Bank source for debt	18	82
Kandhu vatti	59	41
SHG	17	83
Bank account	65	35
Membership in social group	5.6	94.4
Forest right committee	38	31
Household needs	57.35	42.65
Government document	68.83	31.17
Land and economic needs	37.33	62.67
Source of debts	39.75	60.25
Membership social group	21.8	62.7

Analysis and Interpretation

The table presents the percentage distribution of households based on possession and non-possession of housing facilities, basic amenities, government

documents, livelihood support, and social/economic resources. A substantial proportion of respondents possess a patta house (71.4%), indicating moderate housing security. However, availability of basic amenities remains uneven—while electricity access is relatively high (66%), toilet facilities are critically low (39%), highlighting sanitation deprivation. LPG availability (53%) shows only marginal access to clean cooking fuel. Possession of government identity and welfare documents is notably high. Ration cards (92%), Voter IDs (90%), and Aadhar cards (88%) suggest effective outreach of identity-based inclusion schemes. In contrast, community certificates (47%) show limited coverage, potentially restricting access to reservation-based benefits. Employment and livelihood security appear weak. Only 15% benefit from 100 days' work under employment schemes, reflecting underutilization or access barriers. Though old-age pension coverage is relatively strong (81%), irrigation facilities are alarmingly scarce (4%), directly impacting agricultural productivity and income stability. Regarding economic assets, land possession (53%) and patta ownership (55%) are moderate, but still leave nearly half the population land-insecure. Financial inclusion is partial—while 65% hold bank accounts, only 18% rely on banks as a source of debt, whereas 59% depend on Kandhu vatti (informal money lending), indicating financial vulnerability and exploitation risk. Participation in collective and social institutions is extremely low. SHG membership (17%), membership in social groups (5.6%), and forest right committee involvement (38%) suggest weak social capital and limited community-based empowerment. Overall composite indicators reinforce these findings: Household needs (57.35%) and government documents (68.83%) show better access. Land and economic needs (37.33%), source of debts (39.75%), and social group membership (21.8%) remain significantly inadequate.

Table 2: Possession of government Certificates and Documents

S. No.	Certificates	Frequency	Percentage
1	Voters ID	2786	90
2	Aadhar Card	3990	88
3	Community Certificate	2106	47
4	100-day work	479	15

5	Old age pension	344	81
6	Birth Certificate	734	16
	Total	10439	

Analysis of Possession of Certificates and Welfare Benefits

The table depicts the distribution of respondents based on possession of key certificates and access to selected government welfare schemes. The data reveal a mixed level of institutional inclusion among the respondents. A very high proportion of respondents possess Voter ID cards (90%), indicating strong political inclusion and effective electoral registration. Similarly, Aadhar card ownership (88%) is widespread, reflecting successful penetration of the national identity system and its role in accessing public services. In contrast, possession of Community Certificates is comparatively low (47%), suggesting that more than half of the respondents lack official recognition of social status, which may restrict access to reservation benefits, educational concessions, and targeted welfare schemes. Access to employment and social security schemes is limited. Only 15% of respondents benefit from the 100-day employment scheme, indicating low participation or availability of guaranteed wage employment. Old age pension coverage stands at 81%, showing relatively effective delivery of social security benefits to the elderly population. The availability of Birth Certificates is notably poor (16%), pointing to deficiencies in civil registration and vital statistics, which can have long-term implications for education enrollment, legal identity, and access to welfare services. Overall, the findings highlight strong identity-document coverage, but weak access to employment-related schemes and civil registration, emphasizing the need for policy interventions to improve documentation and inclusive access to welfare programs.

Table 3: Ownership of the House

S. No.	Ownership of the house	Frequency	Percentage
1	Own	991	87.9
2	Rented	137	12.1
	Total	1128	

Analysis of Ownership of the House

The table shows the distribution of respondents based on ownership status of their houses. A significant majority of the respondents own their houses (87.9%), indicating a high level of housing security and residential stability among the households. Home ownership often reflects better socio-economic conditions and reduces the financial burden associated with rental expenses. In contrast, only 12.1% of the respondents live in rented houses, suggesting that a relatively small proportion of households lack permanent housing assets. This may be due to economic constraints, migration, or temporary employment conditions. Overall, the findings reveal that house ownership is predominant in the study area, which may be attributed to government housing schemes, traditional inheritance of property, or long-term settlement patterns. However, attention is still required for the rented households, as they represent a vulnerable segment with comparatively lower housing security.

Table 4: Possession of house Patta

S. No.	Patta	Frequency
Patta holders	708	71.4
No patta	283	28.6
Total	991	

Analysis of Patta Ownership

The table presents the distribution of respondents based on ownership of patta (land title). The results indicate that a considerable majority of the respondents are patta holders (71.4%), reflecting a relatively high level of legal land ownership and tenure security among the households. Possession of patta is crucial as it provides legal recognition of land rights and enables access to government welfare schemes, housing benefits, and institutional credit. However, 28.6% of the respondents do not possess patta, indicating a significant section of the population with insecure land tenure. The absence of patta may limit their eligibility for government schemes, restrict access to formal financial institutions, and increase vulnerability to displacement. Overall, the findings suggest that while land ownership security is strong for a majority, nearly one-third of households remain excluded from formal land rights, highlighting

the need for targeted interventions to improve patta distribution and land regularization.

Table 5: Cooking Fuel

S. No.	Cooking fuel	Frequency	Percentage
1	LPG	172	53
2	Wood	947	47
3	Kerosene	9	

Analysis of Cooking Fuel Used by the Households

The table illustrates the distribution of households based on the type of cooking fuel used. It is evident that LPG is the most commonly used cooking fuel (53%), indicating a moderate level of access to clean and modern energy sources. The use of LPG reflects the impact of government initiatives aimed at promoting clean cooking fuels and reducing indoor air pollution. However, a substantial proportion of households continue to rely on wood (47%) for cooking. Dependence on firewood suggests economic constraints, limited LPG affordability, or irregular supply, and it poses serious health and environmental concerns, including respiratory problems and deforestation. Only a negligible proportion of households use kerosene, indicating a gradual shift away from this fuel due to policy restrictions and promotion of cleaner alternatives. Overall, while the adoption of LPG is encouraging, the continued reliance on traditional fuels highlights the need for improved affordability, sustained supply, and awareness programs to ensure a complete transition to clean cooking energy.

CONCLUSION

The condition and the living standards in the tribal areas of India are disturbing. Planned developmental efforts aimed at these communities following independence have not resulted in noteworthy enhancements in their circumstances. This research examined the socioeconomic status of the Urali Tribe located in the Satyamangalam block of Erode district in Tamil Nadu. To the best of the researchers' knowledge, this is the first instance of calculating the Tribal Composite Socio-economic Index. According to various economic metrics, challenges such as low literacy rates, indebtedness, lack of awareness, inadequate infrastructure, inferior healthcare, unemployment, unkind developmental

policies, and insufficient leadership present major obstacles to the progress of tribal groups. These metrics would accurately reflect the situation of the tribal population and assist in pinpointing problems related to resource distribution, implementation of development strategies, and allocation of government aid programs. Internal obstacles including insufficient leadership skills and knowledge kept these communities disconnected and hindered them from addressing ongoing issues. The main external barriers consisted of inadequate government infrastructure, poor management, and ineffective operation of government services. Numerous government agencies such as schools, Anganwadis, ration shops, and clinics providing basic health care often suffer from insufficient staffing or are frequently non-functional. Women and children commonly experience malnutrition, low body weight, and illnesses like anemia, tuberculosis, and skin diseases. The educational circumstances in the mountainous regions are dire. Very few students manage to pursue higher education, and there is a significant lack of awareness regarding vocational training. The infrastructure of tribal schools is extremely deficient, and there is a critical scarcity of subject matter experts. The research highlights that Scheduled Tribes are falling behind concerning access to basic needs, including living conditions, irrigation resources, sanitation facilities, fuel types, electricity availability, and the proportion of households with land ownership and pattas. A considerable number of individuals, over 60 percent, migrate for various employment opportunities. This has drastically affected the overall development of these communities, particularly impacting the welfare of tribal children.

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Impact of Employee Engagement and Organizational Culture on Employee Productivity: An Empirical Study

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ABSTRACT

In the contemporary competitive business environment, organizations increasingly recognize human capital as a strategic asset for achieving sustainable performance. This study examines the impact of employee engagement and organizational culture on employee productivity. Specifically, the research investigates whether employee engagement significantly influences productivity and whether organizational culture plays a critical role in enhancing employee performance outcomes. Drawing on contemporary organizational behavior and human resource management theories, the study proposes two primary hypotheses: (1) employee engagement has a significant positive impact on employee productivity, and (2) organizational culture significantly influences employee productivity.

A quantitative research design is adopted, utilizing structured questionnaires to measure employee engagement, organizational culture dimensions, and productivity levels. Data are analyzed using correlation and regression techniques to determine the strength and direction of relationships among the variables. The findings are expected to demonstrate that higher levels of employee engagement lead to improved productivity and that a supportive and performance-oriented organizational culture strengthens employee output.

The study contributes to the existing literature by empirically validating the interrelationship between engagement, culture, and productivity. Furthermore, it offers practical implications for managers and policy makers to develop engagement strategies and cultivate a positive organizational culture to enhance workforce productivity and organizational effectiveness.

KEYWORDS : *Employee engagement, Organizational culture, Employee productivity, Organizational performance, Human resource management.*

INTRODUCTION

In the modern competitive and rapidly evolving business environment, organizations increasingly recognize that human resources are not merely operational assets but strategic drivers of sustainable growth and competitive advantage. Employee productivity has emerged as a critical determinant of organizational success, influencing profitability, innovation, service quality, and long-term stability [1]. As organizations strive to enhance performance

outcomes, attention has shifted toward understanding the psychological and cultural factors that influence employees' work behaviors and output.

Employee engagement has gained significant prominence in contemporary organizational research and practice [2]. It refers to the level of emotional commitment, involvement, and enthusiasm employees exhibit toward their work and organization. Engaged employees are characterized by higher levels of dedication, vigor, and absorption in their tasks. They tend to demonstrate

proactive behavior, improved job performance, reduced absenteeism, and stronger organizational loyalty. Consequently, employee engagement is widely regarded as a vital factor in enhancing employee productivity and overall organizational effectiveness [3].

Alongside engagement, organizational culture plays a fundamental role in shaping employee attitudes, behaviors, and performance. Organizational culture encompasses shared values, beliefs, norms, and practices that guide how employees interact and perform within the workplace [4]. A positive and supportive culture fosters collaboration, trust, open communication, innovation, and accountability. When employees perceive alignment between their personal values and organizational culture, they are more likely to experience higher motivation, satisfaction, and commitment, which can ultimately translate into improved productivity [5].

Despite the growing body of research addressing employee engagement and organizational culture independently, there remains a need to examine their combined impact on employee productivity [6]. Understanding how engagement interacts with organizational culture to influence performance outcomes is essential for organizations seeking to build high-performing work environments. This study, therefore, aims to investigate the impact of employee engagement on employee productivity and to assess whether organizational culture significantly influences productivity levels [7].

By empirically testing these relationships, the research seeks to provide valuable insights for managers, human resource professionals, and policy makers [8]. The findings are expected to support the development of strategic initiatives that foster employee engagement and cultivate a positive organizational culture, thereby enhancing productivity and ensuring long-term organizational success.

RESEARCH OBJECTIVES

- To examine the impact of employee engagement and organizational culture on employee productivity.
- To analyze the level of employee engagement within the organization.
- To assess the nature and dimensions of organizational culture perceived by employees.

- To measure the level of employee productivity in the organization.
- To examine the relationship between employee engagement and employee productivity.
- To evaluate the influence of organizational culture on employee productivity.
- To determine whether employee engagement significantly predicts employee productivity.
- To provide practical recommendations for enhancing employee engagement and strengthening organizational culture to improve productivity.

RESEARCH METHODOLOGY

Research Design

The present study adopts a quantitative, descriptive, and explanatory research design to examine the impact of employee engagement and organizational culture on employee productivity. The descriptive design helps in understanding the current level of engagement, cultural perceptions, and productivity, while the explanatory design enables the analysis of cause-and-effect relationships among the variables.

The study primarily uses a cross-sectional survey method, where data are collected from respondents at a single point in time to assess relationships between employee engagement, organizational culture, and employee productivity.

2. Research Approach

The study follows a deductive research approach, where hypotheses are formulated based on existing organizational behavior and human resource management theories. The hypotheses are then empirically tested using statistical tools to validate or reject the proposed relationships.

Population of the Study

The population of the study consists of employees working in selected organizations (e.g., manufacturing, service, IT, or other sectors as applicable). The target population includes employees at various levels such as:

- Executive level
- Middle management

- Operational staff

Sample Size and Sampling Technique

Sample Size

A sample size of 300–500 respondents is considered appropriate for statistical analysis and hypothesis testing (exact number may vary based on organizational size).

Sampling Technique

A probability sampling method, specifically simple random sampling or stratified random sampling, is adopted to ensure representation from different departments and levels of employees.

If probability sampling is not feasible, a convenience sampling method may be used depending on access and organizational permission.

DATA ANALYSIS AND INTERPRETATION

Impact of Employee Engagement on Employee Productivity

H₀₁: Employee engagement has no significant impact on employee productivity

H₁₁: Employee engagement has a significant positive impact on employee productivity.

Table 1 presents the descriptive statistics, including mean and standard deviation, for the variables employee engagement and employee productivity based on responses from 500 employees. The mean value indicates the average level of agreement among respondents, while the standard deviation reflects the variability in responses.

Table 1: Descriptive Statistics of Employee Engagement and Employee Productivity (N = 500)

Variables	N	Mean	Std. Deviation
Employee Engagement	500	3.82	0.64
Employee Productivity	500	3.95	0.58

Interpretation

The mean score for employee engagement is 3.82 (SD = 0.64), indicating a moderately high level of engagement among employees. Similarly, employee productivity has a mean score of 3.95 (SD = 0.58), suggesting that employees perceive themselves as productive within the organization. The relatively low standard deviation values indicate consistency in responses. Overall, the results show that both engagement and productivity levels are positively perceived among respondents.

Table 2 displays the Pearson correlation coefficient between employee engagement and employee productivity. The correlation value (*r*) indicates the strength and direction of the linear relationship between the two variables. The double asterisks (**) denote statistical significance at the 0.01 level.

Table 2: Correlation Matrix Showing the Relationship Between Employee Engagement and Employee Productivity

Variables	Employee Engagement	Employee Productivity
Employee Engagement	1	0.724**
Employee Productivity	0.724**	1

Interpretation

The correlation coefficient between employee engagement and employee productivity is 0.724, which indicates a strong positive relationship. Since the significance value is less than 0.01 ($p < 0.01$), the relationship is statistically significant. This implies that as employee engagement increases, employee productivity also increases. Therefore, there is strong evidence to reject the null hypothesis (H₀₁) and support the alternative hypothesis (H₁₁).

Table 3 presents the model summary of the simple linear regression analysis conducted to examine the impact of employee engagement on employee productivity. The table includes R (correlation coefficient), R Square (coefficient of determination), Adjusted R Square, and the standard error of estimate.

Table 3: Model Summary of Regression Analysis Showing the Impact of Employee Engagement on Employee Productivity

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.724	0.524	0.523	0.401

Interpretation

The R value of 0.724 indicates a strong positive relationship between employee engagement and employee productivity. The R Square value of 0.524 shows that 52.4% of the variation in employee productivity is explained by employee engagement. The Adjusted R Square (0.523) confirms the reliability of the model. The standard error of estimate (0.401) indicates a relatively small prediction error. These findings suggest that employee engagement significantly contributes to productivity levels.

Table 4 presents the Analysis of Variance (ANOVA) results for the regression model. It shows the total variance in employee productivity divided into regression (explained variance) and residual (unexplained variance). The F-statistic tests whether the regression model significantly predicts the dependent variable.

Table 4: ANOVA Results for Regression Model Examining the Impact of Employee Engagement on Employee Productivity

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	88.56	1	88.56	550.321	0
Residual	80.14	498	0.161		
Total	168.7	499			

Interpretation

The F value of 550.321 with a significance level of 0.000 ($p < 0.05$) indicates that the regression model is statistically significant. This means that employee engagement significantly predicts employee productivity. Since the p-value is less than 0.05, the null hypothesis (H_{01}) is rejected. Therefore, it can be concluded that employee engagement has a significant positive impact on employee productivity among the 500 respondents.

Influence of Organizational Culture on Employee Productivity

H_{02} : Organizational culture does not significantly influence employee productivity. H_{12} : Organizational culture significantly influences employee productivity.

Table 5 presents the descriptive statistics, including the mean and standard deviation, for organizational culture and employee productivity based on responses collected from 500 employees. The mean indicates the average level of agreement among respondents, while the standard deviation reflects the degree of variation in responses.

Table 5: Descriptive Statistics of Organizational Culture and Employee Productivity (N = 500)

Variables	N	Mean	Std. Deviation
Organizational Culture	500	3.88	0.59
Employee Productivity	500	3.95	0.58

Interpretation

The mean score for organizational culture is 3.88 (SD = 0.59), indicating that employees perceive the organizational culture as moderately positive and supportive. The mean score for employee productivity is 3.95 (SD = 0.58), suggesting a relatively high level of productivity among employees. The low standard deviation values show consistency in responses. Overall, employees report favorable perceptions of both organizational culture and productivity.

Table 6 displays the Pearson correlation coefficient between organizational culture and employee productivity. The correlation value (r) indicates the strength and direction of the relationship between the two variables.

Table 6: Correlation Matrix Showing the Relationship Between Organizational Culture and Employee Productivity

Variables	Organizational Culture	Employee Productivity
Organizational Culture	1	0.689**

Employee Productivity	0.689**	1

Interpretation

The correlation coefficient between organizational culture and employee productivity is 0.689, which indicates a strong positive relationship. Since the significance level is less than 0.01 ($p < 0.01$), the relationship is statistically significant. This implies that improvements in organizational culture are associated with increases in employee productivity. Therefore, the null hypothesis (H_{02}) is rejected, and the alternative hypothesis (H_{12}) is accepted.

Table 7 presents the model summary of the simple linear regression analysis conducted to examine the impact of organizational culture on employee productivity. The table includes the correlation coefficient (R), coefficient of determination (R Square), adjusted R Square, and standard error of estimate.

Table 7: Model Summary of Regression Analysis Showing the Influence of Organizational Culture on Employee Productivity

Model	R	R Square	Adjusted R Square	Std. Error of Estimate
1	0.689	0.475	0.474	0.421

Interpretation

The R value of 0.689 indicates a strong positive relationship between organizational culture and employee productivity. The R Square value of 0.475 shows that 47.5% of the variation in employee productivity is explained by organizational culture. The adjusted R Square value of 0.474 confirms the stability of the model. The standard error of estimate (0.421) indicates a reasonable level of prediction accuracy. These results suggest that organizational culture plays a substantial role in influencing productivity.

Table 8 presents the Analysis of Variance (ANOVA) results for the regression model. The table shows the total variance in employee productivity divided into explained variance (regression) and unexplained variance (residual). The F-statistic tests whether the regression model significantly predicts employee productivity.

Table 8: ANOVA Results for Regression Model Examining the Influence of Organizational Culture on Employee Productivity

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	80.132	1	80.132	452.614	0
Residual	88.568	498	0.178		
Total	168.7	499			

Interpretation

The F value of 452.614 with a significance value of 0.000 ($p < 0.05$) indicates that the regression model is statistically significant. This confirms that organizational culture significantly predicts employee productivity. Since the p-value is less than 0.05, the null hypothesis (H_{02}) is rejected. Therefore, it is concluded that organizational culture has a significant positive influence on employee productivity among the 500 respondents.

CONCLUSION

The present study examined the impact of employee engagement and organizational culture on employee productivity among 500 respondents. The findings provide strong empirical evidence that both employee engagement and organizational culture significantly influence employee productivity.

The correlation and regression results revealed a strong positive relationship between employee engagement and employee productivity ($r = 0.724$, $p < 0.001$). The regression analysis further demonstrated that employee engagement explains a substantial proportion (52.4%) of the variance in employee productivity. These findings confirm that engaged employees are more committed, motivated, and focused, which directly enhances their performance and output levels. Hence, the null hypothesis (H_{01}) was rejected, and the alternative hypothesis (H_{11}) was accepted.

Similarly, organizational culture was found to have a significant positive relationship with employee productivity ($r = 0.689$, $p < 0.001$). The regression results indicated that organizational culture accounts for 47.5% of the variation in employee productivity. This suggests that a supportive, collaborative, and value-driven organizational culture fosters employee

motivation, satisfaction, and efficiency. Therefore, the null hypothesis (H_{02}) was rejected, and the alternative hypothesis (H_{12}) was accepted.

Overall, the study concludes that both employee engagement and organizational culture are critical determinants of employee productivity. Organizations seeking to improve performance outcomes should prioritize strategies that enhance employee involvement, strengthen leadership support, promote open communication, and cultivate a positive workplace culture. By investing in engagement initiatives and fostering a strong organizational culture, organizations can achieve sustained productivity and long-term competitive advantage.

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A Study on the Financial Statement Analysis of JK Tyre & Industries Ltd

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ABSTRACT

This study explores the financial performance of JK Tyre & Industries Ltd. with the aim of understanding how its financial and managerial functions support the company's operations. The research connects classroom concepts with real industry practices by examining routine financial processes and the functioning of the finance department. Using ratio analysis and comparative financial evaluation, the study measures key areas such as liquidity, profitability, operational efficiency, and long-term solvency. The results offer clear insights into how financial management influences the company's stability, competitiveness, and future growth potential. Based on the analysis, the study also provides suggestions to enhance financial planning, improve resource utilization, and strengthen overall business performance. Ratio analysis plays an essential role in this research, enabling stakeholders to interpret financial trends and assess the company's overall health.

KEYWORDS : JK Tyre, Financial analysis, Liquidity, Profitability, Efficiency, Solvency.

INTRODUCTION

The tyre industry in India is one of the country's most established industrial sectors and plays a crucial role in supporting national transportation and economic activity. Over the decades, the sector has expanded steadily alongside growth in automobiles, infrastructure development and rising mobility needs. India is now among the world's major tyre markets, supplying tyres to passenger vehicles, two-wheelers, trucks, buses, agricultural machinery and off-road equipment. Demand in the sector arises mainly from two areas—original equipment manufacturers (OEMs) and the replacement market—with replacement purchases forming the larger share due to continuous vehicle use and tyre-wear cycles.

Technological progress has also reshaped the industry, with manufacturers shifting from traditional bias-ply tyres to radial, tubeless, low-profile and high-performance variants. Indian companies have

increasingly invested in advanced machinery, automation and environmentally friendly production methods to stay competitive in both domestic and international markets.

In this context, analysing the financial performance of leading companies becomes essential for understanding industry trends, operational efficiency and long-term sustainability. The present study focuses on JK Tyre & Industries Ltd., examining its liquidity, profitability and overall financial strength through key financial statement analysis tools.

OBJECTIVES

- Assessing the company's earning capacity and overall profitability.
- Evaluating the liquidity and solvency positions of the organization.
- Comparing balance sheets across different fiscal years.

RESEARCH DESIGN

The research design provides a structured plan for conducting the study and guides the methods and procedures used for collecting and analysing data. This study adopts an analytical research design, which focuses on examining and interpreting existing information to derive meaningful conclusions. Analytical studies rely primarily on secondary data and involve evaluating financial records, identifying trends, and drawing insights through logical reasoning. This design is suitable for understanding financial patterns, assessing performance, and making informed interpretations based on numerical evidence.

RESEARCH METHODOLOGY

The study follows a quantitative research methodology because the analysis is based on numerical financial information relating to JK Tyre & Industries Ltd. The financial statements published by the company form the core of the data. Through this method, the study examines trends, evaluates financial ratios, and interprets movements in the company's financial position over time. An exploratory approach has also been used, as it helps in gaining deeper insight into financial patterns and supports a clearer understanding of concepts related to corporate performance.

TOOLS AND TECHNIQUES OF ANALYSIS

Accounting Ratios

The study makes use of several financial ratios, including the Current Ratio, Quick Ratio, Inventory Turnover Ratio, Operating Profit Ratio, and Net Profit Ratio. These ratios were computed for six consecutive financial years to evaluate changes in liquidity, efficiency, and profitability. By comparing the results across years, the study helps in assessing the company's financial stability and overall growth.

Statistical Tools

- To support the analysis, basic statistical measures such as Mean, Standard Deviation, and Coefficient of Variation were used.
- The secondary data collected from the published annual reports of tyre companies were systematically

arranged, classified, and tabulated. These statistical tools assisted in identifying financial trends, analysing variations, and determining the consistency of performance during the selected study period.

SOURCES OF DATA

All data used in this study are taken from secondary sources. The main information has been collected from JK Tyre's annual reports and official corporate publications. Additional financial data has been obtained from credible websites such as Moneycontrol. Supporting information from journals, books, research papers, theses, and authentic online materials has also been included. These sources were selected because they offer reliable, consistent, and comprehensive data suitable for financial analysis.

PERIOD OF THE STUDY

The study covers a period of five financial years from 2019–20 to 2023–24. This timeframe was selected because complete and comparable financial data for JK Tyre is available for these years, allowing an accurate assessment of trends and performance changes during the period.

ANALYSIS AND INTERPRETATION

Table 1. Liquidity Ratios

Year	Current Ratio	Quick Ratio	Cash Ratio
2023-2024	1.19	0.72	0.15
2022-2023	1.17	0.54	0.16
2021-2022	1.13	0.53	0.07
2020-2021	0.87	0.43	0.04
2019-2020	0.99	0.55	0.04
Mean	1.07	0.55	0.09
S.D	0.122	0.094	0.05
C.V	11.40	16.9	57.3

Interpretation

The liquidity ratios indicate that the company operates with limited short-term financial flexibility. The current ratio has an average of about 1.07, which is still below the preferred benchmark of 2:1, showing that the firm does not maintain a strong cushion to meet its

short-term obligations. The quick ratio, with a mean of around 0.55, also falls short of the ideal 1:1 level, suggesting that after excluding inventory, the company has only a modest amount of liquid assets available to cover immediate liabilities. The cash ratio, averaging about 0.09, remains very low, indicating minimal cash and cash equivalents compared to immediate payment requirements. Looking at consistency, the current ratio shows lower variability as reflected by its CV, indicating stable short-term liquidity over time, while the cash ratio displays higher fluctuations, suggesting uneven cash management across different years. Overall, the company's liquidity position is tight but relatively steady, with a noticeable dependence on non-cash assets to meet short-term needs.

Table 2. Solvency Ratios

Year	Debt to Equity Ratio	Total Asset to Debt Ratio	Proprietary
Ratio			
2023-2024	0.19	2.14	0.41
2022-2023	0.25	1.67	0.36
2021-2022	0.34	1.59	0.31
2020-2021	0.44	1.80	0.33
2019-2020	0.63	1.46	0.29
Mean	0.37	1.73	0.34
S.D	0.16	0.23	0.04
C.V	41.9	13.4	12.3

Interpretation

The solvency ratios point to a strengthening long-term financial position. The debt-to-equity ratio declines from 0.63 to 0.19, and its moderate SD but higher CV show noticeable year-to-year changes as the company steadily reduces its reliance on long-term borrowing. The total asset to debt ratio improves from 1.46 to 2.14, and its lower SD and CV indicate more consistent growth in the company's ability to cover its debts with available assets. The proprietary ratio gradually increases from 0.29 to 0.41, and its low SD and CV show stable improvement in the share of owners' funds within total assets. Taken together, the solvency ratios suggest increasing financial safety, lower risk, and a stronger capital structure, with SD and CV showing that

improvements in long-term stability are more consistent than the company's short-term liquidity movements.

Table 3. Profitability Ratios

Year	Gross Profit Ratio	Net Profit Ratio	Operating Profit
2022-2023	39	4.94	11
2021-2022	31	2.42	6
2020-2021	32	0.56	5
2019-2020	39	2.53	10
2018-2019	38	-2.27	8
Mean	35.8	1.64	8.0
S.D	3.54	2.40	2.28
C.V	9.90	146.56	28.50

Interpretation

The gross profit ratio stays within a narrow range of 31 to 39 percent, showing that the company's basic production margin has remained steady over the years. The low standard deviation and low coefficient of variation for this ratio confirm that its year-to-year changes are minimal and predictable. In comparison, the net profit ratio shows much larger movement, shifting from a negative value in one year to a positive value in another. The higher SD and CV reflect this inconsistency and indicate that overall profitability is more affected by changes in expenses, finance charges, and other overheads. The operating profit ratio also moves between 5 and 11 percent, and the moderate SD and CV suggest that the company's operating efficiency is not uniform across the period. Taken together, these ratios show steady manufacturing performance but uneven overall profitability due to fluctuating costs.

Table 4. Profitability Ratios

Year	Rate of Return on Investment Ratio	Rate of Return on Equity Ratio	Raw Material Consumed Ratio
2022-2023	4.4	14	61
2021-2022	1.8	4	70
2020-2021	1.34	4	71
2019-2020	2.9	9	60
2018-2019	2.2	5	72
Mean	2.53	7.2	66.8

S.D	1.07	3.87	5.19
C.V	42.20	53.72	7.77

Interpretation

The rate of return on investment ranges from about 1.34 to 4.4 percent, and its moderate standard deviation and coefficient of variation indicate that returns from total assets change from year to year but improve toward the end of the period. The return on equity shows even greater variation, moving between 4 and 14 percent, and the higher SD and CV values point to noticeable fluctuations in the benefits earned by shareholders. The raw material consumed ratio, which lies between 60 and 72 percent, has relatively lower SD and CV, showing that material costs form a major but stable part of production. The operating cost ratio changes from 85 to 102 percent, and the higher SD and CV highlight inconsistency in cost control, with some years experiencing higher operating expenses than revenue. Overall, these ratios show mixed profitability performance, with CV values helping to identify where financial results are more stable and where they are more volatile.

Table 5. Activity Turnover Ratio

Year	Total Asset Turnover Ratio	Net Fixed Asset Turn Over Ratio	Debtor's Turnover Ratio
2022-2023	1.65	2.08	5.44
2021-2022	1.76	2.19	6.41
2020-2021	1.49	1.83	6.05
2019-2020	1.34	1.39	5.78
2018-2019	1.00	1.14	4.10
Mean	1.45	1.73	5.56
S.D	0.27	0.40	0.79
C.V	18.33	23.29	14.30

Interpretation

The total asset turnover ratio ranges from 1.00 to 1.76, showing that the company's ability to generate sales from its total assets has improved over time. The moderate standard deviation and coefficient of variation indicate noticeable year-to-year changes, but the overall trend suggests a gradual rise in efficiency. The net fixed asset turnover ratio varies between 1.14 and

2.19, and the relatively higher SD and CV values reflect greater fluctuations in how effectively fixed assets are being used to generate revenue. This suggests that the company's long-term assets were not utilized at a consistent rate across the period. The debtor's turnover ratio moves between 4.10 and 6.41, and its moderate SD and CV show some irregularity in the speed of collecting receivables. Higher values in some years indicate quicker conversion of credit sales into cash, while lower values point to slower recovery. Overall, the activity ratios show improving efficiency in asset usage but with some variability, as highlighted by the SD and CV values.

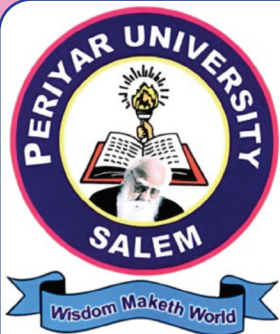
CONCLUSION

The five-year financial analysis of JK Tyre shows that while the company maintains a stable capital structure and strong solvency, its liquidity position remains weak and its profitability performance is uneven. Consistent gross margins indicate efficient production, but fluctuations in net and operating profits reveal challenges in managing costs and maintaining stable earnings. Activity ratios show gradual improvement in asset utilisation but also highlight areas of inconsistency. Strengthening liquidity, stabilising profit margins, and continuing to manage leverage effectively will help the company improve its financial stability and support long-term growth.

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