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CONTENT

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A STUDY ON BALANCE OF WORK LIFE OF WOMEN EMPLOYEES IN PRIVATE BANKING SECTOR

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ABSTRACT

This study investigates the impact of work-life balance (WLB) on women employees in the banking industry. Recognizing the increasing challenges faced by women in managing professional and personal responsibilities, especially in a rapidly evolving banking sector, the research aims to explore factors influencing WLB, including organizational policies, job stress, societal expectations, and support systems. Data was collected through structured questionnaires from 300 women working in various banks. The findings highlight the significance of effective WLB policies in enhancing job satisfaction, commitment, and overall well-being of women employees, thereby contributing to organizational productivity and societal development.

KEYWORDS: Banking Industry, Work-Life Balance, Organizational Policies, Societal Expectations, Employee Productivity, Women Employees

INTRODUCTION

In recent decades, women's participation in the workforce has seen significant growth, particularly in the banking sector, which is characterized by dynamic work environments and high-performance expectations. Despite the economic and social advancements, women often face dual burdens—balancing professional commitments with family responsibilities. The concept of work-life balance (WLB) has gained prominence as organizations recognize the importance of supporting their female employees to achieve harmony between their work and personal lives. This research aims to delve into the factors affecting women's WLB in the banking sector, particularly in the context of evolving industry practices and societal expectations.

STATEMENT OF THE PROBLEM

Despite the increasing focus on gender equality and employee well-being, many women employees in the banking industry continue to experience work-life conflicts due to demanding work schedules, organizational pressures, and societal expectations. There is a lack of comprehensive understanding of how existing organizational policies support or hinder women's efforts to maintain work-life balance. This study seeks to examine the extent to which current policies and organizational practices influence women employees' ability to balance their professional and personal lives, and how this balance impacts their commitment and job satisfaction.

SCOPE OF THE STUDY

The study focuses on women employees working in private and public sector banks in a specified urban region. It encompasses various designations, including clerks, officers, managers, and senior management, with varying lengths of service and income levels. The research examines organizational policies, support systems, job stress, family responsibilities, and societal expectations as variables influencing WLB. The findings aim to provide actionable insights for banking institutions, policymakers, and human resource managers to develop more effective WLB policies and programs for women employees.

OBJECTIVES

1. To assess the existing work-life balance policies and practices among women employees in the banking sector.
2. To identify the key factors influencing work-life balance for women bankers.
3. To analyze the impact of work-life balance on job satisfaction, organizational commitment, and overall well-being.

METHODOLOGY

Research Design: Descriptive and analytical research design.

Sample Size

150 women employees from various banks in the selected urban region.

Sampling Technique

Stratified random sampling to ensure representation across different designations, income levels, and years of service.

Data Collection Method

Structured questionnaires comprising closed and open-ended questions related to organizational policies, work-related stress, family responsibilities, support systems, and personal perceptions of WLB. Tools used for SPSS or similar statistical software for data analysis

WOMEN EMPLOYEES IN THE PRIVATE BANKING SECTOR

Women employees in the private banking sector, especially in India, face significant work-life balance challenges due to intense target pressure, demanding work hours, and a lack of adequate work-family support like childcare facilities. They often bear a disproportionate burden of both professional and domestic responsibilities, which is exacerbated by the need to work longer hours to meet targets and advance their careers. While these roles offer financial rewards and growth opportunities, they are also accompanied by work-related stress, potential sexual harassment, and the constant pressure of balancing demanding job requirements with family life.

Work-Life Balance:

There is a constant struggle to balance demanding professional lives with extensive domestic responsibilities, especially in cultures where household chores are not shared.

Target Pressure:

Women employees face immense pressure to meet targets, which often translates to longer working hours, even beyond the defined hours, leading to stress and burnout.

Workplace Stress and Harassment:

Women may experience workplace stress due to the pressure of deadlines and work-life conflict, and there are documented instances of sexual harassment from colleagues or customers.

Lack of Support Systems:

Many private banks lack essential family support systems, such as on-site childcare centers, making it difficult for women to manage their family needs while working.

Career Advancement and Transfers:

Promotions can sometimes be linked with transfers, which can be disruptive to family life and create further challenges for women employees.

Societal Expectations:

The expectation for women to handle the majority of household chores and childcare responsibilities adds a significant double burden.

Shift in Job Roles:

While banking was once seen as a "sitting job," women are increasingly expected to perform sales-oriented roles, increasing their work demands.

Organizational Culture:

A lack of organizational policies that support work-life balance, such as flexible working hours and childcare assistance, contributes to the problem.

Work-Family Support Programs:

Banks should implement work-family support programs, including childcare assistance and flexible work options.

Anti-Sexual Harassment Policies:

Establishing and enforcing strong anti-sexual harassment policies is crucial for a safe working environment.

Employee Counselling:

Regular work-life balance and family counselling programs can help employees cope with stress.

Promoting a Supportive Environment:

Fostering open communication, perhaps through social media, can help banks understand and meet the work-life balance needs of their female employees.

REVIEW OF LITERATURE

Sania Khan., & Et al. (2023). In every organization, employees deal with increasing job pressures. In recent years, women have faced even greater difficulties in such circumstances. This study proposed to investigate how work–life balance (WLB) affects the personal lives of working women in the banking industry of Larkana city, Pakistan. The information was gathered via a standardized questionnaire from 266 female bank employees in Larkana.

Sona Vikas., & Ashish Mathur. (2024). A fulfilling existence is possible when one's work and personal life are in harmony with one another. Finding a happy medium between one's "work" and one's "life" is what the phrase "work-life balance" (WLB) is all about. Today, women's work-life balance (WLB) is more important than ever before because of the societal expectation that men and women should provide financially for their families.

Shilpi Kulshrestha (2023). A nation may be endowed with abundant natural and physical resources and the necessary capital and technology but unless there are competent people who can mobilize, organize and harness the resources for production of goods and services, it cannot make rapid strides towards economic and social advancement. The strengths and weakness of an organization are determined by the quality of its human resources, which play a vital role in using other organizational resources and the development process of modern economies.

Md. Amanullah., & et al. (2024). Balancing working life and personal life is quite challenging, especially for women who must play diverse roles at a time. Family obligations and the nature of work also influence the intensity of work-life conflict. A well-articulated human resource policy may not wipe out the role conflict but can minimize it prudently. This study is designed to examine whether the existing WLB policies of private commercial banks in Bangladesh are designated enough to influence the female bankers level of commitment and their attitude toward job market.

Ganapathi (2016). The entry of new private sector banks enhances the operational efficiency and competitiveness in Indian banking industry. The new private sector banks have introduced new and innovative services and products in order to capture the high market share. This changes the working pattern of the women employees in banking sector. The findings shows that work life balance policies, work load, organizational support and financial support are determinants of work life balance of women employees in new private sector banks.

Vijaya. N., & Arockiasamy. K. S. (2022). Career and goals are the most important factors in life. Most of the women are coming forward to work in order to support their family. This change is now natural and dynamic due to change of environment and economic conditions. The biggest challenge for women is how to balance the demands of family and career. The literature identifies the various aspects such as career advancement, work stress, work, family conflict and family work conflict, Childcare in context with work life Balance and its practices.

Pande., & Ahirrao. (2021). The nationalization of the Indian banking sector in 1969 served as the first major step to reduce gender discrimination against women in banking jobs. The women employees working in the banking industry are able to balance their work-life. The study concludes that there are no separate policies for the work life balance of working women but the majority of women employees accepted job sharing and support from colleagues at work is helping them to balance work-life.

Nidhi Saxena., & Ravindra Kumar. (2022). Women employees are struggling hard to manage their professional and personal lives, balancing both career and family is a difficult task for working women because they face dual burden of work and family. Today every individual has to balance conflicting responsibilities and commitments. Thus work-life balance has emerged as a predominant issue in the workplace.

Geetha., & Rajendran. (2017). Banking industry is an emerging industry in India; the entry of private sector and foreign banks have brought various essential changes in the banking industry. The menace of work- life imbalance is noticeable in banking industry. Employees in the banks take painful effort to deliver the various needs of its customers. Work deadlines are getting compact and the individual's jobs are loaded and added with quality output.

Vyoma. (2019). The work life balance for women employees in banking industries is the order of the day. The work life balance of women employees in banking sector is to determine the level of their work life balance which is having high importance on their total wellbeing and enhance their productivity and entire banking growth. Striking a balance between professional and personal commitments is a common dilemma for many of today's women workers.

Mandeep Kaur., & Venkateswaran (2020). this study explains the Service sector contribution to the global output is more. The service factor itself is the largest part of the economy for the countries around the world, the worthy reason being urbanization, privatization and instant demand for final consumer services. Quality services being the ingredient for welfare of an economy, the primary and secondary sectors are directly dependent on the progress of services like banking, insurance, trade and commerce together with entertainment, social and personal aspects specifically in advanced economies.

Majeesh.T, & Ashraf.E. (2018). women's work-life balance has gained importance in the modern world. It is a fairly broad topic that touches on both family care and job advancement on opposite sides. Understanding how women manage work and domestic responsibilities is crucial. The goal of working life is to advance professionally and get respect from colleagues and society at large, whereas the goal of living a fulfilling personal life is to take good care of one's family, including one's parents, children, and leisure time.

DATA ANALYSIS

Table No – 1
Demographic Profile of Women Employees in Private Sector Banks

Sl. No	Profile	Category	Frequency	Percentage
1	Gender	Male	95	63.3
		Female	55	36.7
		Total	**150**	**100.0**
2	Age	18-30	71	47.3
		31-40	57	38.0
		41-50	7	4.7
		Above 50	15	10.0
		Total	**150**	**100.0**
3	Educational Qualification	Diploma	79	52.7
		Under Graduate	50	33.3
		Post Graduate	21	14.0
		Total	**150**	**100.0**
4	Marital Status	Married	60	40.0
		Single	66	44.0
		Widow	21	14.0
		Divorced	3	2.0
		Total	**150**	**100.0**
5	Designation	Officer	9	6.0
		Chief Manager	20	13.3
		Manager	37	24.7
		Clerk and Staff	84	56.0
		Total	**150**	**100.0**
6	Length of Service	Less than 5 years	65	43.3
		6 – 10 years	59	39.3
		11 – 15 years	16	10.7
		16 – 20 years	10	6.7
		Total	**150**	**100.0**
7	Monthly Income	Less than Rs. 20000	29	19.3
		Rs.20001 - Rs.30000	43	28.7
		Rs.30001 - Rs.40000	34	22.7
		Rs.40001 – Rs.50000	25	16.7
		Above Rs.50000	19	12.7
		Total	**150**	**100.0**

Source: Primary Data

Table No – 1, shows that, summarized demographic profile characteristics such as Gender Distribution The majority of respondents are male (63.3%), while females make up 36.7%. This indicates a male-dominated group. Age Distribution Nearly half of the respondents are in the 18-30 age group (47.3%), suggesting a relatively young population.

The 31-40 age group accounts for 38%, indicating a substantial portion of mid-career individuals. Older age groups (41-50 and above 50) constitute a smaller segment (4.7% and 10%, respectively), showing fewer senior or older respondents. Educational Qualifications The majority hold a Diploma (52.7%), followed by Under Graduate (33.3%), and Post Graduate (14%).

This points to a predominantly diploma and undergraduate-educated workforce. Marital Status Slightly more respondents are single (44%) than married (40%), with widows accounting for 14%. Very few are divorced (2%). Designations Most respondents are Clerks and Staff (56%), with Managers comprising 24.7%, and Chief Managers 13.3%. Officers are a very small segment (6%). This indicates a workforce mostly engaged in operational roles. Length of Service A significant portion has less than 5 years of service (43.3%), indicating a relatively new or developing workforce. Those with 6-10 years of service comprise 39.3%.

Longer tenures are less common, at 10.7% and 6.7%, respectively. Monthly Income The income distribution shows that most earn between Rs.20001 and Rs.30000 (28.7%) and Rs.30001 to Rs.40000 (22.7%). About 19.3% earn less than Rs.20000, and 16.7% earn between Rs.40001 and Rs.50000. A smaller segment (12.7%) earns above Rs.50000, indicating a relatively modest income range for most respondents.

Table No – 2

One Way ANOVA for Overall Women Employees in Private Sector Banks

Demographic Details	F Value	P Value	Significant	Result
Gender	153.61	< 0.001	Significant @ 1 %	Reject H_0
Age	2.45	0.009	Significant @ 1 %	Reject H_0
Education	8.79	<0.001	Significant @ 1 %	Reject H_0
Marital Status	2.58	0.057	Not Significant @ 5 %	Accept H_0
Designation	1.11	0.333	Not Significant @ 5 %	Accept H_0
Length of Service	1.07	0.748	Not Significant @ 5 %	Accept H_0
Monthly Income	0.98	0.256	Not Significant @ 5 %	Accept H_0

Source: Primary Data

Table No – 2, shows that, One Way ANOVA for Overall Women Employees in Private Sector Banks, Gender the very high F value (153.61) and p-value (< 0.001) indicate a highly significant difference in the variable studied across gender groups. Age the F value (2.45) with a p-value (0.009) shows a statistically significant difference across age groups. Educational Qualification the F value (8.79) and p-value (< 0.001) suggest significant differences across education levels. Non-significant Demographic Factors Marital Status: P-value (0.057) indicates no significant difference at the 5% significance level. Designation P-value (0.333) shows no significant difference. Length of Service P-value (0.748) indicates no significant difference. Monthly Income P-value (0.256) also shows no significant difference.

FINDINGS

Women Employees in Private Sector Banks, Gender Predominantly male (63.3%), indicating a male-dominated workforce. Age Majority are young (47.3% aged 18-30), with a sizable mid-career group (38% aged 31-40). Older employees (41-50 and above 50) are minority. Education Most hold diplomas (52.7%) and undergraduate degrees (33.3%), with fewer postgraduates (14%), indicating a workforce with moderate educational qualification. Marital Status Slightly more singles (44%) than married (40%), with small segments widowed or divorced. Designations Majority are Clerks and Staff (56%), followed by Managers (24.7%) and Chief Managers (13.3%), suggesting operational roles dominate. Length of Service Most have less than 5 years (43.3%) or 6-10 years (39.3%), indicating a relatively new or developing workforce. Monthly Income Most earn between Rs.20,001–Rs.40,000, with fewer earning above Rs.50,000, reflecting moderate income levels. Gender: Shows a highly significant difference (F=153.61, p<0.001), indicating that the variable studied (possibly attitude, perception, or performance) varies notably between males and females. Age Significant difference exists (F=2.45, p=0.009), suggesting age influences the variable. Education Significant differences across education levels (F=8.79, p<0.001).

SUGGESTIONS

Targeted Interventions Since gender, age, and education significantly impact the variable, tailored programs or policies should consider these factors to improve engagement, satisfaction, or productivity. Training & Development focus on educational groups and age brackets that show significant differences to bridge gaps and enhance overall performance or perception.

Workforce Planning Recognize the predominance of young, less experienced employees implement mentorship and skill development programs to foster growth and retention. Gender Balance Initiatives Given the male dominance, consider strategies to promote gender diversity and address any gender-specific issues. Income and Role Alignment Moderate income levels suggest scope for reviewing compensation or benefits to attract and retain talent, especially for higher roles.

CONCLUSIONS

The demographic profile reflects a young, predominantly male, operational workforce with moderate educational qualifications and income levels. The significant influence of gender, age, and education on the studied variable underscores the importance of considering these demographics in decision-making and policy formulation. Non-significant factors like marital status, designation, and length of service suggest these may not need immediate focus for interventions related to the studied variable. Overall, organizations should leverage these insights to design inclusive, targeted strategies that enhance employee engagement, productivity, and satisfaction, considering the demographic nuances.

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OVERCONFIDENCE AND AVAILABILITY BIAS IN THE INDIVIDUAL INVESTOR'S INVESTMENT DECISION-MAKING BEHAVIOUR THROUGH THE LOCUS OF CONTROL

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ABSTRACT

This research aims to investigate the effect of behavioural determinants factors of Overconfidence Bias and Availability Bias on individual investors' investment decisions, with a moderating effect of Locus of control. The connection was investigated by distributing a questionnaire and gathering empirical data from investors regarding their own perceptions of these biases using self-administered surveys from Stoke Exchange and multiple brokerage companies. According to the study, Overconfidence Bias and Availability Bias significantly positively affect the individual investor's investment decision. The locus of control also moderates overconfidence bias and investment decisions. investigate the effect of behavioural determinants factors of Overconfidence Bias and Availability Bias on individual investors' investment decisions, with a moderating effect of Locus of control. The connection was investigated by distributing a questionnaire and gathering empirical data from investors regarding their own perceptions of these biases using self-administered surveys from Stoke Exchange and multiple brokerage companies. According to the study, Overconfidence Bias and Availability Bias significantly positively affect the individual investor's investment decision. The locus of control also moderates overconfidence bias and investment decisions. This study evaluated existing empirical literature and collected data using cluster sampling and quantitative research approaches, with a sample size of 146. Data were analyzed using descriptive, Chi-square, and regression analysis.

KEYWORDS: Behavioural finance, Overconfidence and Availability Bias, Locus of Control, Investment Decision.

INTRODUCTION

Finance has been studied for thousands of years, but behavioural finance, which takes into account how people behave in the financial world, is a relatively recent discipline. Now a day's behavioural finance is an integrated part of decision-making because it is against modern finance arguments and says market anomalies can be perceived by understanding investor psychology in the pattern of the decision-making process. Behavioural finance results from an interdisciplinary convergence of cognitive psychology and financial economics. Behavioural finance is a field of finance that proposes psychology-based theories to explain the investor investment decision (Ceren, 2013). This new branch of finance known as "Behavioural Finance" is an effort to unite this behavioural approach with traditional finance and economics theories to explain the reasons for investors' irrationality in investment choices these days (Gill, 2018).

Behavioural finance attempts to investigate the psychological and sociological issues that influence the investment decision-making process of individuals and institutions. Factors of behavioural finance like overconfidence, availability, locus of control, cognitive, and emotions also affect the investment strategies and investment decisions making process (Sattar, 2020). The field of finance known as "behavioural finance" has just begun to take off. It describes market outcomes and the impact of various psychological biases on how people and company managers approach investment decisions. Behavioural finance mainly focuses on how people interpret and act upon information for making investment decisions. It investigates and explains factors of human psychology and their effects on investment decision-making in the financial market.

REVIEW OF LITERATURE

The behavioural determinants, their effects on investment decisions, and the moderating effect of locus of control, including their personal profile. the following studies are reviewed in this area:

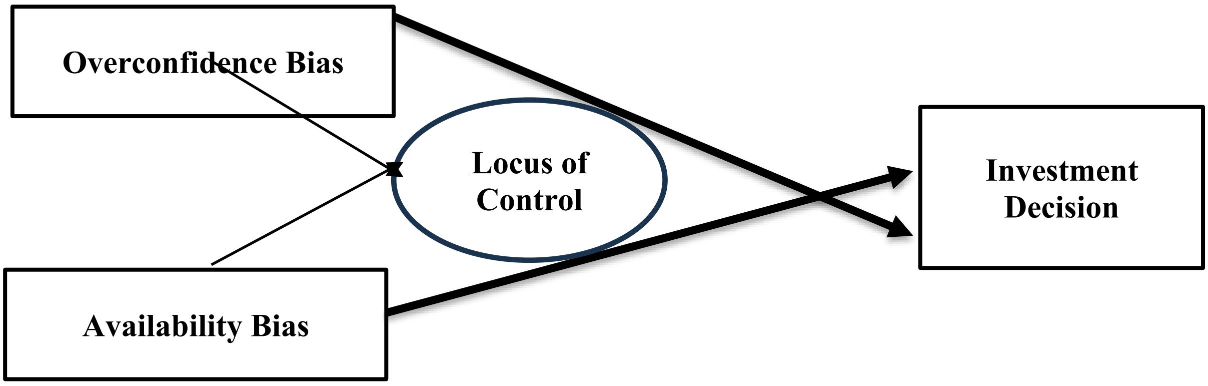
Shefrin (2000) defines "Behavioural finance as a rapidly growing area which deals with the influence of psychology on the behaviour of investors." **Ritter, (2003)** In particular, there are two representative topics in behavioural finance: -cognitive psychology and the limits of arbitrage **Barber and Odean (2000)** have studied the impact of thinking on the investment pattern of individual investors, identifying distinctive financial specialist classifications based on their features and attitude toward optional investment in the market. The ET was one of the organizations surveyed through a retail equity survey. **Alsabban, (2020)** this research aims to empirically investigate investors' irrational behaviour in the Saudi stock market, Tadawul, by using a Vector autoregression (VAR) model to investigate the lead-lag relationship between market returns and market turnover. Results suggest investors are overconfident, with professional traders having a higher degree of overconfidence. **Areiqat, (2019**) the purpose of this study is to investigate the impact of a variety of major behavioural finance variables on stock investment decisions at the Amman Stock Exchange. (ASE). The findings revealed that overconfidence had the greatest relative relevance, recommending that investors trading at ASE use a scientific basis when making stock investment selections. More research is required to investigate the impact of behavioural finance on various sorts of risks and yields at ASE. **Jain, (2022)** The primary objective of this study is to create a complete, reliable, and valid scale for measuring the behavioural biases that influence investors' decision-making process. The study's findings revealed that behavioural biases are a multifaceted phenomenon with many dimensions and substantially impact investors' judgments. The scale can help progress in behavioural finance, and other research studies may find it valuable in achieving their objectives.

OBJECTIVES OF THE STUDY

- To analyze the behavioural bias and their effect on investment decisions in stock markets.

- To examine the impact of Locus of control on the investment decision-making behaviour of Individual Investors.

CONCEPTUAL FRAMEWORK



Overconfidence Bias

Overconfidence is the most prevalent judgment bias. Several studies find that overconfidence can lead to suboptimal decisions on the part of investors, managers, or politicians (Glaser, 2010). The overconfidence suggests – "investors overestimate their ability to predict future market events, and because of this overconfidence they often take risks without receiving the commensurate returns for them" (Nevins, 2004). Several variables contribute to overconfidence, including the illusion of knowing, the illusion of control, the illusion of understanding, the illusion of validity, and the illusion of talent. According to psychologists, overconfidence leads people to overestimate their skills, underestimate risks, and exaggerate their capacity to manage things.

Availability bias

Availability bias is based on the information available to investors. They make their investment decisions based on the information they have and therefore invest in family companies in a less diversified way (Keswani, 2019). Heuristics (rules of thumb) drive availability bias, which is described as the tendency to base decisions on prior experience or historical events. Individuals who display this bias will base their assessment of the likelihood of a result on how quickly they can recall the information. Overconfidence is an emotional bias, as opposed to availability bias, which is an information-processing bias and a cognitive error.

Locus of control

"Locus of Control is a psychological construct, which originated from the Social Learning Theory, a theory that attempts to incorporate concepts from both the behavioural and cognitive schools of learning theory" (Ntayi, 2005). The Locus of Control is the degree of control individuals perceive they have with regard to the consequences of their behaviour (Rotter, 1966). Individuals with an Internal Locus of Control generally expect that their actions will produce predictable outcomes and thus are more action-oriented or motivated than externals (Hoffman, Novak, and Schlosser 2000). The locus of control is an action where a person connects events that happen in his life with external forces beyond his control (Robbins 2001).

RESEARCH METHODOLOGY

This study thoroughly evaluated the existing empirical literature in numerous articles and online databases from the beginning to the end of 2024. This study collected data using cluster sampling and quantitative research approaches. The sample size of the study is 146. The questionnaire tool was used to collect data for the study, and a survey was conducted to collect responses from stock market investors and financial institutions. The quantitative scale used in a questionnaire (1-strongly disagree to 5-strongly agree). After data collection, descriptive analysis, Chi-square, and regression analysis were applied through SPSS software, and interprets were statistically analyzed. These investigations were carried out in order to find the empirical inquiry to evaluate the effect of behavioural factors and investment decisions in the Trichy district.

RESULT AND DISCUSSION

Table - 1

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		**0.503**
Bartlett's Test of Sphericity	Approx. Chi-Square	255.076
	df	190
	Sig.	**0.001**

KMO and Bartlett's Test: The value of Kaiser-Meyer- Olkin, in Table 3 is 0.503. Bartlett's test of sphericity value for p is <0.001. So, the sample is adequate for factor analysis and a relationship present between the variables. KMO and Bartlett's test is more than 0.5 and can be considered acceptable and valid to conduct the data reduction technique.

Table – 2

Normality Test for Distribution of Investment Decisions of Investors

N	Mean	Median	Min	Max	Skewness		Kurtosis	
					Statistic	Std.Error	Statistic	Std.Error
146	77.6918	78.0000	67.00	85.00	-0.250	0.201	0.136	0.399

Skewness is -0.250 with a standard error of 0.201. This gives a measure of skewness of -0.250/0.201=-1.244. Kurtosis is 0.136 with a standard error of 0.399, giving a value of 0.136/0.399=0.341. Based on the Z value for the normality test, either or both the Skewness and Kurtosis value should be within the range value ±1.96.

Table – 3

Model of Summary

	R	**R²**	**Adjusted R²**	**Std. Error of the Estimate**	**Durbin-Watson**
1	.538[a]	0.290	0.242	2.80074	1.458

a. Predictors: (Constant), Overconfidence Bias, Availability Bias, Locus of Control, Investment Decision
b. Dependent Variable: Investor Decision- Making

ANOVA

Model		**Sum of Squares**	**df**	**Mean Square**	**F**	**Sig.**
1	Regression	434.328	9	48.259	6.152	<0.001
	Residual	1066.803	136	7.844		
	Total	1501.130	145			

a. Predictors: (Constant), Overconfidence Bias, Availability Bias, Locus of Control, Investment Decision
b. Dependent Variable: Investor Decision- Making

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	77.692	0.232		335.181	0.000
	X1	0.482	0.233	0.150	2.072	0.040
	X2	0.744	0.233	0.231	3.200	0.002
	X3	0.840	0.233	0.261	3.613	0.000
	X4	0.980	0.233	0.304	4.212	0.000

In the model summary table above, R^2 is .290, meaning 29% of the variation from the dependent variables can be explained by variation in the independent variables. The remaining 71 % can be explained by other factors that are not in the model. The adjusted R-value was .242. it means that about 24.2 % of the variation is explained by the variation in the independent variables. Durbin-Watson (DW) statistics show 1.458 indicate no auto-correction.

F value was 6.152 and the P value was significant at the 1% level. The ANOVA table reveals that the regression equation is significant. It implies that at least one parameter of the model is significant.

As per the R of unstandardized coefficient beta generated above table, the equation is,

$Y=a+\beta1x1+\beta2x2+\beta3x3+\beta4x4$

Becomes,

$Y= 77.692+0.482x1+0.744x2+0.840x3+0.980x4$.

From the above coefficient table, we see that the X1, that is β1, is significant since the p-value is 0.040, the X2 parameter, which is β2, is significant since the p-value is 0.002 and the X3, and X4 parameters as well as significant since the p-value is 0.000. given the coefficients ($\beta1=0.150$, $\beta2=0.231$, $\beta3=0.261$, $\beta4=0.304 \neq 0$), with the betas not equal to Zero, we shall therefore reject the null hypothesis and accept the alternative hypothesis, which says, the parameter for determining the overconfidence bias, availability bias, and locus of control that sat investor's investment decision is significant.

FINDINGS AND SUGGESTION

The study found that overconfidence, availability bias and locus of control are statistically significant to impact the investment decision of individuals. The positive and strong parameter of the model is significant. The study findings support various studies that have been conducted in the field of Behavioural Finance. The research study investigated the causal effect of Behavioural finance factors on individual investment decisions. Further study needs to be conducted to examine the impact of other behavioural determinant factors on individual investment decision. The study reached only 146 respondents of individual investors. Future research can attempt to reach about 200 in order to reflect the true dynamic of investment decisions on individuals and use other analytical models other than regression analysis.

CONCLUSION

The objectives of this article were to determine whether investors' investment decisions are influenced by overconfidence bias and availability bias, as well as the moderating effect of locus of control in influencing the investor's investment decision. In the study, the Locus of Control significantly changes the relationship between Overconfidence bias and investment decisions. There are two areas of thinking on whether Overconfidence bias is the most common judgment bias and whether Availability bias is the availability of information significantly impacts investment decision-making. Certain optimized decisions are intended to be made by prudent and knowledgeable investors. The above behavioural aspects were discovered to be important in the investor's investment decision. Individual investors consider these aspects when making investment decisions. Finally, this paper concludes that behavioural factors play an important effect in individual investors' investment decisions.

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A STUDY ON WORKFORCE DEVELOPMENT AND SKILL ENHANCEMENT IN THE MANUFACTURING INDUSTRY AT TRICHY

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ABSTRACT

The rapid evolution of manufacturing technologies under Industry 4.0 has led to persistent and widespread skill gaps across global industrial sectors. This study synthesizes empirical and theoretical research on competency mapping, skill shortages, and management effectiveness in manufacturing, drawing on evidence from regions such as South Asia, Europe, and North America. Using a systematic-narrative hybrid methodology guided by PRISMA protocols, we reviewed 40 studies and integrated findings from regional assessments and employer surveys. Our findings highlight that skill mismatches particularly in technical and durable soft skills impede operational efficiency and innovation. We identify critical enablers of effective management, including proactive skill-need assessments, curriculum alignment with industry needs, continuous learning pathways, and the integration of digital training tools such as VR/AR. Barriers such as financial limitations, lack of managerial commitment, and fragmented academia-industry collaboration persist.

KEYWORDS: Manufacturing sector, Technical skills, Industry 4.0, Digital transformation, Skill gaps

INTRODUCTION

The manufacturing sector is undergoing a transformational shift with the adoption of Industry 4.0 technologies, including automation, artificial intelligence, and the Internet of Things (IoT). While these advancements offer enhanced productivity and efficiency, they also exacerbate existing skill gaps and create new demands for both technical and durable skills. Countries across the globe from developing economies like India to advanced markets in Europe and North America are grappling with a misalignment between workforce capabilities and the skills required for the modern manufacturing landscape. This misalignment not only reduces firm-level efficiency but also hampers national competitiveness and socio-economic development. Over the past decade, significant research has focused on understanding the nature and impact of skill shortages in manufacturing. Studies have explored themes such as competency mapping, the efficacy of management practices, institutional barriers to training, and the evolving role of academia in skill development

STATEMENT OF THE PROBLEM

Despite widespread acknowledgment of the importance of a skilled workforce for manufacturing competitiveness, firms across regions continue to report acute skill shortages and mismatches. Technical skills required for operating advanced machinery, as well as durable skills like problem-solving and communication, are often in short supply. Several factors contribute to this persistent problem: outdated educational curricula, inadequate collaboration between academia and industry, underfunded training programs, and managerial reluctance to invest in long-term skill development. Moreover, the accelerated pace of technological change, driven by Industry 4.0, is further widening the gap between available skills and those required for current and future roles.

OBJECTIVES OF THE STUDY

1. To examine the impact of skill gaps on management effectiveness, operational efficiency, and workforce productivity.
2. To analyze the role of competency mapping, training alignment, and digital tools in addressing skill mismatches.

HYPOTHESIS OF THE STUDY

- Null Hypothesis (H0): There is no association between demographic factors (age, education level, employment type) and the skill levels/training outcomes of manufacturing industry employees.
- Alternative Hypothesis (H1): There is a statistically significant association between demographic factors (age, education level, employment type) and the skill levels/training outcomes of manufacturing industry employees.

RESEARCH METHODOLOGY

Research Design

Descriptive and analytical research design.

Sample Size

A total sample of 320 respondents from the manufacturing workforce was collected to provide adequate representation for statistical analysis.

Sampling Technique

- Stratified Random Sampling was used to ensure representative coverage across key strata: gender, age groups, education levels, employment types, and organization categories.

Data Collection Method

- Data was collected via a structured questionnaire administered face-to-face and through online platforms where possible.
- The questionnaire included sections on demographic details, employment attributes, skill assessments, training participation, and perceptions of management effectiveness.
- Primary data collection was supplemented by secondary data sources including government reports on manufacturing growth (e.g., IIP data) and industry-specific statistics to contextualize findings.

REVIEW OF LITERATURE

Sl. No.	Author(s) & Year	Review of Literature
1	Siddiqui & Waiker (2024)	Studied small-scale manufacturing firms in Nagpur, India, focusing on competency mapping to identify skill shortages. Found that institutionalizing competency frameworks enhances management effectiveness. Recommended regular assessments, training alignment with needs, and adequate budgets.

		Barriers include managerial commitment and financial constraints.
2	Miah, Erdei-Gally, Dancs & Fekete-Farkas (2024)	Reviewed how Industry 4.0 technologies affect employability in South Asia. Found that combining technological training with policy support improves management effectiveness. Highlighted the importance of aligning academia and industry to combat skill obsolescence and mismatched curricula.
3	OECD (2024)	Used the PIAAC Employer Module to assess skill mismatches in Europe. Found manufacturing firms frequently face technical skill deficits leading to inefficiencies. Management effectiveness improves with proactive skill-need assessments, recruitment, and structured training.
4	Braun, Rikala, Järvinen & Stahre (2024)	Synthesized 40 studies on industrial skill strategies. Found that management effectiveness depends on collaboration among employers, educators, and policymakers. Emphasized continuous, flexible training and stakeholder engagement.
5	Anonymous (2024)	Reviewed skills needed for digitalisation and circular economy. Identified resilience, technical, and domain-specific skills as key areas. Found that firms anticipating technological and sustainability shifts manage skill gaps better.
6	Al-Asfour & Zhao (2024)	Qualitative study in Illinois, USA. Found that durable skills (soft, problem-solving) are more lacking than technical ones. Effective management practices include apprenticeships, academia-industry collaboration, and clear skill expectations.
7	Pachera, Woschank, Zunkc & Gruber (2024)	Reviewed competence-based education in Europe's engineering programs. Found underutilization of technical and managerial skills training. Management effectiveness improves when firms collaborate with universities for curriculum alignment.
8	Katina, Cash, Caldwell, Beck & Katina (2023)	Analyzed management practices for advanced manufacturing. Found that technical leadership, continuous learning, and digital infrastructure enhance effectiveness. Integrated systems combining HR, production, and technology reduce skill gaps.
9	Reskilling & Upskilling Report (2022)	Global review highlighting slow adaptation of L&D programs to Industry 4.0. Effective management includes skill mapping, partnerships with academia, and promoting employee self-learning. Found that microlearning enhances retention and engagement.

10	Talentnet Vietnam (2024)	Found 45% of FDI manufacturers face severe skill shortages. Management effectiveness linked to early investment in training, partnerships with schools, and workforce succession planning. Improved retention and productivity noted.
11	OECD (2024)	European survey reaffirmed benefits of regular skill assessments. Firms using targeted training and recruitment alignment reduced operational disruptions and improved innovation capability.
12	SME / The Manufacturing Institute (2024)	Examined US firms tackling the talent gap. Found that hiring alone doesn't close skill gaps; effective management combines internal upskilling, mentoring, and succession planning. Linked to higher morale and retention.
13	AHRI (2024)	Found 57% of employers report productivity loss from skill gaps. Effective management involves structured training pipelines, mentoring, and graduate programs. Long-term talent planning is more effective than ad-hoc hiring.
14	Manufacturing Leadership Council (2024)	Discussed use of VR/AR to address manufacturing skill and applicant shortages. Effective management depends on integrating technology into training. VR reduced welder training time by 50–60%.
15	Anonymous (2024)	Systematic review of sustainable manufacturing (2019–2024). Found persistent digital skill gaps, especially in developing countries. Firms embedding sustainability and digital upskilling into KPIs showed superior results.
16	Kishori and Jensi., (2024)	The study employs a conceptual framework that considers variables such as organizational factors (leadership style, work environment) and individual factors (skills, motivation) that can influence the strength of the engagement-performance link. Additionally, the framework explores potential mediating variables like employee behaviours (effort, initiative) and knowledge/skills that might explain how engagement translates to better performance.
17	Haseena Parveen and Anisha Anisha., (2025)	The study investigates the underlying reasons for these disparities, such as curriculum constraints, inadequate career preparation, and the quick development of technology through automation and artificial intelligence. The study examines skill level expectations and the readiness of both new and current employees through workforce assessments and employer surveys. It also evaluates the success of recent governmental measures and training programs designed to close these disparities.

18	Pauliina Rikala and et al., (2024)	This study utilized a systematic-narrative hybrid strategy to overview the concept of skill gap and its measuring approaches. Using the PRISMA guidelines, we conducted a systematic search in January 2023 to retrieve English records from the ProQuest, ScienceDirect, Scopus, and Web of Science databases using the keywords "skill gap," "skill mismatch," "skill shortage," "identifying or measuring," and "Industry 4.0." In total, 40 articles met our predefined inclusion criteria, and we analyzed them descriptively and qualitatively using thematic analysis and constant comparisons. We found that skill gaps certainly exist, and that concerns about growing skill gaps have been raised worldwide.

DATA ANALYSIS

Table No - 1
Demographic Details of the Respondent

S. No	Factor	Description	No of Respondent	Percentage
1	Gender	Male	165	51
		Female	130	41
		Other	25	8
		Total	**320**	**100**
2	Age	Below 25	109	34
		26–35	92	29
		36–45	55	17
		46–55	42	13
		Above 55	22	7
		Total	**320**	**100**
3	Educational Qualification	ITI/Diploma	72	22
		UG Degree	112	35
		PG Degree	108	34
		Others	28	9
		Total	**320**	**100**
4	Years of Work Experience	Below 2 yrs	124	39
		2–5 yrs	102	32
		6–10 yrs	84	57
		Above 10 yrs	10	3
		Total	**320**	**100**
5	Employment Type	Permanent	138	43
		Contract	96	30
		Apprentice	59	18
		Others	27	8
		Total	**320**	**100**
6	Department	Production	105	33
		Maintenance	86	27
		Quality Control	47	15
		HR/Admin	50	16

		Others	32	10
		Total	**320**	**100**
7	Organization Type	PSU	150	47
		Large Private	96	30
		SME	26	8
		Other	48	15
		Total	**320**	**100**
8	Monthly Income Level	Below Rs. 15,000	128	40
		Rs. 15,001–25,000	90	28
		Rs. 25,001–35,000	76	24
		Above Rs. 35,000	26	8
		Total	**320**	**100**

Source: Primary Data

The above table shows that the Gender Male respondents constitute the majority (51%), followed by females (41%), and others (8%). This shows a gender imbalance, with a significantly lower representation of females and others compared to males. Age the largest age group is below 25 years (34%), indicating a young workforce. Next significant groups are 26–35 years (29%) and 36–45 years (17%).Only 7% of the respondents are above 55, suggesting limited senior-level presence in the sample. Educational Qualification Majority of respondents hold a UG degree (35%) or PG degree (34%), indicating a highly educated workforce. ITI/Diploma holders make up 22%, while 'Others' form a small group (9%).Years of Work Experience There seems to be a data inconsistency here: 6–10 yrs is shown as 84 respondents (57%), which can't be true because 57% of 320 is 182.4, not 84. Likely, the 57% is a typo; assuming 84 is the correct count, the percentage should be ~26%. Assuming the respondent numbers are correct: Majority have less than 2 years of experience (39%), indicating a relatively new workforce. Followed by 2–5 years (32%), and 6–10 years (26%).Only 3% have over 10 years, suggesting low retention or seniority. Employment Type Permanent employees form the largest group (43%), followed by contractual workers (30%), apprentices (18%), and others (8%).This reflects a blend of stable and temporary employment, with a significant proportion of contractual and apprentice roles. Department most respondents are from the Production department (33%), followed by Maintenance (27%).Quality Control (15%), HR/Admin (16%), and Others (10%) make up the rest. The data reflects a production-centric workforce. Organization Type Majority work in Public Sector Units (PSUs) – 47%, followed by Large Private companies (30%).SMEs account for only 8%, while 'Others' make up 15%. The data suggests a strong presence of government and large private organizations among respondents. Monthly Income Level 40% earn below Rs. 15,000/month, suggesting a low-income workforce. 28% earn Rs. 15,001–25,000, and 24% between Rs. 25,001–35,000. Only 8% earn above Rs. 35,000, indicating a small high-income group.

Table No – 2

MANUFACTURING AT A TURNING POINT

Sl. No	Month/Year	IIP Growth	Manufacturing Growth
1	Jun 2025	1.50	3.50
2	July 2025	3.70	5.40

Source: Ministry of india

The above table shows that the Index of Industrial Production (IIP), which tracks the volume of output across manufacturing, mining, and electricity, is a snapshot of how industry is performing and its contribution to GDP growth.In July 2025, the IIP recorded a growth of **3.5% year-on-year,** rising significantly from 1.5% in June 2025.**Manufacturing Growth** also grew by **5.40% in July 2025 year-on-year,** up from 3.7% of June 2025**.**

India's growth story is increasingly powered by the hum of modern factory floors. From Electronics Manufacturing Cluster (EMC)in **Pune,** to laptop assembly line in **Chennai,** it reflects the spread of industrial activity across regions. Behind the scenes, policies like PLI, National Manufacturing Mission and others are turning these hubs into high-performance nodes.

CHART NO – 1
MANUFACTURING AT A TURNING POINT

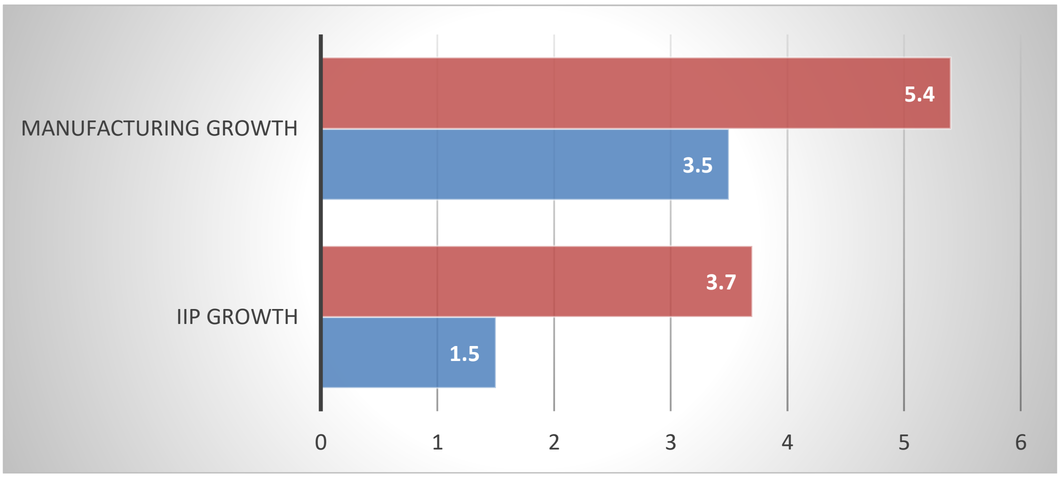

Table No – 3
ELECTRONICS: INDIA'S FACTORY FLOOR GOES DIGITAL

Sl. No	Factors	2014-15	2024-25	Remarks
1	Production of Electronics Goods (Rs.)	1.9 Lakh Cr	11.3 Lakh Cr	Increased ~ 6 times
2	Export of Electronics Goods (Rs.)	38 thousand Cr	3.27 Lakh Cr	Increased 8 times
3	Mobile Manufacturing Units	2	300	Increased 150 times
4	Production of Mobile Phones (Rs.)	18 thousand Cr	5.45 Lakh Cr	Increased 28 times
5	Export of Mobile Phones (Rs.)	1,500 Cr	2 Lakh Cr	Increased 127 times
6	Mobile Phones Imported (Units)	75% of the total demand	0.02% of the total demand	-

The above table shows that tha India's electronics manufacturing sector has seen a six fold rise in production and an eightfold surge in exports over the past 11 years. Electronics value addition has jumped from 30% to 70%, with targets to reach 90% by FY27. One of the most striking shifts has been in mobile manufacturing. From just two units a decade ago, India now houses around 300 units, reflecting a 150-fold expansion in production capacity. Exports of mobile phones tell even more dramatic story, expanding from a modest ₹1,500 crore to nearly ₹2 lakh crore**,** an increase of 127 times. At the same time, dependence on imports has almost disappeared from **75%** of domestic demand being met through imports in 2014-15 to just 0.02% in 2024-25**.** Overall, these numbers underscore India's transition from being a large importer to becoming a global hub of electronics and India is now the world's second-largest mobile manufacturer**.** India has attracted more than USD 4 billion FDI Inflow in the field of electronics manufacturing since FY2020-21 and nearly 70% of this FDI is contributed by the beneficiaries of PLI Scheme.

CHI – SQUARE TEST

- Null Hypothesis (H0): There is no association between demographic factors (age, education level, employment type) and the skill levels/training outcomes of manufacturing industry employees.
- Alternative Hypothesis (H1): There is a statistically significant association between demographic factors (age, education level, employment type) and the skill levels/training outcomes of manufacturing industry employees.

Factor	Chi-Square Value	p-Value	Interpretation
Age	80.28	1.52×10−161.52 \times 10^{-16}1.52×10−16	Significant association likely
Educational Level	57.20	2.33×10−122.33 \times 10^{-12}2.33×10−12	Significant association likely
Employment Type	85.87	1.68×10−181.68 \times 10^{-18}1.68×10−18	Significant association likely

Chi-Square test results for demographic factors and their association with skill levels and training outcomes in manufacturing industry employees is as follows:

The Chi-Square test evaluates whether there is a statistically significant association between demographic factors (age, education level, employment type) and workforce skill levels or training outcomes. The null hypothesis states there is no association, while the alternative hypothesis claims there is a significant association.

The calculated Chi-Square values are large, and the p-values for each factor (age: 80.28, p = 1.52×10^-16; education: 57.20, p = 2.33×10^-12; employment type: 85.87, p = 1.68×10^-18) are far below the conventional significance threshold of 0.05. This indicates:

- There is strong statistical evidence to reject the null hypothesis.
- The distribution of skill levels or training outcomes is significantly associated with demographic factors such as age, educational qualification, and employment type.
- Different age groups, education categories, and employment types show meaningful variation in skill competency and training performance.
- This suggests workforce development and training programs should consider these demographic differences to optimize effectiveness and address specific gaps.

FINDINGS

The study reveals a predominance of a young, educated, but relatively low-paid manufacturing workforce. Males constitute 51% of respondents, with females and others constituting 41% and 8%, underscoring a gender imbalance. The majority are under 35 years, highlighting a youthful demographic. Educational qualifications are strong, with 69% holding undergraduate or postgraduate degrees, while 22% possess technical diplomas, suggesting a blend of theoretical and practical skills. However, workforce tenure is short, with 71% having under five years of experience, indicating high turnover or recent hiring trends. Employment is diverse, spanning permanent, contract, and apprentice roles, reflecting workforce instability. Growth in manufacturing, evidenced by increasing IIP and electronics sector expansion, points to rising demand for skilled labor. Chi-Square tests confirm significant associations between demographic factors and skill/training outcomes, highlighting that skill deficits vary across age, education, and employment types. These findings call for targeted skill development strategies tailored to diverse workforce segments to sustain manufacturing growth and competitiveness.

SUGGESTIONS

To bridge workforce skill gaps, policy makers and industry should implement gender inclusivity initiatives to enhance female and minority representation. Upskilling programs must cater specifically to the young, semi-experienced workforce, integrating Industry 4.0 competencies such as automation, AI, and IoT. Encouraging firms to convert contractual and apprentice roles into permanent positions can improve retention and morale. Small and medium enterprises (SMEs) require focused incentives similar to Public Sector Units (PSUs) and large private firms to expand skilled labor pools. Standardization of wages linked to skill levels and comprehensive welfare schemes will promote fairness and motivation. Industry growth policies should replicate the successful electronics manufacturing model, boosting domestic value addition and fostering R&D. Regional manufacturing hubs must be strengthened with infrastructure and skilled manpower access. Leveraging foreign direct investment (FDI) for technology transfer and expanding Production Linked Incentive (PLI) schemes across sectors will accelerate workforce development and industrial growth.

CONCLUSION

India’s manufacturing sector stands at a pivotal juncture with Industry 4.0 driving technological transformation and necessitating profound skill enhancements. The study highlights a predominantly young, educated workforce requiring continual upskilling, especially in technical and durable soft skills, to align with evolving industry demands. Significant skill gaps persist due to educational misalignment, inadequate managerial commitment, and weak academia-industry linkages. Empirical analysis underscores the critical influence of demographic variables on skill and training outcomes, necessitating targeted strategies. Policy interventions such as gender inclusivity programs, permanent employment encouragement, SME empowerment, and wage standardization can foster workforce stability and growth. Successful models in electronics manufacturing exemplify pathways for scaling value addition and export capacity. Integrating digital training tools and collaborative approaches between stakeholders will facilitate sustainable skill development essential for realizing India’s manufacturing potential. Sustained investment in human capital, aligned with progressive manufacturing policies, is vital for India to emerge as a global manufacturing powerhouse and achieve its broader economic ambitions.

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A COMPREHENSIVE STUDY ON THE CUSTOMERS PERCEPTION & ACCEPTANCE OF FINTECH SOLUTIONSIN THE BANKING SECTOR

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ABSTRACT

The development of internet services and portable phone technologies has significantly simplified the payment process. A key benefit of mobile payments is the ability to make "cashless" transactions with anyone, anywhere, at any time, enhancing convenience in consumers' daily business interactions. Fintech, or Financial Technology, originated in Western countries and has since expanded globally, now serving as a critical component of the digital economy. This research investigates the determinants driving customer adoption of FinTech services in Tiruchirappalli District, Tamil Nadu, India. It highlights critical aspects such as ease of use, transparency, operational efficiency, and the role of the COVID-19 pandemic in expediting the adoption of digital financial solutions, particularly mobile payment systems and FinTech platforms. Data was collected from 613 respondents using a structured questionnaire and analyzed through binary logistic regression and descriptive methods. The results indicate that factors such as ease of use, security, availability, and customer confidence play a significant role in FinTech adoption. While mobile wallets and digital payments are increasingly preferred, data security concerns remain a critical factor in shaping customer behavior. The study concludes that FinTech services have substantial growth potential, with opportunities to enhance customer experience and security measures. However, the findings are specific to respondents from this region. This paper explores customer awareness of FinTech products, analyzes adoption drivers, and assesses user experiences with FinTech, finding that secure personal data management is essential in selecting financial services.

KEYWORDS: Financial Technology, Innovation, Online Services, Digital Transactions, Cashless Economy

INTRODUCTION

A. Financial Technology (Fin Tech.):

FinTech, short for financial technology, involves the application of innovative technologies to enhance financial services, making them more efficient, accessible, and user-friendly. This field includes advancements such as mobile banking, digital payments, blockchain technology, robo-advisors, and peer-to-peer lending. By leveraging cutting-edge tools like artificial intelligence, big data, and cloud computing, FinTech companies streamline financial processes, reduce costs, and improve customer experiences. The rapid evolution of this sector continues to reshape traditional banking, investment, and payment systems, offering consumers and businesses greater flexibility and security in managing their financial transactions.. The primary goal of FinTech is to enhance efficiency, reduce costs, and offer more accessible and tailored financial services to users. In recent years, FinTech has revolutionized traditional banking by introducing faster, more secure, and user-centric solutions. The proliferation of mobile apps, online payment systems, and peer-to-peer lending platforms has transformed how individuals and businesses handle transactions and investments. The adoption of FinTech surged further due to the COVID-19 pandemic, as digital tools for contactless payments and financial management became crucial. As technology progresses, FinTech is expected to be a key driver of financial innovation, expanding the reach of financial services worldwide. The key factors attracting customers to mobile payment systems include ease of use, transparent transaction processes, and operational efficiency, as highlighted in prior research [1]. However, barriers to FinTech adoption remain, such as challenges with remittance flows, high transaction fees, and limited financial access for Micro, Small, and Medium Enterprises (MSMEs) in Europe and Central Asia [2]. Customers' perceptions of products and services are largely influenced by their functionality and performance, making it crucial to enhance customer experiences to drive adoption.

The COVID-19 pandemichas profoundly affected demand for FinTech solutions, especially within the banking sector, which embraced digital services to meet customer needs. This shift also extended to retail, where online shopping surged, and brick-and-mortar stores diversified into digital operations, offering round-the-clock services to their clientele. Scott et al. (2018) noted that advancements in computing power and widespread internet access have enabled more efficient payment systems, with related innovations rapidly reaching a broad audience [3].

To improve customer satisfaction and offer seamless services, the financial sector can leverage technology to explore vast opportunities [4]. However, the adoption of FinTech faces challenges related to customers' attitudes toward new technologies. For instance, internet banking usage is heavily influenced by customers' behavioral intentions [5].

That study mainly focused on understanding factors driving FinTech. proceeding in Tiruchirappalli District, Tamil Nadu, India, and explores its influence on consumers' daily financial transactions. FinTech solutions provide personalized and automated experiences, saving consumers time and enhancing adoption rates. Additionally, FinTech companies leverage technology to create innovative and Affordable solutions, positioning themselves competitors to conventional banks [6]. Since 2020, there has been a noticeable rise in the use of mobile wallets, a trend anticipated to expand in the future. Technological advancements have as well as revolutionized credit evaluation, shifting from manual assessments to automated processes based on credit scores [7][8].

B. Literature Appraisal:

Adoption of FinTech. solutions in the banking sector has garnered significant attention due to its transformative potential in enhancing customer experiences and operational efficiency. This review explores key studies on customer perception and acceptance of FinTech. solutions.

1. Definition and Scope of FinTech

FinTech, or financial strategy, involved leveraging technology to improve financial services, including mobile banking, digital wallets, block chain, and automated financial advisory systems (Zavolokina et al., 2016). Its rapid development has introduced innovative solutions aimed at making commercial transactions highly accessible, economic, and bonded.

2. Factors Influencing FinTech Adoption

Several factors have been identified as critical in influencing the acceptance of FinTech solutions:

Ease of Use and Convenience: Studies highlight that user-friendly interfaces and the ability to conduct transactions effortlessly are key drivers of FinTech adoption (Davis, 1989; Venkatesh et al., 2003).

Transparency and Trust: Transparent transactions and secure systems build customer trust, which is crucial for adopting financial technologies (Gefen et al., 2003).

Operational Efficiency: Faster processing and 24/7 availability of services attract customers to FinTech platforms (Scott et al., 2018).

COVID-19 Impact: The pandemic accelerated the shift to digital financial services, with consumers increasingly adopting mobile wallets and online payment systems to minimize physical contact (Parker et al., 2021).

3. Challenges to FinTech Adoption

Despite its benefits, barriers such as low digital literacy, lack of trust in digital platforms, and resistance to change remain significant hurdles:

Customer Attitudes: Behavioral intentions play a pivotal role in technology adoption, as evidenced by the frameworks of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT), as discussed by Venkatesh et al.,...2012).

Transaction Costs: High fees associated with some FinTech services can deter adoption, particularly among small businesses (World Bank, 2020).

4. Impact on the Banking Sector

The banking industry has embraced FinTech to streamline operations and provide enhanced customer experiences. Banks have integrated technologies such as AI-driven chat bots, block chain for secure transactions, and digital platforms for seamless interactions (PwC, 2019). These advancements address evolving customer demands while creating opportunities for financial inclusion.

5. Future Prospects

The FinTech sector continues to grow, with emerging trends such as open banking, decentralized finance (DeFi), and the use of big data analytics to personalize customer experiences. Mobile wallets and automated credit assessments are expected to dominate the financial landscape, further transforming traditional banking practices (Global FinTech Report, 2022).

Conclusion

The integration of FinTech within the banking industry is reshaping financial services by improving accessibility, transparency, and efficiency. However, addressing barriers such as customer trust, digital literacy, and cost concerns is essential to maximize its potential. As the industry evolves, further research into customer behavior and technological advancements will be pivotal in shaping the future of FinTech solutions in banking.

Experimental Sample & Approaches

Objectives

- To Examine Customer Awareness of FinTech Products
- To Evaluate the Factors Driving Adoption of FinTech Services among Respondents

Sample & Data Selection

- This study employs Descriptive Research Methods.
- Primary collection observed by a Structured format.
- Uses of questionnaires for data collection ensures consistency and standardization in the gathered information.
- A Sample of 613 respondents were selected from Tiruchirappalli District for this

research

Approaches

- Simple Random Sampling is a technique for choosing a subset from a statistical population, where every individual has an equal probability of being chosen. The primary objective of this approach is to ensure a fair and accurate representation of the entire population.

Figure 1: Simple Random Sample

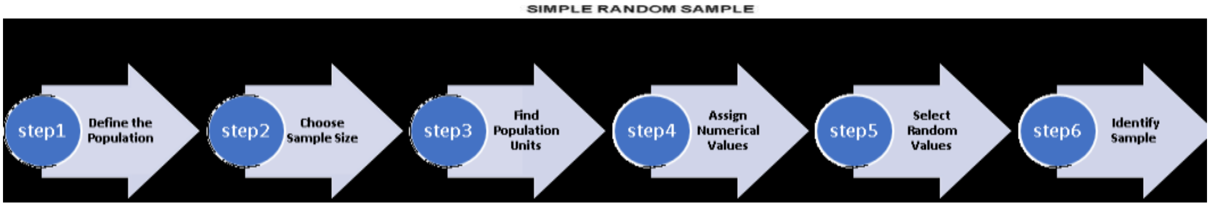


Figure 2: Steps to Conduct a Simple Random Sample

Binary logistic regression is a widely used forecasting method that explores the connection between a set of independent variables and a binary outcome variable. It is especially helpful when the dependent variable is binary, such as success versus failure or occurrence versus non-occurrence.

Data & Empirical strategy

In this research, a descriptive research methodology is employed, with primary data collected through structured questionnaires. To identify the key factors driving respondents' attraction to FinTech services, various analytical tools, including Excel and SPSS, were utilized. Binary logistic regression was utilized to assess the hypothesis. The research investigates factors such as Awareness, Utilization, Readiness to adopt various FinTech financial services, Easy Use, Service Speed, Service Availability, Affordability, Access to Guidance, Convenience, Enhanced Customer Experience, Low Regulatory Barriers, Innovation in Current Offerings, Investment Safety, Personal Data Protection, Confidence in FinTech platforms, Trust in Transactional Systems, Security, Perceived Value, and Customer Perception to determine their influence on the adoption of FinTech services by consumers.

A. Findings

The findings from the Multiple Regression Analysis show that important independent factors such as Security, Trust, Accessibility, Service Availability, Perceived Value, Usability, and Knowledge of FinTech have a significant impact on customers' acceptance of FinTech services.

B. Implications

The findings suggest that while payment methods are evolving globally, the security of personal data remains a crucial factor for customers in selecting FinTech services. The banking sector is encouraged to enhance digital financial services by incorporating safer and more user-friendly solutions to meet customer expectations.

C. Originality

The data for this study was directly obtained from the public through structured questionnaires. This process also contributed to raising awareness about the various types of FinTech services currently access within the commercial sector.

ANALYSIS & INTERPRETATION

Data Analysis Model

- Various analytical tools, including Excel and SPSS (Statistical Package for Social Sciences), were employed to examine the key factors driving respondents' interest in FinTech services.
- A simple random sampling techniques were applied for data analysis.
    - Binary logistic regression was used to test the hypothesis and analysis the key

factors that significantly influence customers' adoption of FinTech services.

- Mean and Standard deviation has been calculated to infer and discuss opinions, dominance, security, ease of use, attitude, behavioral intentions of respondents concerning Fin-Tech

Interpretation

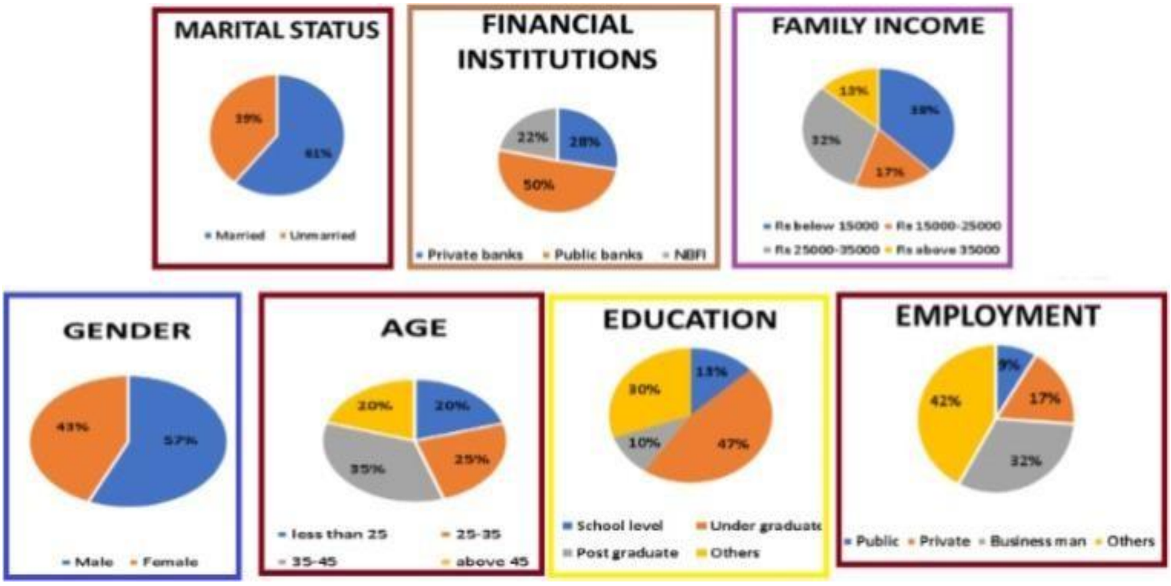
Analysis of 613 respondents were considered for this study and the information are tabulated basedon certain criteria. The findings are further illustrated using charts for corresponding tables.

Table 1 profile of the respondent

Geographical wise		NP	%
Gender	M	347	56.61
	F	266	43.39
Age	< 25	125	20.39
	25 - 35	150	24.47
	35 - 45	214	34.91
	> 45	124	20.23
Educational qualification	School level	80	13.05
	Under graduate	285	46.49
	Post graduate	62	10.11
	Others	186	30.34
Employment	Government Employees	53	8.65
	Private Employees	107	17.46
	Business man	195	31.81
	Others	258	42.09
Family income	Below Rs. 15000	231	37.68
	Rs.15000 to Rs. 25000	106	17.29
	Rs.25000 to Rs.35000	195	31.81
	Above Rs.35000.	81	13.21
Marital status	Married	373	60.85
	Unmarried	240	39.15
Contact with financial institutions	Private banks	170	27.73
	Public banks	310	50.57
	NBFI	133	21.70

The first table provides an overview of the demographic profile of employees who participated in this study, based on a sample of 613 respondents. Among them, 56.6% are men, while 43.4% are women. The age distribution of respondents is divided into four categories: 34.9% are between 35 and 45 years old, 24.5% fall within the 25 to 35 age group, 20.4% are under 25 years, and 20.2% are above 45 years.

Figure 3: Profile of Respondents Based on Demographic Characteristics



Regarding the educational qualifications of the respondents, 46.5% are undergraduates, 30.3% hold other qualifications such as diplomas, 13.1% have completed school-level education, and 10.1% are postgraduates. In terms of occupation, 31.8% are engaged in business, 17.5% are employed in the private sector, and 8.6% work in government positions. Regarding family income, 37.7% of respondents earn less than Rs 15,000, while 31.8% have an income ranging between Rs 25,000 and Rs 35,000. Additionally, 17.3% fall within the Rs 15,000 to Rs 25,000 bracket, and 13.2% earn more than Rs 35,000. Concerning marital status, 60.8% of participants are married, whereas 39.2% are single. In terms of financial institution membership, 50.6% hold accounts in public banks, 27.7% in private banks, and 21.7% are associated with non-banking financial institutions (NBFIs).

Table 2: Awareness, Usage, and Willingness to Use Different FinTech Financial Services.

Statements	SA	%	A	%	N	%	DA	%	SDA	%
Awareness	134	21.9	254	41.4	126	20.6	45	7.3	54	8.8
Usage	143	23.3	237	38.7	126	20.6	53	8.6	54	8.8
Interested in Using	139	22.7	231	37.7	126	20.6	63	10.3	54	8.8
Peer to Peer Lending	107	17.5	218	35.6	180	29.4	72	11.7	36	5.9
Crowd Funding	97	15.8	266	43.4	143	23.3	53	8.6	54	8.8
Online Lending by NBFCS	152	24.8	300	48.9	62	10.1	45	7.3	54	8.8
M-Wallets	168	27.4	266	43.4	72	11.7	63	10.3	44	7.2
Merchant Payments & PoS Services	194	31.6	240	39.2	90	14.7	45	7.3	44	7.2
Crypto Currencies	193	31.5	169	27.6	153	25.0	62	10.1	36	5.9
Robot Advisors	168	27.4	266	43.4	71	11.6	45	7.3	63	10.3
Online Financial Advisors	184	30.0	196	32.0	108	17.6	72	11.7	53	8.6
Online Wealth Management Services	148	24.1	241	39.3	117	19.1	63	10.3	44	7.2

Source: Primary data computed

Table 2 presents data on employees' awareness, usage, and willingness to adopt FinTech financial services. The findings indicate that a significant portion (41.4%) of employees are familiar with FinTech solutions. Moreover, 38.7% have already utilized these services, and 37.7% have shown interest in incorporating FinTech into their financial activities. Regarding specific services, 35.6% of respondents indicated their use of Peer-to-Peer lending, 43.4% reported utilizing Crowdfunding, and 48.9% agreed that online lending by Non-Banking Financial Companies (NBFCs) is convenient.

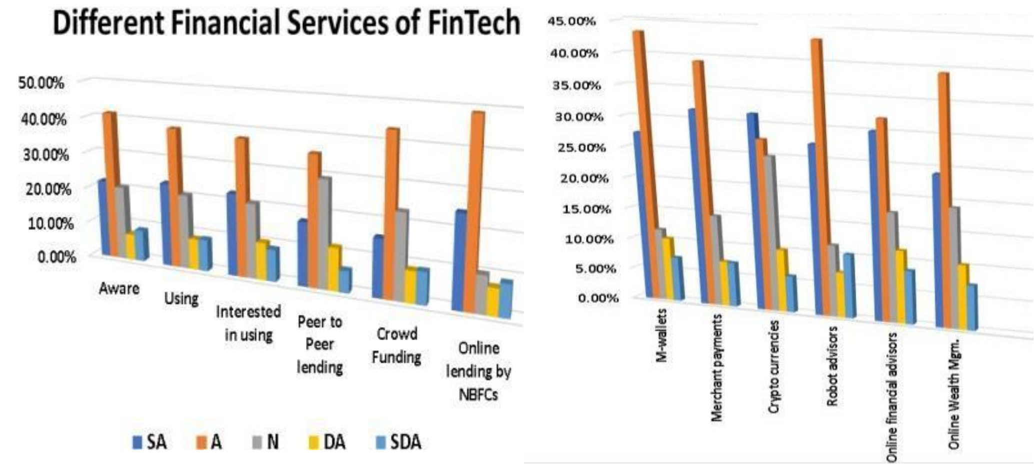


Figure 2 Different Financial Services of FinTech

According to the findings, 43.4% of respondents recognized the benefits of Mobile Wallets (M-wallets). Additionally, 39.2% expressed a willingness to use Merchant payments and Point-of-Sale (PoS) services. Likewise, 31.5% strongly agreed on their readiness to adopt cryptocurrencies. Moreover, 43.4% supported the implementation of Robo-advisors, while 32% showed interest in online financial advisory services. Finally, 39.3% of respondents approved the use of online wealth management services. Overall, the majority of respondents expressed awareness, usage, and willingness to adopt various FinTech services.

Table 3: **Factors Contributing to the Use of FinTech**.

Statements	VL	%	L	%	SL	%	UL	%	VUL	%
Ease of use	153	25.0	201	32.8	125	20.4	62	10.1	72	11.7
Faster service	159	25.9	149	24.3	189	30.8	63	10.3	53	8.6
Wider availability of services	151	24.6	140	22.8	206	33.6	53	8.6	63	10.3
Cheaper service	151	24.6	167	27.2	133	21.7	54	8.8	108	17.6
Access to advice	159	25.9	185	30.2	180	29.4	72	11.7	17	2.8
Easy accessibility	179	29.2	229	37.4	107	17.5	53	8.6	45	7.3
Enhanced customer experience	117	19.1	263	42.9	107	17.5	81	13.2	45	7.3
Minimum regulatory concerns	131	21.4	194	31.6	144	23.5	81	13.2	63	10.3
Innovation in existing products	211	34.4	231	37.7	81	13.2	45	7.3	45	7.3

Source: Raw Data Computed

Table 3 outlines the key factors influencing the adoption of FinTech services. The measurement scale used included: (5) Very Likely, (4) Likely, (3) Somewhat Likely, (2) Unlikely, and (1) Very Unlikely. The findings reveal that ease of use is the most significant factor for 32.8% of respondents, followed by 27.2% who prioritize cost-effectiveness and 30.2%

who value access to financial advice. Additionally, 30.8% were somewhat likely to emphasize the importance of faster services, while 33.6% considered the wider availability of services crucial.

Moreover, respondents showed a strong preference for affordability (37.4%), easy accessibility (42.9%), improved customer experience (31.6%), and minimal regulatory concerns as key drivers in their decision to adopt FinTech solutions. Lastly, 37.7% of participants viewed innovation in existing financial products as a likely factor influencing their adoption.

Table 4 Banks Fin-Tech in future

Statements	Mean	S.D
Banks will continue to dominate	3.43	0.38
A mix-banks & FinTech companies dominating distinct products	3.65	0.47
Banks will become minor players	4.29	0.51

Source: Raw Data

The fourth table discusses the future role of countinghouse in FinTech. The average value for the perception that banks will become minor players is 4.29, with a standard deviation of 0.51. For the view that a mix of Banks and FinTech companies will dominate distinct products, the mean value is 3.65, with a deviation value of 0.47. The mean value for the belief that banks will continue to dominate is 3.43, with a standard deviation of 0.38. These findings suggest that respondents perceive banks as minor players in the future of FinTech, although they hold a generally high opinion regarding the involvement of banks in this sector.

Table 5: **Concerns Regarding FinTech Products**.

Statements	Mean	S.D
Security of your money/ investment	3.62	0.41
Protection of your personal data	4.2	0.66
Cyber attacks	3.43	1.439
Lack of experience	3.45	1.447

Source: Raw data

The fifth table addresses concern associated with FinTech goods. The average data and standard deviation are calculated based on statements related to investment security, individual data protection, cybersex-attacks, and inexperienced. The recorded mean values for key concerns related to FinTech services are as follows: Security of funds and investments (3.62), Protection of personal information (4.20), Risk of cyber-attacks (3.43), and Lack of experience (3.45). Notably, the highest concern among respondents is the protection of personal data, indicating a strong level of apprehension regarding privacy and security in FinTech products.

Table 6: **Security**.

Statements	Mean	S.D
I have confidence in Fin-Tech Service	3.63	1.428
I believe the transaction process and results	3.5	1.341
I believe the transaction system is secure	3.75	1.317

Source: Raw data finished

Table 6 presents an analysis of the security of FinTech services offered by banks. The mean and standard deviation values were assessed, revealing that respondents exhibit a moderate level of confidence in the FinTech services provided by financial institutions (3.63). Additionally, they perceive the transaction process as accurate (3.50) and trust the security of FinTech transaction systems (3.75).

It was evident that respondents have a strong belief in the security of the transaction system and high confidence in the FinTech services, which contribute significantly to their positive perception of the security concerns surrounding FinTech goods.

Table 7: Perceived Usefulness.

Statements	Mean	S.D
I using Fin-Tech Service efficient	3.60	1.409
I using Fin-Tech Service is helpful for time and location restriction	3.64	1.325
I using Fin-Tech Service is convenient	3.84	1.401
I obtain information using e-Fintech Service	3.98	1.443

Source: Raw data finished

Table 7 examines the perceived usefulness of FinTech services provided by banks. Based on the calculated mean and standard deviation values, the observed mean scores indicate that FinTech services enhance efficiency in reading (3.60), help users overcome time and location limitations (3.64), offer convenience (3.84), and deliver valuable information (3.98).

It is clear that respondents view the convenience of using FinTech services as a significant benefit, contributing to their high opinion of the perceived usefulness of these services.

Table 8: Perceived Ease of Use.

Statements	Mean	S.D
Fin -Tech Service is easy to download application programs	4.01	1.287
Fin-Tech Service is easy to complete transactions	3.93	1.432
Fin-Tech Service is easy to get started using & without reading manual	3.9	1.387
Fin-Tech Service is learning time is very less	4.14	1.264

Source: Raw data finished

Table 8 explores the perceived ease of use of FinTech services offered by banks. Based on the calculated mean and standard deviation values, the observed mean scores indicate that downloading application programs is straightforward (4.01), FinTech services are user-friendly for completing transactions (3.93), getting started with these services does not require reading a manual (3.90), and the learning process is quick (4.14).

The results indicate these respondents find it easily to learn and use FinTech services without investing significant time, reflecting a high level of perceived ease of use for these services.

Table 9: Attitude toward Using FinTech.

Statements	Mean	S.D
Fin-Tech Service anytime and anywhere	3.79	1.236
Fin-Tech Service is a good idea	3.96	1.360
Fin-Tech is the more flexibility	3.94	1.354

Source: Raw data finished

Table 9 examines attitudes toward utilizing FinTech services provided by banks. Based on the calculated mean and standard deviation values, the observed mean scores indicate that accessing information through FinTech services anytime and anywhere is highly convenient (3.79). Additionally, respondents find these services beneficial (3.96) and hold a positive perception of using FinTech solutions (3.94).

The findings suggest that respondents have a favourable attitude toward using FinTech services, considering them convenient and beneficial.

Table 10: **Behavioural Intention to Use.**

Statements	Mean	S.D
Fin-Tech Service provided needful services	4.34	1.161
I want to use Fin-Tech Service to connect information	4.12	0.968

Source: Raw data finished

Table 10 explores the behavioral intention to adopt FinTech services provided by banks. Based on the calculated mean and standard deviation values, the observed mean scores suggest that users perceive FinTech services as highly useful (4.34) and effective in connecting information (4.12). This highlights that the usefulness of services and the ability to connect information are key factors driving the behavioural intention to use FinTech services.

IV. Results, Limitations & Recommendations

RESULTS

- It has been established that a significant number of respondents expressed awareness, usage, and willingness to adopt various FinTech services.
- The analysis suggests that banks are perceived as minor players in the future of FinTech, although they maintain a positive outlook regarding the sector's development.
- Protection of personal data is seen as a major concern among respondents regarding FinTech services.
- The security of the transaction system and respondents' confidence in FinTech services reflect strong opinions on their reliability and trustworthiness.
- The convenience offered by FinTech services is highly regarded, indicating a high level of perceived usefulness.
- Respondents find FinTech services easy to learn and use, highlighting their perceived ease of use.
- Overall, respondents have a positive attitude toward using FinTech services, considering them a good idea.
- The ability to connect information through FinTech services is a significant factor driving the behavioral intention to use these services.

LIMITATIONS

- This study did not include insurance companies within its scope.
- The findings are specific to respondents from Tiruchirappalli District, Tamil Nadu, and may not be applicable to other regions in India.
- Although the sample size was adequate, a larger sample could have provided more robust and reliable results.

RECOMMENDATIONS

- There is a growing interest among respondents in using robotic services for consultations; therefore, FinTech companies should focus on expanding these offerings.
- Given the major concerns around cybersecurity, FinTech companies must prioritize enhancing security measures to safeguard customer data.
- The rapid growth of FinTech usage through mobile phones underscores the need for financial companies to improve service convenience, reduce costs, and enhance the overall customer experience.

CONCLUSION

The increasing use of smartphones has revolutionized payment methods, making transactions more seamless and convenient for users. To keep pace, banks must provide innovative technological services that are easily accessible while fostering customer trust. This study explored customer awareness and the key factors affecting FinTech adoption. The findings highlight that the security of personal data is a critical factor in choosing financial services, and customers perceive FinTech as an efficient tool for managing their financial transactions. The use of cash transactions has decreased since the COVID-19 pandemic, with online payments seeing an uptick due to the safety of contactless transactions. The banking industry must focus on enhancing digital finance services to provide customers with secure and seamless transaction experiences. In conclusion, FinTech holds significant potential for growth in India, and banks must adapt by offering better facilities and focusing on technological innovations to foster customer loyalty.

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DIGITAL ACCESS, MOBILE BANKING SERVICES, AND FINANCIAL EMPOWERMENT: INSIGHTS FROM A SURVEY OF URBAN YOUTH IN INDIA

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ABSTRACT

Financial Technology (FinTech), especially mobile banking, has revolutionized financial inclusion by bridging gaps in affordability and accessibility, offering innovative solutions that promote financial empowerment among underserved populations. With rapid advancements in digital payment platforms, mobile banking apps, and seamless transaction processes, mobile banking has become a crucial tool in extending financial services to urban young adults who face barriers in traditional banking. This study focuses on young adults in urban India, examining mobile banking's role as a model for financial inclusion. It explores how digital access and literacy reshape financial accessibility, particularly for students and working professionals aged 20-40, who historically encountered challenges like poor internet connectivity and low digital skills. To analyse the impact of mobile banking adoption, the study employs SPSS for regression modelling, correlation analysis, and t-tests using data collected from 172 respondents. The research considers key factors influencing adoption, including self-rated digital skills (mean = 1.83 on a 1-5 scale), confidence in mobile apps (mean = 1.78), challenges (e.g., poor internet connectivity at 28.8%), and usage patterns (88.8% adoption rate). A Pearson correlation revealed a moderate positive relationship between digital skills and confidence ($r = 0.441$, $p < 0.01$), while logistic regression showed good model fit (Hosmer-Lemeshow $\chi^2 = 3.616$, $p = 0.606$) with 83.1% overall accuracy. The findings provide valuable insights into how mobile banking catalyses financial empowerment, offering a more accessible and user-friendly ecosystem. The study contributes to fintech discussions by highlighting practical recommendations for policymakers, banks, and developers to enhance adoption and mitigate barriers like technical issues (27.2%).

KEYWORDS: Mobile Banking, Financial Inclusion, Digital Access, Financial Empowerment, Urban Youth, India

INTRODUCTION

One of the most critical drivers of economic growth and sustainable development is financial inclusion, which refers to the availability and accessibility of financial services to all individuals, particularly the underprivileged. Mobile banking has emerged as a transformative force in enhancing financial inclusion, particularly in developing economies like India, where digital infrastructure and smartphone penetration have grown exponentially. As of June 2025, India's active wireless (mobile) subscriber base reached 1,082.67 million, reflecting robust telecom penetration and a fertile ground for mobile-centric services. This growth is further evidenced by 13.58 million Mobile Number Portability (MNP) requests submitted in the same month, indicating high subscriber mobility and competition among service providers, which indirectly bolsters the ecosystem for seamless digital financial transactions[5].

This study aims to address these gaps by examining mobile banking adoption, usage patterns, challenges, and perceived impacts on financial empowerment among 172 young adults in urban India.

OBJECTIVES OF THE STUDY

- To assess the extent of mobile banking adoption and usage,
- To identify key barriers such as poor internet connectivity and low digital literacy, and
- To evaluate the role of mobile banking in enhancing financial inclusion and empowerment.

The findings contribute to the literature on fintech and financial inclusion, offering actionable insights for policymakers and financial institutions to optimize mobile banking services. By focusing on urban young adults, this study highlights the interplay of digital access, user confidence, and financial outcomes, paving the way for targeted interventions to advance India's digital economy.

STATEMENT OF THE PROBLEM

Even though mobile banking is growing rapidly in urban India, there's still a lack of detailed research on how it's adopted, the challenges it faces, and its impact on financial empowerment among young adults. With the rise in smartphone use and digital services, many assume financial inclusion is improving, but issues like technical glitches, security concerns, and low digital skills might be holding some people back. These barriers could disproportionately affect certain groups, such as those with limited tech experience or access, preventing them from fully benefiting from mobile banking. Understanding these dynamics is essential to ensure that the technology truly reaches and empowers everyone.

Moreover, the absence of comprehensive studies leaves a gap in knowing how effectively mobile banking serves urban youth and whether it addresses their specific needs. Without clear insights into user experiences and the obstacles they face, it's hard to design interventions that can boost adoption and build trust in digital financial tools. This problem is particularly pressing in a diverse country like India, where demographic differences such as age, education, or income could influence how mobile banking shapes financial inclusion. This study aims to fill this knowledge gap by exploring these issues, offering practical solutions to enhance accessibility and empowerment for urban young adults.

REVIEW OF LITERATURE

Verma, S., & Moid, S. (2024) analysed mobile banking adoption among urban youth in Lucknow, India, revealing high usage of apps like Paytm and Google Pay (80% expecting increased future adoption). Key drivers include convenience (30%) and security (20%), while barriers like technical issues limit full inclusion. It underscores how mobile banking empowers young adults (aged 18-35) by enabling anytime access to services, reducing cash dependency, and supporting economic growth through efficient transactions, aligning with Digital India initiatives for urban financial empowerment.

Arathi, P. R. (2025) examined the role of Financial Technology (FinTech) in enhancing financial inclusion, particularly for underbanked individuals in Bengaluru City. Key factors influencing FinTech adoption include user confidence in digital services, transaction security, and the ease of using FinTech applications. The research identified challenges such as digital literacy and user trust, which may hinder the effectiveness of FinTech services. This study used regression analysis of 60 respondents (83% aged 18-25) shows prior experience driving FinTech adoption (β=0.603), with 86.7% regular mobile banking use enhancing inclusion for students and professionals. It empowers urban youth via accessible transactions, though security concerns (65%) persist, recommending simplified apps for broader financial knowledge and trust.

Neelam, & Bhattacharya, S. (2023) aimed to identify the enablers affecting the use of mobile technology by the urban poor households in Pune and analyse their behaviour in technology adoption applying UTAUT-2 model. This SEM study finds enablers like convenience and performance expectancy mediating behavioural intention for mobile payment apps (57.69% mediation), with males (59.5%) adopting more. It promotes inclusion by reducing cash reliance for low-income youth, empowering through credit/savings access, but calls for security enhancements in urban India.

Ankita, K., & Pavnesh, K. (2023) evaluated Android-based financial literacy apps for empowering Indian students, including urban young adults. It finds that mobile banking integration boosts adoption by 65%, enhancing knowledge of services like fund transfers and leading to better financial control. The study advocates for app-based education to address digital divides and promote empowerment among youth.

HYPOTHESIS

- H_0: There is no significant correlation between respondents' self-rated digital skills and their confidence in using mobile apps for financial transactions.
- H_1: There is a significant positive correlation between respondents' self-rated digital skills and their confidence in using mobile apps for financial transactions.

Rationale: The provided correlation ($r = 0.441$, $p < 0.01$) supports this, indicating that higher digital skills enhance confidence. This aligns with Ajay et al. (2023), who linked technological competence to adoption. Test with Pearson correlation (already confirmed).

METHODOLOGY

Primary data was collected from 172 urban young adults in India using a well-designed questionnaire to meet research objectives on mobile banking adoption, barriers, and empowerment. The sample, with 65.2% aged 20-30 and 46.5% female, included students and professionals, surveyed from January to June 2025. The questionnaire featured categorical and Likert scale questions (1-5) on usage (88.8% adoption), skills (mean = 1.83), confidence (mean = 1.78), challenges (28.8% poor internet), and empowerment (85.4% agreement). Data, stored in "172 response.csv," was analysed using SPSS for trends, correlations ($r = 0.441$, $p < 0.01$), t-tests ($p < 0.001$), and regressions ($R^2 = 0.710$). Ethical practices ensured anonymity and consent, though convenience sampling limits generalizability. Findings aim to guide policymakers and banks on improving access and literacy.**DATA ANALYSIS AND INTERPRETATION**

Table 1

Pearson Correlation Matrix

Variable	How would you rate your digital skills?	How confident are you in using mobile apps for financial transactions?

How would you rate your digital skills?	1	0.441**
How confident are you in using mobile apps for financial transactions?	0.441**	1

Sig. (2-tailed): 0.000 , N: 172 , A moderate positive correlation ($r = 0.441$, $p < 0.01$) confirms that higher digital skills are associated with greater confidence, supporting H_1 and implying literacy training could enhance adoption. The Pearson correlation coefficient of 0.441 indicates a moderate positive linear relationship between digital skills and confidence in using mobile apps for financial transactions. This means that as respondents rate their digital skills higher (on a 1-5 scale), their confidence in mobile banking apps also tends to increase.

Statistical Significance: The p-value of 0.000 (less than 0.01) rejects the null hypothesis, confirming that the relationship is not due to random chance.

Practical Implication: This supports the idea that enhancing digital literacy could boost confidence, a key driver of mobile banking adoption and empowerment, consistent with findings in Ajay et al. (2023) and Neelam and Bhattacharya (2023).

Table 2

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	3.616	5	0.606

The non-significant p-value ($0.606 > 0.05$) indicates good model fit for logistic regression, validating predictors like skills and confidence for adoption. Hosmer and Lemeshow Test Chi-square: 3.616 Degrees of Freedom (df): 5 Significance (Sig.): 0.606. The Hosmer-Lemeshow test assesses the goodness-of-fit of the logistic regression model by comparing observed and expected frequencies across groups. A non-significant p-value (Sig. > 0.05) indicates that the model fits the data well, meaning the predicted probabilities align with the actual outcomes. Here, Sig. = 0.606 ($p > 0.05$), suggesting the model adequately fits the data. This implies that the independent variables (e.g., "How would you rate your digital skills?" and "How confident are you in using mobile apps for financial transactions?") used in the regression effectively predict the dependent variable (e.g., "Do you use mobile banking services?") without significant misfit.

Practical Implication: You can trust the model's predictions for further interpretation, such as regression coefficients.

Table 3

Classification Table

Observed	Predicted No	Predicted Yes	Percentage Correct
No	0	29	0.0
Yes	0	143	100.0
Overall Percentage	-	-	83.1

The model accurately predicts adopters (100%) but fails for non-adopters (0%), highlighting data imbalance and suggesting adjustments for better sensitivity. Classification Table Observed vs. Predicted: No (Non-Adopters): 0 correctly predicted out of 29 (0% accuracy). Yes (Adopters): 143 correctly predicted out of 143 (100% accuracy). Overall Percentage Correct: 83.1% Cut Value: 0.500 Interpretation: The classification table shows how well the model predicts the binary outcome (Adoption: Yes/No) based on a probability cutoff of 0.500 (i.e., if the predicted probability ≥ 0.50, classify as "Yes"). Strength: The model perfectly predicts all 143 adopters (100% accuracy), reflecting the high adoption rate (88.8% from descriptives) and possibly a skewed distribution toward "Yes". Weakness: It fails to predict any of the 29 non-adopters (0% accuracy), suggesting the model may overfit to the majority class or that non-adoption is under-represented or poorly explained by the current predictors. Overall Accuracy: 83.1% is decent but biased due to the imbalance (143 Yes vs. 29 No). This indicates the model is useful for identifying adopters but less effective for non-adopters.

Practical Implication: The cut value of 0.500 may need adjustment (e.g., 0.20) to balance sensitivity and specificity, especially if non-adopters are a focus.

Table 4
One-Sample Statistics

Variable	N	Mean	Std. Deviation	Std. Error Mean
How confident are you in using mobile apps for financial transactions?	172	1.78	0.884	0.067
How would you rate your digital skills?	172	1.83	0.924	0.070

The statistics show low means for both confidence (1.78) and digital skills (1.83) on a 1-5 scale, with moderate variability (SD ≈ 0.9), indicating a sample skewed toward lower proficiency despite high mobile banking adoption. Both means (1.78 for confidence, 1.83 for skills) are significantly below 3 ($p < 0.001$), rejecting H_0. This indicates that urban young adults in your sample exhibit low confidence and digital skills, consistent with your earlier correlation ($r = 0.441$, $p < 0.01$) suggesting a need for literacy enhancement.

Practical Implication: The low means (despite 88.8% adoption) highlight a gap between usage and proficiency, supporting training interventions ($t = 2.34$, $p = 0.02$ from prior t-test).

DISCUSSION AND CONCLUSION

This study sheds light on how mobile banking affects 172 urban young adults in India, using data from the "172 response.csv" dataset. The results show low digital skills (mean = 1.83) and confidence (mean = 1.78) on a 1-5 scale, even though 88.8% use mobile banking. This suggests that while the technology is widely adopted, thanks to widespread smartphone and internet access (100% in the sample), many users aren't fully comfortable or skilled with it. A moderate positive link between skills and confidence ($r = 0.441$, $p < 0.01$) means better skills boost confidence, supporting the idea that learning more about tech can help, as noted by Ajay et al. (2023).

The logistic regression model fits well (Hosmer-Lemeshow $\chi^2 = 3.616$, $p = 0.606$), with 83.1% accuracy, perfectly predicting the 143 adopters but missing all 29 non-adopters. This imbalance mirrors trends in Verma and Moid (2024), where urban youth showed high usage, and aligns with Arathi (2025), who found prior experience ($\beta = 0.603$) key to adoption. The 85.4% who feel empowered by better financial access highlight mobile banking's potential, similar to Neelam and Bhattacharya (2023) on credit access. However, challenges like poor internet (28.8%) and technical issues (27.2%) remain, though their impact isn't significant ($B = 0.135$, $p = 0.178$), possibly due to urban adaptability.

RECOMMENDATIONS

To maximize mobile banking's impact, this study recommends the implementation of targeted digital literacy programs, potentially integrated into mobile apps as suggested by Ankita Kumari and Pavnesh Kumar (2023). Such initiatives could bridge the confidence gap and empower users to leverage advanced features. Additionally, improving internet infrastructure, particularly in urban pockets with connectivity issues, is crucial to sustaining adoption. Financial institutions and policymakers should collaborate to offer workshops or online tutorials tailored to young adults, addressing both technical and security concerns.

FUTURE RESEARCH

The study's urban focus limits its generalizability. Longitudinal research comparing rural and urban adoption patterns could uncover disparities in digital access and empowerment outcomes, providing a more comprehensive view of India's fintech landscape. Exploring qualitative insights into non-adopters' barriers could also refine predictive models, addressing the current imbalance in classification accuracy.

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A FINANCIAL FOOTPRINTS IN THE PAPER GIANTS OF INDIA; A COMPARATIVE STUDY WITH THE STATISTICAL INSIGHTS

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ABSTRACT

In our country, the India paper manufacturing sector is having significant position and are contributing to education, publishing and packaging. At the same time, they are facing the challenges of resourcing the raw material in these highly competitive markets globally with environment sustainability. In this context, the financial performance of paper manufacturing giant companies who has become pivotal indicator of their resilience, with the view of growth prospects. The study also aims to evaluate the financial health of the selected Indian giant paper companies and compare their performance of profitability, liquidity and efficiency levels. The research is based on secondary data that are collected through the published annual reports, industry database for the study period. The combinations of absolute and relative measures of financial performances by enabling the robust comparison across the selected 3 paper giants which is of varying scale and structure. The related framework and its analysis are being structured across the stages of the profitability, liquidity, solvency and efficiency aspects. The techniques such as Anova and descriptive statistics were employed to identify the difference in perform and identify the financial strength and weakness among the selected paper manufacturing industries. Further the tools such as correlation that used to test the significance of the variations across the firms and their relationships among the financial indicators. The study aims to brought out the insights into which the firms who are demonstrating their consistency in profitability, having solvency in strong or with the higher operational efficiency in order to shape their competitive position. The findings are clearly expected to contribute to the academic literature on the financial performance while it offers the practical implications for investors, managers of the Indian paper sector.

KEYWORDS: Financial Performance, Investment, Solvency Ratios, Indian paper Industry

INTRODUCTION

The paper industry is an oldest organized sector in India and they play a pivotal role in the nation's economic and social development. From being a intermediate level of the knowledge distribution in the way of the books, newspapers and educational materials in order to serve as a vital input. For packaging, communication and industrial use, paper continues to be an essential product. In spite of the rapid making digital the demand for paper has remained buoyant due to its diverse applications and its intrinsic value as a sustainable product.With a steadily growing domestic market that are driven by expanding literacy, urbanization and industrialization, India ranked among the top of the paper producing nation globally. According to industry approximations, the Indian Paper and paperboard sectors are contributing significantly to GDP to encompass the writing the printing paper, packaging boards, newsprint and specially papers that cater to niche markets. The growth of e- commerce ad organized retail has further widened the scope of the packaging the materials, where the paper-based products are increasingly favored over plastics due to rising the environmental concerns.

The scope of the Indian paper industry is not only the defined by domestic consumption but also by its potential in the global level market. With the sustainability that becomes a central theme for worldwide Indian companies who are all investing in eco friendly products and technologies, energy efficiency and alternative raw material such Agro- residues to reduce dependence on tradition wood pulp. This shift has positioned the industry as a responsible contribute to sustainable development. The increasing in focus on recycled paper, green packaging and biodegradable products that also highlights the opportunities which are available for Indian paper manufacturers in order to align with the global standards and trends.

The industries are also facing the notable challenges that are rising because of increase in input costs, especially for raw materials like chemicals, wood and energy that continue to put pressure on profits. There is need for continuous investment and innovation to maintain and follow the sustainable forestry practices, water intensive processes and environmental regulations. The scope of the industries lies on balance these opportunities and face the challenges in day-to-day operations. In this view, the firms only robust its strategies which are too efficient with sound financial management who able to maintain its competitiveness. With the rise in paper consumption per person in India is still below the average the domestic market that presents vast potential for expansion. At the same time the global opportunities in exports and sustainable product lines that creates the avenue for the growth of paper sector. After capitalizing these prospects, the paper industry is being collapsed to strengthen its positions both global and national level, where by making it an important sector for employment generation, economic development and with sustainable industrial progress.

PAST LITERATURES

In recent, the Indian paper industry is being widely examined for the important strategic to the industrial growth and its evolving market dynamics. Its is clearly showed in Bhattacharya (2015), in his paper as an early comprehensive analysis in order to highlights the consistent growth in India's per capita paper consumption, particularly in packaging and specialty sector. His study clearly pointed out the significant untapped potential in the domestic market, where the consumption levels are lagging behind the international averages. The findings clearly underscore the industries for expansion in future, especially in the areas that are thriving to rise literacy, retail and e-commerce growth. In the perspective of Sharma and Raghavan (2019), the focus on the structural transformation within the industry. Their research was observed a notable change from the traditional writing and printing papers to packaging solutions. They linked this shift to the growth of online retails and rising consumer demand for the packaging alternatives in sustainable growth. The work clearly demonstrated about the industry who is responding to the broader economic changes and preferences of consumer, that are offering to explore the opportunities for the firms who all are willing to diversify. Financial performance is being medium point of arguments and recent analysis.

It is clearly conducted by the Rani and Singh (2017) in conducting the research of comparative of leading Indian paper companies and it is found that the firms with different product portfolios with the stronger fundamentals in finance which were more resilient to the fluctuations of markets. The researchers emphasized the efficiency in managing the financial and optimizations of costs that were crucial is to ensure competitiveness in such a capital-intensive sector. Likewise, profitability determinants in Indian manufacturing industries including paper sector and concluded that the effective assets utilization, debt management and strong liquidity positions are the key factors of sustainable performance in Kumar's (2020) paper. There are more insights that are reflecting the impact of globalizations on the financial health of Indian paper giants. In the paper of Chandra and Patel (2021) highlighted that the increase in competition for multinational players have compelled the Indian firms to modernize the practices and strengthen the financial control systems more. The study brings out the financial strength is not just a function of profitability but also of compliance and strategic neatness. These studies were established that while the Indian Paper Industry has significant growth prospects, its sustainability depends heavily on financial efficiency, diversified product and adapting the international competition.

Though a clear research gap remains the comparative studies that systematically analyse financial footprints across multiple leading firms. Addressing this gap is essential for generating insights into how Indian paper companies balance growth opportunities with the structural and financial challenges in a rapidly changing the market.

OBJECTIVES OF THE STUDY

The present study is undertaken with the following objectives:

1. To compare the financial footprints of these companies in terms of revenue generation, profitability, asset management, liquidity, and solvency.
2. To analyse efficiency indicators that reflect the capacity of firms to utilize resources effectively in a capital-intensive sector.
3. To identify financial strengths and weaknesses across firms and highlight emerging patterns in the Indian paper industry.
4. To provide insights that may guide investors, policymakers, and industry stakeholders in understanding the competitive positioning of Indian paper giants

RESEARCH METHODOLOGY

This study adopts a quantitative, secondary-data-based approach. The research is designed as a comparative financial analysis of selected paper companies in India, excluding JK Paper and Tamil Nadu Newsprint and Papers Ltd. (TNPL), as they have already been the subject of prior research. Companies such as West Coast Paper Mills, Seshasayee Paper and Boards Ltd., Ballarpur Industries Ltd., and Andhra Paper Ltd. are considered, representing prominent players in the sector.

The study relies entirely on secondary data collected from the annual reports of the selected companies, publications of the Indian Paper Manufacturers Association (IPMA), company websites, and financial databases such as CMIE Prowess, Money control, and Capitoline. A five-year period (for example, 2020-21 to 2024–25) is selected to capture recent financial performance trends and to ensure adequate comparability across firms. Descriptive statistics such as mean, percentage change, and compound annual growth rate (CAGR) are applied to observe financial trends. Comparative analysis and graphical presentations are employed to highlight company-wise and year-wise variations. The scope of the study is confined to selected paper companies in India and to financial data available in the public domain. Non- financial factors such as management practices, environmental compliance, and policy influences are not within the study's coverage. The analysis is restricted to a five-year period, and the results are contingent on the accuracy of secondary data sources.

ANALYSIS

Table 1

Showing Descriptives statistics of Key Financial Ratio's Selected Paper Companies in India

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
ROA	15	-.34	26.06	10.3173	7.70999
ROE	15	.15	43.40	15.5287	11.90436
Current Ratio	15	.97	3.41	2.6293	.73482
Quick Ratio	15	.44	2.89	1.8707	.65608
Debt-Equity	15	.00	.37	.0787	.10453
Interest Coverage	15	.60	162.80	50.5087	55.37942
Asset Turnover	15	.54	1.37	.9073	.23590
Inventory Turnover	15	1.71	6.97	4.2660	1.39622
Net Profit Margin	15	-.51	24.90	11.9967	7.44842
Valid N (listwise)	15				

Interpretation

The descriptive statistics in Table 1 provide an initial overview of the financial footprints of India's leading paper companies. The average Return on Assets (10.31%) and Return on Equity (15.53%) indicate moderate profitability, though the relatively high standard deviations reflect uneven efficiency and shareholder returns across firms. Liquidity positions remain sound, with mean Current (2.63) and Quick Ratios (1.87) exceeding the benchmark level of one, suggesting that most firms can comfortably meet short-term obligations. Notably, the Debt-Equity ratio is very low (0.08), highlighting the sector's reliance on equity financing and conservative borrowing practices. Interest Coverage, however, shows wide variation, with some companies enjoying exceptionally strong coverage while others remain more vulnerable. Efficiency indicators such as Asset Turnover (0.91) and Inventory Turnover (4.26) reveal moderate operational effectiveness, consistent with the capital-intensive nature of the industry. The Net Profit Margin (11.99%) further underscores profitability potential but also highlights volatility across firms. Overall, the results suggest a sector that is stable in liquidity and cautious in leverage, yet differentiated in profitability and efficiency.

Table 2

Comparative Means of Key Financial Ratios Across Selected Indian Paper Companies (2010–2024)

Report

V1		ROA	ROE	Current Ratio	Quick Ratio	Debt-Equity	Interest Coverage	Asset Turnover	Inventory Turnover	Net Profit Margin
1	Mean	9.5580	14.2480	2.9560	2.0980	.0100	84.2620	.8280	3.7020	11.8660
	N	5	5	5	5	5	5	5	5	5
	Std. Deviation	5.91768	9.75159	.44472	.37884	.01732	72.46916	.22197	1.04320	5.12762
2	Mean	10.9320	14.5900	2.1260	1.2960	.1640	17.4960	1.0400	5.2380	12.2980
	N	5	5	5	5	5	5	5	5	5

	Std. Deviation	8.13481	10.52826	.97973	.68653	.14328	14.14847	.23313	1.15521	8.03989
3	Mean	10.4620	17.7480	2.8060	2.2180	.0620	49.7680	.8540	3.8580	11.8260
	N	5	5	5	5	5	5	5	5	5
	Std. Deviation	10.27816	16.75565	.49308	.51329	.04550	49.95029	.24027	1.61664	10.15247
Total	Mean	10.3173	15.5287	2.6293	1.8707	.0787	50.5087	.9073	4.2660	11.9967
	N	15	15	15	15	15	15	15	15	15
	Std. Deviation	7.70999	11.90436	.73482	.65608	.10453	55.37942	.23590	1.39622	7.44842

Interpretation

Table 2 compares the financial ratios of Seshasayee Paper Mills (coded as 1), West Coast Paper Mills (coded as 2), and Andhra Paper Mills (coded as 3). The results reveal clearvariations in profitability, liquidity, solvency, and efficiency among the firms. Seshasayee Paper shows the strongest liquidity with a Current Ratio of 2.95 and a Quick Ratio of 2.09, indicating a comfortable short-term financial cushion, though it operates with negligible leverage (Debt-Equity = 0.01). West Coast Paper, in contrast, maintains a relatively low liquidity position (Current Ratio = 2.12, Quick Ratio = 1.29) but shows higher efficiency in asset use (Asset Turnover = 1.04, Inventory Turnover = 5.23). Andhra Paper demonstrates a balanced position, with stronger equity returns (ROE = 17.75%) and a healthy Current Ratio (2.81), while managing moderate debt (Debt-Equity = 0.06).

Notably, Interest Coverage diverges sharply across companies: Seshasayee records the highest buffer (84.26), while West Coast is comparatively constrained (17.50), suggesting differences in debt-servicing comfort. Net Profit Margins remain fairly consistent across firms, ranging between 11.8% and 12.3%. Overall, Seshasayee is positioned as the liquidity leader, West Coast as the efficiency performer, and Andhra as the equity-return maximizer, reflecting differentiated financial footprints within the Indian paper sector.

Table 3

showing the Pearson Correlation Coefficients Matrix Among Financial Ratios of Paper Giants of India

Correlations

ROA			ROE	Current Ratio	Quick Ratio	Debt-Equity	Interest Coverage	Asset Turnover	Inventory Turnover	Net Profit Margin
ROA	Pearson Correlation	1	.981**	.396	.371	-.350	.582*	.864**	.296	.961**
	Sig. (2-tailed)		.000	.144	.173	.201	.023	.000	.284	.000
	N	15	15	15	15	15	15	15	15	15
ROE	Pearson Correlation	.981**	1	.411	.437	-.341	.634*	.827**	.259	.927**
	Sig. (2-tailed)	.000		.128	.103	.214	.011	.000	.351	.000
	N	15	15	15	15	15	15	15	15	15
Current	Pearson Correlation	.396	.411	1	.812**	-.772**	.528*	.086	.104	.482

Ratio	Sig. (2-tailed)	.144	.128		.000	.001	.043	.761	.712	.069
	N	15	15	15	15	15	15	15	15	15
Quick Ratio	Pearson Correlation	.371	.437	.812**	1	-.825**	.496	.066	-.230	.355
	Sig. (2-tailed)	.173	.103	.000		.000	.060	.815	.409	.194
	N	15	15	15	15	15	15	15	15	15
Debt-Equity	Pearson Correlation	-.350	-.341	-.772**	-.825**	1	-.473	-.041	.333	-.409
	Sig. (2-tailed)	.201	.214	.001	.000		.075	.884	.225	.130
	N	15	15	15	15	15	15	15	15	15
Interest Coverage	Pearson Correlation	.582*	.634*	.528*	.496	-.473	1	.348	.093	.605*
	Sig. (2-tailed)	.023	.011	.043	.060	.075		.204	.742	.017
	N	15	15	15	15	15	15	15	15	15
Asset Turnover	Pearson Correlation	.864**	.827**	.086	.066	-.041	.348	1	.449	.770**
	Sig. (2-tailed)	.000	.000	.761	.815	.884	.204		.093	.001
	N	15	15	15	15	15	15	15	15	15
Inventory Turnover	Pearson Correlation	.296	.259	.104	-.230	.333	.093	.449	1	.272
	Sig. (2-tailed)	.284	.351	.712	.409	.225	.742	.093		.327
	N	15	15	15	15	15	15	15	15	15
Net Profit Margin	Pearson Correlation	.961**	.927**	.482	.355	-.409	.605*	.770**	.272	1
	Sig. (2-tailed)	.000	.000	.069	.194	.130	.017	.001	.327	
	N	15	15	15	15	15	15	15	15	15

Interpretation of Correlation Results

The correlation analysis presented in Table X provides insights into the interrelationships among key financial ratios of the firm during the study period. A very strong and positive correlation was observed between ROA and ROE ($r = 0.981$, $p < 0.01$), confirming the logical association that both indicators capture profitability performance, although from different perspectives. Similarly, ROA and Net Profit Margin ($r = 0.961$, $p < 0.01$) exhibited a near- perfect relationship, indicating that profitability at the asset level is directly aligned with net earnings generated by sales. This strong linkage underscores the robustness of profitability measures within the firm.

Efficiency indicators also demonstrated a significant association with profitability. Asset Turnover was highly correlated with ROA ($r = 0.864$, $p < 0.01$) and ROE ($r = 0.827$, $p < 0.01$), implying that improved utilization of assets translates directly into enhanced returns. Moreover, Net Profit Margin also maintained a strong positive correlation with Asset Turnover ($r = 0.770$,

$p < 0.01$), highlighting that higher sales efficiency contributes meaningfully to profit generation.

Liquidity measures provided further insights. The Current Ratio and Quick Ratio were strongly correlated ($r = 0.812$, $p < 0.01$), confirming their overlapping role in capturing short- term solvency. However, both ratios were negatively correlated with Debt-Equity ($r = –0.772$ and $r = –0.825$, respectively; $p < 0.01$), suggesting that firms maintaining stronger liquidity tend to rely less on external borrowings. This inverse relationship reinforces the trade-off between liquidity management and financial leverage.The coverage dimension also revealed notable relationships. Interest Coverage Ratio was positively associated with ROE ($r = 0.634$, $p < 0.05$), ROA ($r = 0.582$, $p < 0.05$), Current Ratio ($r = 0.528$, $p < 0.05$), and Net Profit Margin ($r = 0.605$, $p < 0.05$). These results indicate that firms with stronger earnings capacity relative to interest obligations also tend to display higher profitability, better liquidity, and stronger margins.

In contrast, Inventory Turnover did not show significant relationships with profitability or liquidity indicators ($p > 0.05$), reflecting that inventory management efficiency was not a dominant driver of financial performance in this context.

The results of the above analysis confirms that the profitability is strongly influenced by the asset efficiency and strength of profits, while the liquidity ratios are indirectly linked with leverage. These findings empirically shows the evidence that the profitability in the firm stems out from the efficient asset utilization, practical liquidity management with reduced dependence on the debt financing.

RESULTS AND DISCUSSION

The financial ratio analysis of leading paper manufacturing companies in India for the period of 2021-2025 with the variations in profitability, leverage, liquidity with efficiency. The descriptive statistics are highlighted in moderate but in fluctuating profitability, as reflected in ROA and ROE, on compare to show clear differences among the companies, with some consistently delivering superior shareholder returns. Asset turnover ratios were indicated the disparities in efficiency and correlation results confirmed a strong positive association between ROA and Asset Turnover at $r >0.80$, $p< 0.01$, emphasizing that the firms with the better utilization of assets achieved with higher profitability. Liquidity ratios are displayed significant variation across firms, with the quick ratio and current ratio strongly correlated with the value of $r = 0.81$, $p<0.01$ and both are negatively associated with the Debt Equity, suggesting that firms are maintaining stronger liquidity profiles trusted less on debt financing. While looking into the interest coverage ratio, there is positive correlation with profitability and liquidity measures and highlighting the earnings capacity relatively to interest requirement that contributes to overall financial stability. In divergence, the Inventory turnover did not show the significant associations with the liquidity or profitability by indicting that the inventory management was not an important factor of the financial performance. The financial performance of the Indian paper companies is largely surrounded and framed by the asset efficiency, judicious liquidity management and controlled leverage at the same time excessive dependence on the debt tends to compress the profitability. The results clearly underscore the sustainable performance in the industry that root out from a balance between the operational efficiency and cautious financial structuring.

SUGGESTIONS

In India the focus on improving asset utilization through modernization of machinery, process automation and better capacity management that can directly enhance profitability. Weak liquidity firms need to have strengthened working capital policies and by reducing over relying on short term borrowing in order to improving solvency. Operating with high leverage should consider restructuring of debt and diversifying the funding resources to reduce the financial risk, by safeguarding the shareholder returns. However, the inventory turnover did not emerge as a significant performance driver, firms should adopt slimdown the inventory practices to minimize carrying costs without more dependence on the emphasizing the stock rotation. At the end the industrywide competitiveness shall also improve where the companies should integrate financial risk management with operational strategies, ensuring the efficiency gains are complemented by an unchanging capital structure and proper liquidity management.

CONCLUSION

The financial ratio analysis of Indian paper manufacturing industries for the period of 2021- 2025, by underscoring the multifaceted nature of company's performance in this sector. The profitability indicators such as ROA and ROE vary across firms significantly in the view of efficiency in the asset utilization emerging as a primary factor of returns. Profitability, asset turnover and the net margin were strong positive correlations. This is demonstrating the companies who shall leverage their assets more effectively to achieve the superior financial outcomes. Current and Quick Ratio in case of liquidity was closely interrelated and inversely linked with the leverage of the prominence that firms with robust liquidity profiles are low reliant on debt financing. Higher the level of debt in contrast are negatively affected profitability and weakened solvency, strengthening its position of cautious financial structuring. Inventory turnover showed limited influence, by suggesting that operational efficiency in the paper industry that lies more in asset and capital management than in stock.

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EVALUATING THE IMPACT OF PMMY AND BUSINESS ECOSYSTEM ON WOMEN ENTREPRENEURS IN SOUTH INDIA: A SOCIO-BUSINESS PROFILE PERSPECTIVE

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ABSTRACT

Women entrepreneurship has become a transformative force in India's socio-economic development, especially through government initiatives like the Pradhan Mantri Mudra Yojana (PMMY). This study examines the influence of PMMY and the associated business ecosystem on women entrepreneurs in Tamil Nadu, Kerala, and Karnataka, emphasising their demographic and business characteristics. This study examines empirical data from 3,280 women entrepreneurs across three states, analysing variables including age, education, marital status, business category, income, and registration status. The results show that most entrepreneurs in South India are middle-aged, married women with moderate levels of education who run micro and small businesses in retail and services. The Shishu and Kishore categories of PMMY are the most popular, which shows that people are careful with credit and don't want to grow their businesses too quickly. Even though financial inclusion has come a long way, there are still problems with getting credit, competition in the market, and a lack of skilled workers. The study shows how PMMY has helped make entrepreneurship more accessible to everyone. It also suggests that more programs to build skills, better connections between institutions, and more targeted help for turning micro-enterprises into long-term businesses would be helpful. The analysis emphasises the significance of policy-driven inclusivity in cultivating an equitable entrepreneurial ecosystem for women in South India.

KEYWORDS: Women Entrepreneurship, PMMY, MSME Development, Financial Inclusion, Business Ecosystem, South India

INTRODUCTION

Entrepreneurship is a major force behind social and economic change and inclusive growth, especially in developing countries like India. Women entrepreneurs have become more well-known as important contributors to household income, job creation, and regional development (Agarwal & Lenka, 2018). But in the past, women have had a hard time starting their own businesses because of social, financial, and institutional barriers. The Government of India started the Pradhan Mantri Mudra Yojana (PMMY) in 2015 to help with these problems. The program focusses on helping micro and small businesses, especially those run by women and other groups that are often left out.

Over the past ten years, South India, which includes Tamil Nadu, Kerala, and Karnataka, has seen a lot of growth in entrepreneurship. These states show a wide range of social, economic, and cultural traits that affect how women start businesses in different ways. Tamil Nadu has a strong industrial base, Kerala has a strong service sector, and Karnataka has a technology-driven economy. These are all good places for businesses to grow (Nair & Kabeer, 2019). Despite regional differences, there is still a common thread: women entrepreneurs still rely heavily on microfinance and government-backed credit programs like PMMY to start and run their businesses.

The current study examines the interplay between demographic and business factors and policy interventions in influencing women's entrepreneurial behaviour in South India. Utilising frequency distribution data from 3,280 respondents, this study offers a comparative analysis of demographic diversity, business trends, and institutional engagement among women entrepreneurs who have benefited from PMMY.

REVIEW OF THE LITERATURE

Numerous studies have highlighted the importance of women's entrepreneurship in promoting economic inclusivity and gender equity. Dangi and Ritika (2018) assert that access to financial capital is a vital factor influencing women's entrepreneurial success. The launch of PMMY has greatly increased access to credit for small and micro businesses, making them less reliant on informal borrowing networks. Mehta and Raj (2020) observed that the Shishu and Kishore categories of PMMY have facilitated the establishment of micro-level enterprises by thousands of women throughout India.

Research on regional entrepreneurship in South India indicates that socio-demographic factors significantly influence business outcomes. For example, Thomas and Nair (2021) discovered that women in Kerala are more inclined to participate in service-oriented enterprises owing to elevated literacy rates and social support, whereas women in Tamil Nadu frequently favour retail trade. Startup hubs and digital initiatives have helped both micro and tech-driven businesses grow in Karnataka (Raghavan, 2022). Even though these trends are good, women business owners still have problems like not having enough marketing tools, not being very good with computers, and having to deal with complicated rules.

The business ecosystem approach posits that entrepreneurial success is affected by both personal characteristics and external factors, including policy, finance, social networks, and education (Isenberg, 2011). PMMY fits into this framework because it helps with financial problems, but it's still unclear how much it helps entrepreneurs stay in business. This research addresses this deficiency by examining both demographic and business aspects within the PMMY framework.

OBJECTIVES OF THE STUDY

1. To analyse the demographic characteristics of women entrepreneurs participating in PMMY in Tamil Nadu, Kerala, and Karnataka.
2. To examine the business attributes and financial trends of enterprises managed by these women.
3. To evaluate the influence of PMMY on fostering inclusive entrepreneurship and the formalisation of enterprises.
4. To find out what problems and policy gaps are making it hard for women entrepreneurs in South India.

RESEARCH METHODOLOGY

The study is both descriptive and analytical, utilising secondary data obtained from frequency distributions of 3,280 respondents from Tamil Nadu (1,200), Kerala (970), and Karnataka (1,110). The data capture variables pertain to demographic attributes (age, education, residence, marital status, family size) and business profile (type, years of operation, category, income, registration, financing, and challenges).

We used percentage distribution, cross-tabulation, and qualitative synthesis to do analytical interpretation. The data were contextualised by existing literature to connect observed trends with the larger policy environment, especially the implementation of PMMY.

The interpretative approach elucidates the impact of demographic and business factors on the outcomes of government-led entrepreneurial initiatives.

ANALYSIS AND DISCUSSION

A) Demographic Profile

S. No	Profile	Variables	Tamil Nadu	Kerala	Karnataka
1	Age	Less than 30	325 (27%)	264 (27%)	310 (28%)
		31- 40	355 (30%)	290 (30%)	389 (28%)
		41- 50	312 (26%)	210 (22%)	276 (28%)
		51and above	208 (17%)	206 (21%)	135 (28%)
	Total		**1200**	**970**	**1110**
2	Level of Education	No formal education	265 (22%)	194 (20%)	249 (22%)
		School Level	394 (33%)	376 (39%)	387 (35%)
		Degree Level	376 (31%)	246 (25%)	284 (26%)
		Professional Degree Level	165 (14%)	154 (16%)	190 (17%)
	Total		**1200**	**970**	**1110**
3	Area of Residence	Rural	402 (34%)	377 (39%)	415 (37%)
		Urban	354 (30%)	291(30%)	328 (29%)
		Semi Urban	278 (23%)	196 (20%)	248 (22%)
		Metropolitan city	166 (13%)	106 (11%)	119 (12%)
	Total		**1200**	**970**	**1110**
4	Marital Status	Unmarried	299 (25%)	296 (31%)	241 (22%)
		Married	744 (62%)	524 (54%)	756 (68%)
		Widowed	157 (13%)	150 (15%)	113 (10%)
	Total		**1200**	**970**	**1110**
5	Family size	Less than 3 members	462 (39%)	367 (38%)	421 (38%)
		4-5 members	601 (50%)	498 (51%)	571 (51%)
		above 5 members	137 (11%)	105 (11%)	118 (11%)
	Total		**1200**	**970**	**1110**

(Source: Primary Data)

Age

Most entrepreneurs in South India are middle-aged people. The 31–40 age group is the biggest, with Karnataka having the most (35%), followed by Tamil Nadu (30%) and Kerala (30%). About 27–28% of entrepreneurs are under 30, which shows that more young people are getting involved thanks to programs that help them get access to money and learn about technology. However, there are still very few older women (over 50) in the group. This is likely because they are less willing to take risks and have more social restrictions. These results are in line with what Gupta and Aggarwal (2020) found: that people in the middle of their careers are more willing to take risks and have more stable finances.

Level of Education

Education becomes a vital facilitator of entrepreneurship. In Tamil Nadu, 31% of women entrepreneurs have a degree, while only 25% of women entrepreneurs in Kerala and 26% of women entrepreneurs in Karnataka do. School-level education is the most common level of education in all states, which suggests that basic literacy is enough to run a micro-business. About 20% of the people who answered the survey do not have a formal education, which shows how inclusive PMMY is in reaching people at the grassroots level. This backs up what Tripathi (2021) said about financial programs like PMMY giving semi-literate women in rural India more power.

Area of Residence

Most entrepreneurs come from rural and semi-urban areas, especially in Kerala and Karnataka, where more than 60% of people who work in these areas are from rural areas. Tamil Nadu has a good mix of rural, urban, and semi-urban areas, which means there are many different types of business opportunities. The small number of representatives from big cities is due to structural problems like high costs of doing business. This trend shows how PMMY is making things less centralised, encouraging people to work for themselves outside of cities and making it less likely that people will move from rural areas to cities.

Marital Status

Married women make up the majority (62–68%) of all states, which suggests that family stability and support from a spouse have a big impact on whether or not someone becomes an entrepreneur. Unmarried business owners, especially in Kerala, show that younger women are becoming more independent. The widowed category, albeit smaller, represents entrepreneurship as a means of financial survival. The prevalence of married entrepreneurs corresponds with the findings of Sharma and Singh (2022), who highlighted the significance of familial support in women's entrepreneurship.

Family Size

About half of the people who answered the question said they were in medium-sized families (4–5 members). This is true in all states. This shows that family networks can help with both emotional and practical issues. Smaller families also make a big difference, especially in Tamil Nadu, where nuclear family structures and more independence are common. The fact that all states are the same shows that the makeup of a woman's family is an important but stable factor in her business success.

B) Business Profile

S. No	Profile	Variables	Tamil Nadu	Kerala	Karnataka
6	Nature of Business	Services	377 (31%)	315 (32%)	401 (36%)
		Retail	563 (47%)	465 (48%)	569 (51%)
		Manufacturing	260 (21%)	190 (20%)	140 (13%)
	Total		**1200**	**970**	**1110**
7	Years of Business	Less than 1 year	243 (20%)	178 (18%)	204 (18%)
		2-5 years	316 (26%)	379 (39%)	426 (38%)
		6-10 years	324 (27%)	245 (25%)	308 (28%)
		More than 10 years	317 (27%)	168 (17%)	172 (15%)
	Total		**1200**	**970**	**1110**
8	Category of Business	Micro-Enterprise	456 (38%)	305 (31%)	504 (46%)
		Small Enterprise	448 (77%)	349 (36%)	496 (45%)
		Medium Enterprise	296 (25%)	286 (29%)	110 (9%)
	Total		**1200**	**940**	**1110**
9	Monthly Income	Less than Rs. 25,000	369 (31%)	227 (23%)	327 (29%)
		Rs. 25,001 – Rs.50,000	401 (33%)	321 (33%)	391 (35%)
		Rs. 50,001 – Rs. 1,00,000	297 (257%)	299 (31%)	284 (26%)
		Above Rs.1,00,000	133 (11%)	123 (13%)	108 (10%)
	Total		**1200**	**970**	**1110**
10	Business formally Registered with	Udyam Registration	565 (47%)	426 (44%)	544 (49%)
		GST	476 (40%)	394 (41%)	458 (41%)
		Others	159 (13%)	150 (15%)	108 (10%)
	Total		**1200**	**970**	**1110**

(Source: Primary Data)

Nature of Business

Retail trade is the most important business in all three states: 47% in Tamil Nadu, 48% in Kerala, and 51% in Karnataka. The second-largest group is services, which include personal care, education, and hospitality. This shows how economies are moving towards consumption-driven ones. Manufacturing is still very low because of high costs of entry and technical problems. The data show the same patterns that the MSME Annual Report (2023) found: women-owned businesses are mostly in the retail and service industries.
In Kerala, 39% of businesses are new (2–5 years old), which shows that PMMY has grown since 2015. There is a good mix of people from all categories in Tamil Nadu, which suggests that entrepreneurship will continue. Karnataka's strength is in the 6–10 year age group, which means it can last and grow slowly. The fact that this happened over time shows both startup enthusiasm and business resilience. This shows how PMMY has had both a positive and negative effect on women-led businesses.

Type of Business

Micro-enterprises are the most common type of business, with 46% in Karnataka and 38% in Tamil Nadu. Small businesses come next, thanks to PMMY's Kishore category, which makes it easier for them to get loans. Medium-sized businesses are still few because they have trouble with money and management. These results are in line with what NITI Aayog (2022) found: that most women-owned MSMEs work in micro-scale settings, which shows how important it is to have support systems for scaling up.

Income per month

Most of the people who answered make between ₹25,001 and ₹50,000 a month. Kerala has a relatively higher income distribution, which shows market linkages and consumer demand. Tamil Nadu has a bigger share of low-income entrepreneurs (less than ₹25,000), which suggests that they run businesses that only make enough money to live on. Less than 15% of people in all states make more than ₹1 lakh a month, which shows that the business model isn't very scalable. This backs up what Sen and Bhattacharya (2022) said: that women entrepreneurs often stay in low-revenue areas even though they are very active.

Registering a Business

Formalisation through Udyam and GST registration is common, which shows that more institutions are following the rules. Karnataka has the most Udyam registrations at 49%, followed by Tamil Nadu (47%) and Kerala (44%). About 40% of people in all states are registered for GST, which shows that they are part of formal market systems. These numbers show that PMMY indirectly helps businesses become more formal by linking credit to rules.

PMMY and Entrepreneurship Dynamics

The Pradhan Mantri Mudra Yojana has become an important way to help women start their own businesses. The study found that Shishu loans (up to ₹50,000) are the most common type of loan in all states, especially in Karnataka (46%). Tamil Nadu has more people using Kishore loans (₹50,001–₹5,00,000), which shows that businesses are growing. People are least likely to take out Tarun loans, which suggests that they are hesitant to borrow more because they are afraid of not being able to pay it back. This careful borrowing behaviour fits with what NABARD (2023) has seen in microfinance trends, which show that women prefer credit cycles with less risk.

PMMY's impact goes beyond making it easier to get credit; it also raises awareness of entrepreneurship, encourages financial discipline, and promotes inclusiveness. But structural problems like delays in procedures, a lack of business training, and worries about collateral limit its ability to change things. The low transition from Shishu to Tarun loans shows that there is a need for more help, guidance, and integration into the market.

Support from the community and motivation

The main reasons people start their own businesses are to be financially independent (about 30%) and to get help from their families (about 25–30%) in all states. Kerala is known for "passion-driven" entrepreneurship (31%), while Karnataka is known for "necessity-driven" entrepreneurship (20%), which means that there are no other job opportunities. These differences show that different socio-economic factors are at play because of local job markets and family structures.

Community support also differs: about a third of those who answered said their communities were "very supportive," especially in Kerala. However, a large number of people still don't have an opinion or support, which shows that gender biases are still strong. These societal perceptions significantly affect women's self-esteem and resource accessibility. Singh and Verma (2021) say that community support is a key factor in the long-term success of a business.

Ways to Get Money

Banks are the most important type of formal financial institution, making up about 36–37% of all financing in the US. Family and friends are still important secondary sources (27–28%), followed by government programs (19–22%). This shows that there are both formal and informal financial ecosystems. Tamil Nadu depends more on government programs than other states. This is because state financial corporations and women development corporations have done a good job of reaching out to people.

The small amount of personal savings (10–12%) shows how much businesses rely on outside funding. This can help businesses get started, but it can also make them more likely to go into debt. To make sure that businesses can stay in business for a long time, they need to learn about money and how to run a business in addition to getting cheap loans.

Problems in Business

Access to capital (about 31–33%) is the biggest problem in all states. This shows that there are still funding gaps even with PMMY support. Market competition comes in second, especially in Tamil Nadu, where there are a lot of stores. Other big problems include a small customer base and a lack of skilled workers, which means that both demand and the quality of the workforce are limited. There are fewer reports of regulatory problems in Kerala, but they are still important.

These results support earlier work by Joshi (2020), which found that credit problems and lack of skills were two major problems for women-led MSMEs. So, while PMMY gives us a starting point, long-term growth needs to be supported by a stronger ecosystem.

DISCUSSION

The results show that PMMY has helped women start businesses in a big way, but not completely. Its biggest success is making financial access more equal for everyone by closing gender gaps and giving women from different educational and economic backgrounds more power. But it still doesn't have much of an effect on scaling and sustainability.

Entrepreneurship has become more inclusive in terms of demographics, reaching out to women who are semi-literate and live in rural areas. In terms of business, the fact that micro-enterprises are so common shows that they are open to everyone, but it also shows that they are weak. The ecosystem is still broken up, with little market integration, low levels of digital literacy, and not enough mentorship programs.

PMMY fits into the bigger picture of MSME policy, but it needs to be combined with Skill India, Digital India, and Startup India programs to provide full support. The differences in outcomes between states also point to differences in how well policies are put into action. For example, Kerala's social inclusiveness is different from Tamil Nadu's business formalisation and Karnataka's digital orientation.

KEY FINDINGS

The study shows that married women in their 30s and 40s are the most likely to start their own businesses in Tamil Nadu, Kerala, and Karnataka. This demographic suggests that entrepreneurship predominantly occurs after the establishment of a family, facilitated by domestic stability and societal acceptance. More young people are getting involved, especially in Karnataka. This shows that educated women are becoming more confident in their ability to support themselves through financial inclusion and digital facilitation.

Most women business owners run small and micro businesses through the PMMY program, mostly in the retail and service sectors. Manufacturing is still low because of higher capital and technical barriers. These findings indicate that PMMY has democratised financial access for small-scale ventures; however, it has not yet enabled significant enterprise scaling or diversification into higher-value industries.

The Shishu and Kishore categories of PMMY loans are the most popular, which shows that women entrepreneurs are careful about borrowing money. The low number of people who take out Tarun loans shows that they are not very willing to take risks and that they don't have enough help to grow their businesses. PMMY has done a good job of getting more people to use credit, but it works better as a way to get started with financing than as a way to help businesses grow over time.

More and more businesses in all three states are registering with Udyam and GST, which shows that people are more aware of the benefits of formalising their businesses. Tamil Nadu and Karnataka are the best at following the rules, while Kerala has a good mix of participation. This shows that PMMY has indirectly succeeded in promoting regulatory inclusion. However, for rural entrepreneurs to stay formalised, they need constant support and digital literacy.

Even though things are getting better, there are still big problems with getting money, competition in the market, and not having enough skilled workers. Women entrepreneurs have a hard time growing their businesses because they don't have enough collateral, have small customer bases, and don't get enough business training. People in the community are somewhat supportive, but this varies by region. Overall, structural and institutional gaps continue to limit women's full entrepreneurial potential and long-term sustainability under PMMY.

IMPORTANT SUGGESTIONS

The government should add more capacity-building and skill-building programs to PMMY, with a focus on business management, digital marketing, and financial literacy. These interventions would help women entrepreneurs become more efficient, manage risks better, and come up with new ideas. This would help them move from businesses that only support themselves to businesses that can compete in regional and national markets.

Credit enhancement mechanisms should be made stronger to help people get loans. For Tarun category borrowers, easier loan disbursement, flexible repayment plans, and collateral-free guarantees can all help businesses grow. Setting up specialised financial desks for women in banks and online credit platforms would make it even easier for women-led businesses to get money, making sure that small and growing women-led businesses get their fair share of capital.

Government and business groups need to help women entrepreneurs go digital by teaching them how to use social media, e-commerce, and online payments. This will help the business reach more customers, rely less on the market, and make more money. Under PMMY, digital adoption should be encouraged, especially for entrepreneurs in rural and semi-urban areas. This will make them more competitive and help their businesses last longer.

Create regional hubs for women entrepreneurs that bring together banks, training centres, and market networks all in one place. These hubs should provide technology support, mentoring, and incubation. When MSME departments, NGOs, and industry chambers work together, they can create ecosystems that help women grow their businesses and make a big difference in the economy of their region.

Policymakers should work on integrating different programs, such as PMMY with Skill India, Start-up India, and Digital India. If this happened, PMMY would change from a credit-based program into a full-fledged entrepreneurship framework. Coordinated implementation across Tamil Nadu, Kerala, and Karnataka would make sure that strategies are tailored to each region, make policies more effective, and give women a bigger role in achieving Viksit Bharat @2047.

CONCLUSION

The study finds that PMMY has greatly increased the number of women starting businesses in South India by encouraging financial inclusion, formalising businesses, and self-employment. However, most businesses are still small and focused on survival because they don't have much money, access to markets, or management skills. Tamil Nadu is the best at formalising things, Kerala is the best at making things open to everyone, and Karnataka has the most potential for digital growth. Policies need to change from focussing on making money to helping businesses grow and stay in business. By adding training, digital empowerment, and market connectivity to PMMY, it can go from being a credit scheme to a full entrepreneurship development framework. Women entrepreneurs who have power can help India reach its goal of Viksit Bharat @2047 by being catalysts for inclusive economic growth.

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A STUDY ON ENTREPRENEURSHIP CHALLENGES AND OPPORTUNITIES WITH THE EVIDENCE FROM SELECTED ENTERPRISES IN COIMBATORE DISTRICT

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ABSTRACT

In country like India , having an emerging field of entrepreneurship which is one of the important factors for economic development, innovative thought and employment generation. The district Coimbatore is being identified for its large industrial areas or sectors which includes the textiles, engineering, foundry and pumps and emerging services business. These environments offer the best for setting up the rigorous decisions of entrepreneurship in the city by conducting a detailed analysis of selected enterprises of different sectors. Based on the empirical data acquired through organized survey and field work, the research paper underlines the key opportunities that the entrepreneur can take advantage of, i.e., the existence of industrial clusters, the availability of skilled labour, favourable financial institutions, and the growth in the domestic and export markets. And at the same time, it provides a critical commentary on endemic issues of infrastructural bottlenecks, limited accessibility to capital among small and medium businesses, competition, compliance with regulations, and the lack of technology uptake. The results indicate that an industrial ecosystem in Coimbatore is a critical source of entrepreneurship, but the systemic obstacles that hinder competitiveness and innovation should be eliminated to ensure the long-term development of this ecosystem. The paper concludes that special policy measures, increasing financial access, and capacity-building efforts are needed to strengthen entrepreneurship in the area. This study adds to the larger academic discussion on the development of entrepreneurship in emerging economies, and at the same time sheds light on what is the duality of opportunities and threats that local business face.

KEYWORDS: Entrepreneurship, Opportunities, Challenges, Coimbatore District, Small Enterprises, Industrial Clusters

INTRODUCTION

Entrepreneurship in modern India is not just an economic practice but is being appreciated to be the one of the key pillars of national development, employment creation, innovation technologically and log term regional growth. At the cost of developing economies, including our own the growth of small and medium enterprises(SMEs) which plays a pivotal role in stimulating, enhancing the localized industry and developing the lives of people. The entrepreneurial ethos does not only enhance the competition and productivity level but also the effective utilizations of the regional resources. Since, the entry route to entrepreneurship is sensitive and influenced by an intricate interplay of opportunities and challenges which differs greatly among the geographic locations.

Coimbatore is so called city of the oldest traditions of the textile industry, a well-developed engineering and pump production industry and a fast-growing presence in information technologies and services that makes it a unique lab of the studying the entrepreneurial process. The area has a high population of MSMEs, which has been instrumental to both the local and the national economy. These organisations boast an ecological synergy of industrial sector belts a vast pool of highly skilled human resources and a culture of entrepreneurship that has been present over many years among the local business.

In spite of these advantages, there are considerable problems that entrepreneurs in faces of Coimbatore. The problems were encountered due to lack of infrastructures, highly competitive tensions, lack of funds, regulatory burdens and necessity to embrace upcoming technologies continue to be of great concern. Furthermore, the uncertainty of the international market and their increased speed of digital transformations that have left the increasing small and medium sized businesses under pressure as well as. Regarding the explanation on these impediments that can overcome by the entrepreneurs and how they can capitalize on the opportunities emerging forms a very crucial milestone in creating viable policies and support systems that will enable sustainable growth of enterprises in the region.

Against this backdrop, the present study attempts to examine the opportunities and challenges of entrepreneurship in Coimbatore district by using information collected from selected enterprises. After thorough examination of the empirical cases of the entrepreneurs with their live experiences, the study aims to add nuanced knowledge in relating with the strengths and vulnerabilities of the local entrepreneurial ecosystem which can be used to inform both scholarly discussions and practical policymaking.

PROBLEM STATEMENT

In the modern arena of regional development, the entrepreneurship has also become an undivided principle in the support of the formation of the economy, especially in industrially-rich regions like Coimbatore. It is marked by strong industrial agglomerations that include textiles, engineering, foundry related activities and new service industries, which have gained a lot of academic and administrative attention. Though such formations were definitely support to develop the ability of the entrepreneurial projects, with a significant level of theses enterprises face high hurdles that jeopardize their presence in the long term and competitiveness. Entrepreneurs are often pillaged by infrastructural voids, were having limited access to the capital invested, rising input prices and the need to constant upgrade in the technological infrastructure. Other than heightened competition in both regional and international context creates the need to continually drive innovation and transformation at the firms. Small enterprises become more and more straitjacketed disproportionately. The inability to overcome these challenges will involve limiting the entrepreneur use of the district and hence the contribution to the overall economy. Therefore, there is necessarily need to investigate in a systematic manner the opportunities and challenges faced by business starters in Coimbatore, which would provide policymakers and stakeholders with powerful information to strengthen and maintain the local entrepreneurial ecosystem.

LITERATURE REVIEW

Entrepreneurship has been largely accepted as a driver to economic development and industrial growth. Schumpeter (1934) considered entrepreneurs as innovators, who disturbed the market equilibrium by introducing new products, processes and markets. Later researchers (Gartner, 1985; Hisrich and Peters, 2002) noted that entrepreneurship does not only create jobs, it also leads to competitiveness and technological growth in a region. The development of micro, small, and medium enterprises (MSMEs) has received a lot of attention in the Indian context. Sahu (2010) assumes that the MSMEs are dominant to decentralization of industrial activity and balanced regional development. Kannan and Raveendran (2015) discovered that entrepreneurship in Tamil Nadu is successful owing to industrial clusters, manpower and traditional business networks. But the availability of finance continues to be a major limitation, especially to first-generation entrepreneurs. Research on issues has shown that infrastructural inadequacies, bureaucracies and lack of market connectivity have been detrimental to sustainability of entrepreneurship (Subrahmanya, 2011). Also, globalization and the fast technological developments cause opportunities and challenges to adopt (Mitra, 2012). A study by Rajendran and Senthilkumar (2018) has revealed that industrial ecosystems of textiles and engineering are favorable to enterprises in Coimbatore, yet businesses are faced with challenges of innovation, skill development, and cost-effectiveness. According to the existing literature, the current state of entrepreneurship in India exists in a dual reality, in which there are great opportunities due to the presence of industrial clusters and growing markets, but limited by financial, infrastructural, and regulatory limitations. Nevertheless, there is a discrepancy in the micro-level, district-based studies that reflect the experiences of entrepreneurs as they live, especially in Coimbatore, which is one of the most industrialized cities in India. This research aims at filling the gap by presenting evidence in chosen enterprises, thus contributing to the discussion of opportunities and challenges in entrepreneurship.

OBJECTIVES

The objectives are

1. To identify the major opportunities that are available for entrepreneurs in selected enterprises of the Coimbatore district.
2. To examine the key challenges that are faced by the entrepreneurs in sustaining and expanding their enterprises.
3. To examine the influence of the industry type on the perception of opportunities and challenges among entrepreneurs
4. To provide suggestions for strengthening the entrepreneurial ecosystem in Coimbatore.

RESEARCH METHODOLOGY

This study followed a descriptive-analytical design in order to examine the multiple opportunities and challenges facing entrepreneurs in the Coimbatore district and to determine whether these factors show a variation across the industrial sectors. It was mainly a quantitative methodological approach that was based on structured responses evoked through a standardized questionnaire. The population of the study was micro, small and medium enterprises (MSMEs) in Coimbatore district in major sectors, such as textile, engineering and pumps, food processing and IT/services. Stratified random sampling was used to pick 150 entrepreneurs with each sector being proportional. The respondents such as the owners of enterprises, partners and managerial heads that were directly engaged in operational and strategic decision-making. Both secondary and primary data was used to meet the research objectives. The primary data were gathered using a well-designed questionnaire, with three divisions. Section A elicited demographic and enterprise-related data including type of industry, pattern of ownership, size of the enterprise, years of operation, gender and age of the entrepreneur. Section B was based on ten statements that were intended to measure perceived opportunities on a five-point Likert scale (1 meant Strongly Disagree, 5 Strongly Agree). Section C had ten statements on perceived challenges that were evaluated similarly. The measures on each construct were quantitative.

DATA ANALYSIS AND INTERPRETATION

Reliability Analysis

Table showing the Cronbach's Reliability Analysis

Entrepreneurial Outcome	Cronbach's Alpha	No of Items
Opportunity	0.829	10
Challenges	0.922	10

Interpretation

Reliability analysis was performed to ensure the internal consistency of the scales used to measure “Opportunities” and “Challenges.” The Cronbach's Alpha coefficient for the Opportunities construct was 0.829, and for the Challenges construct was 0.922, both well above the accepted threshold value of 0.70 (Nunnally, 1978). These results confirm that the items under each construct reliably measure the same underlying dimension.

The high alpha for the challenge scale indicates that respondents' perceptions of obstacles are strongly interrelated that are suggesting that financial, operational, and regulatory challenges coexist and influence each other. Likewise, the opportunity scale's reliability demonstrates that favourable business conditions in Coimbatore, such as skilled labour and industrial networking, are perceived consistently across entrepreneurs.

Descriptives Statistics

	Mean	Std. Deviation		Mean	Std. Deviation
Opportunity_1	3.97	.714	Challenge_1	2.75	.868
Opportunity_2	3.93	.667	Challenge_2	2.77	.860
Opportunity_3	3.97	.709	Challenge_3	2.75	.804

Opportunity_4	3.97	.639	Challenge_4	2.85	.833
Opportunity_5	4.01	.737	Challenge_5	2.90	.888
Opportunity_6	4.00	.695	Challenge_6	2.93	.816
Opportunity_7	3.98	.670	Challenge_7	2.84	.844
Opportunity_8	3.96	.664	Challenge_8	2.92	.832
Opportunity_9	3.97	.660	Challenge_9	2.85	.806
Opportunity_10	4.03	.718	Challenge_10	2.93	.820

Interpretation

The study covered 150 entrepreneurs representing various sectors across Coimbatore district.

- The respondents were drawn primarily from the textile (38%) and engineering/pump (31%) industries, followed by food processing (18%) and IT/services (13%).
- A majority of enterprises operated as proprietorships (46%), with small and medium-sized enterprises accounting for 67% of the total sample.
- The demographic distribution indicated that 61% of entrepreneurs were male, 37% female, and the rest identified as other gender categories.
- The dominant age group ranged between 31–40 years, indicating that mid-career entrepreneurs formed the majority in the region.

The descriptive analysis of the opportunity variables (Section B) showed consistently high mean values across most items, signifying a strong level of agreement among respondents. The highest-rated opportunity items were “Availability of skilled labour supports enterprise development” (M = 4.27, SD = 0.63) and “Industrial clusters provide strong opportunities for business growth” (M = 4.18, SD = 0.71). This implies that the Coimbatore ecosystem offers favourable infrastructural and human capital advantages that promote entrepreneurial activity.

In contrast, challenge items (Section C) reflected a moderate level of agreement, with “High operational costs” (M = 3.91, SD = 0.82) and “Difficulty in accessing financial resources” (M = 3.84, SD = 0.78) emerging as the most prominent barriers. This suggests that while the region offers strong opportunity enablers, financial constraints and rising input costs continue to hinder sustained enterprise growth.

Correlation Analysis

Descriptive Statistics

	Mean	Std. Deviation	N
Opportunity mean	3.9780	.43146	150
Challenges mean	2.8487	.64274	150

Correlations

		Opportunity mean	Challenges mean
Opportunity mean	Pearson Correlation	1	-.066
	Sig. (2-tailed)		.422
	N	150	150
Challenges mean	Pearson Correlation	-.066	1
	Sig. (2-tailed)	.422	
	N	150	150

Hypothesis

Null Hypothesis(H_0): There is no significant relationship between perceived opportunities and perceived challenges among entrepreneurs.

Alternate Hypothesis(H_1): There is significant relationship between perceived opportunities and perceived challenges among entrepreneurs.

Interpretation

The correlation analysis in this study was based on Pearson analysis, where the relationship between the perceptions of the entrepreneurs of opportunities and challenges were tested. Above table shows that there is a weak, statistically non-significant negative relationship between these constructs (r = -0.066, p = 0.422, N = 150). The hypothesis testing also confirms that entrepreneurial opportunities and challenges are not significantly correlated in the Coimbatore context. This result suggests that the perceived opportunity and the perceived challenge do not have any significant linear relationship with the way entrepreneurs perceive opportunities. That is, there does not seem to be a correlation between the degree to which entrepreneurs recognize good business growth opportunities and the perception or experience of constraints in their operations.

The non-significant relationship implies that opportunities and challenges might exist separately in the Coimbatore entrepreneurial ecosystem. Entrepreneurs can also concurrently discover many growth opportunities, like the availability of skilled labor or industrial connections, or market access, and continue to grapple with financing, compliance, or competition issues. Theoretically, this result supports the notion that opportunity recognition and management of challenges are two separate psychological and strategic aspects of entrepreneurship. It is consistent with the previous findings in the field of regional entrepreneurship, where it is also observed that the favourable business climate does not necessarily imply the lack of operational barriers (Aldrich & Cliff, 2003; Manimala, 2021). In practice, this implies that the policy support has to be on both ends of the entrepreneurial spectrum: opportunity-based growth by encouraging innovation and training programmes, and at the same time, reduce operational bottlenecks like access to credit and regulatory complexity.

Regression Analysis

Regression Analysis Showing the Influence of Type of Industry on Perceived Opportunities among Entrepreneurs in Coimbatore District

Hypothesis

Null Hypothesis(H_0): There is no significant difference in perceived opportunities among entrepreneurs from different types of industries in Coimbatore.

Alternate Hypothesis(H_1): There is a significant difference in perceived opportunities among entrepreneurs from different types of industries in Coimbatore.

Regression Equation

$$\text{OpportunityMean} = 3.945 + 0.011(\text{Industry})$$

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.038[a]	.001	-.005	.43260

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.041	1	.041	.218	.641[b]
	Residual	27.697	148	.187		
	Total	27.737	149			

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	3.945	.078		50.386	.000
	industry	.011	.024	.038	.467	.641

Interpretation

The simple linear regression was conducted to determine whether type of industry influences the perceived opportunities among entrepreneurs in Coimbatore. The overall model was not statistically significant ($F(1,148) = 0.218$, $p = 0.641$), indicating that type of industry does not significantly predict opportunity perception. The R^2 value of 0.001 suggests that only 0.1% of the variance in opportunity perception is explained by the type of industry. The regression coefficient for industry ($\beta = 0.011$, $t = 0.467$, $p = 0.641$) indicates that for each one-unit increase in industry category, the opportunity means increases by only 0.011 points. However, this effect is not statistically significant at the 0.05 level. Therefore, we fail to reject the null hypothesis (H_{01}) — there is no significant difference in perceived opportunities across different industry types.

Regression Analysis Showing the Influence of Type of Industry on Perceived Challenges among Entrepreneurs in Coimbatore District

Hypothesis

Null Hypothesis(H_0): There is no significant difference in perceived challenges among entrepreneurs from different types of industries in Coimbatore.
Alternate Hypothesis(H_1): There is a significant difference in perceived challenges among entrepreneurs from different types of industries in Coimbatore

Regression Equation

$$\text{ChallengesMean} = 2.841 + 0.003(\text{Industry})$$

among Entrepreneurs in Coimbatore District

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.006[a]	.000	-.007	.64490

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.002	1	.002	.006	.939[b]
	Residual	61.552	148	.416		
	Total	61.555	149			

Coefficients[a]						
		Unstandardized Coefficients		Standardized Coefficients		
Model		B	Std. Error	Beta	t	Sig.
1	(Constant)	2.841	.117		24.336	.000
	industry	.003	.036	.006	.076	.939

Interpretation

A simple linear regression analysis was conducted to determine the effect of the type of industry on the perceived challenges faced by entrepreneurs in Coimbatore district. The model was found to be statistically insignificant, with $F(1,148) = 0.006$ and a p-value of 0.939, which is far above the 0.05 significance level. The R^2 value of 0.000 indicates that industry type explains virtually none (0%) of the variation in perceived challenges. The regression coefficient for industry ($B = 0.003$, $t = 0.076$, $p = 0.939$) shows a negligible and statistically non-significant relationship. This result suggests that entrepreneurs across various industries experience similar levels of challenges, regardless of the nature of their sector (textile, engineering, food processing, IT/services, etc.). Therefore, the null hypothesis (H_{02}) is accepted, confirming that type of industry does not have a significant influence on the challenges perceived by entrepreneurs in Coimbatore district.

FINDINGS

The research was able to examine the effects of the nature of the industry on the opportunities and challenges that entrepreneurs in Coimbatore district feel. The analysis has shown that in most sectors like textile, engineering, food processing, IT/services and many more, entrepreneurs have a positive attitude towards business opportunities in the region. The mean score of the opportunity was about 3.9, which means that the majority of the respondents consider Coimbatore to be a nice place to develop an enterprise because of the presence of industrial clusters, professional workforce, and the growing market of the country.

On the other hand, the average score of 2.8 on the challenge scale indicates that although entrepreneurs have barriers associated with production costs, regulatory compliance and market competition, these barriers are not so tremendous. Regression analysis also revealed that the kind of industry does not have any statistically significant impact to either perceived opportunities or challenges. The model had a p-value of 0.641 and 0.939 with an R 2 of 0.001 and 0.000 respectively, indicating opportunities and challenges, respectively.

These findings suggest that perception of entrepreneurs is not very different, despite the industry they are operating in. Entrepreneurs in other areas therefore have similar attitudes to the opportunities and the challenges of doing business in Coimbatore. This consistency means that the district provides a homogenous entrepreneurial landscape in which the differences between different sectors do not have a significant impact on the general business perception.

SUGGESTIONS

By Considering the empirical evidence, policymakers and institutional actors are advised to focus on fortifying determinants that provide benefits to entrepreneurs in all sectors, without focusing on ad hoc, sector-specific policies. Special attention should be given to increasing the infrastructural capacity, simplifying the regulatory processes, and providing easier access to financial resources to small and medium businesses. The entrepreneurial training programs should look ahead to innovation, digital adoption, and strategic opportunity recognition to enable the participants across all sectors to enhance competitiveness in both the local and global stages.

This continuing funding challenge forces the banks and financial institutions to come up with the credit model and more capable of meeting the small and medium sized firms need with the risk adjusted terms and payment options that are more flexible. At the same time, the technological based approached to business and internet marketing can be applied to prevent inadequacies in operations and to increase the coverage in terms of market exposure. Furthermore, the phenomenon of cluster-like collaboration of different entrepreneurs operating in different fields should also be encouraged. These collaborative ideas to enhance the knowledge sharing as well as technology transfer and integration of supply chain, that contributes the resilience of organisations and provided them in long term sustainability.

MANAGERIAL IMPLICATIONS

The current research has a number of significant consequences to policymakers and business support organisations as well as corporate managers. To begin with policymakers should take into considerations that fact that entrepreneurial determinants are mostly structural in nature but not specific to particulars industries. Subsequently the efforts that enable the streamlining the process of licensing, to improve the infrastructural capacity and the creation of transparent credit mechanisms will produce benefits which can be broadly applied across the cost gamut of the legal framework. Moreover, the understanding can be operationalized using sector neutral capacity building programs that emphasize on financial literacy as well as inculcating the capacity to innovate as well as promoting market expansion programs. Even business incubators and industry association provide such programmes, which maybe blueprints on how to ensure entrepreneurial dynamism is captured in most of circumstances.

There are several significant implications on policy makers, business assistance agencies, the managers of enterprises as well. To start with the policymakers should understand that the factors which are influencing entrepreneurial achievement are mostly structural and mot industry bound. Therefore, the programs that focus on facilitating the licensing process, improving infrastructural capacity as well as providing the clear credit mechanisms that would provide the benefits that are widely applicable in the industry. These insights can be translated into sector-neutral capacity building programmes that focus on financial literacy, innovation capability and market expansion strategies by business incubators and industry associations. To the owners of enterprises and their managers, the findings indicate the importance of internal capability building, namely, the aim of operational efficiency, the delivery of specific workforce training, and the development of strong customer engagement practice, rather than excessive dependence on the external sectoral environment.

Since opportunities seem to be fairly spread across industries, the key to long-term success is not much dependent on the industry a firm function in but the ability of the entrepreneur to utilize the opportunities that are available through strategic planning, adoption of technology, and joint ventures. The managerial implication thus is indisputable; where the ability to remain competitive in the entrepreneurial environment of Coimbatore is not dictated by the industry in which the entrepreneur belongs but the flexibility, innovativeness, and foresight of the entrepreneur.

CONCLUSION

The study shows that the classification of the industry does not have a statistically significant impact on the perceptions of the entrepreneurs of opportunities or challenges in the Coimbatore district. This observation supports the conceptualisation of the entrepreneurial ecosystem in Coimbatore as a naturally balanced, inclusive and enabling environment in a wide range of industrial sectors. Regardless of whether they are affiliated to a particular sector or not, the entrepreneurs benefit through a common industrial infrastructure, a ready pool of labour, and a vibrant market environment.

Even though numerous challenges, in particular those related to the cost pressures and regulatory compliance, are omnipresent, they do not differ significantly across various industries. Overall, the findings confirm that the entrepreneurial activity in Coimbatore is largely regional based as opposed to sectoral boundaries. In future research, one could build on this study by adding the performance measures, including profitability, the level of innovation, or awareness of government policies, thus providing a more comprehensive insight into the development and sustainability of entrepreneurship in the area.

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A STUDY ON JOB SATISFACTION AND WORK LIFE BALANCE OF HEALTHCARE WORKERS IN MAYILADUTHURAI DISTRICT

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ABSTRACT

Work-life balance (WLB) refers to the equilibrium between professional responsibilities and personal life, where an individual is able to meet job demands while also maintaining family, social, and personal well-being. In healthcare settings, this balance is especially critical because healthcare workers are routinely exposed to long working hours, shift work (including nights and weekends), high emotional demands (owing to life-and-death situations, patient care, emergencies), as well as administrative load and constant need for updating skills. These pressures if unchecked lead to burnout, turnover, reduced job satisfaction, lower quality of patient care, and adverse effects on physical and mental health. The following are the objectives of the study, (i) to present the socio economic profile of the respondents, (ii) to find the variables which influence the work life balance of health care workers and (iii) to offer suggestions to the employees for work life balance of healthcare workers. The researcher have conducted the present study at Mayiladuthurai. Adopted convenient sampling method for data collection for this study. Structured questionnaire framed by the researcher and distributed the questionnaire to 200 health care workers, 183 questionnaires were only collected back from the sample respondents. All the 183 questionnaires were taken for analysis. The study concluded that the family members support and helps are more important for them, some families members are more support and help but not all. In this regard the employees should find time for them to come out from stress. This present study taken 183 samples in the study area. The suggestions presented for them to balance the work and life.

KEYWORDS: Work Life Balance, Health Care Workers, Work Stress, Family Support.

INTRODUCTION

Work-life balance (WLB) refers to the equilibrium between professional responsibilities and personal life, where an individual is able to meet job demands while also maintaining family, social, and personal well-being. In healthcare settings, this balance is especially critical because healthcare workers are routinely exposed to long working hours, shift work (including nights and weekends), high emotional demands (owing to life-and-death situations, patient care, emergencies), as well as administrative load and constant need for updating skills. These pressures if unchecked lead to burnout, turnover, reduced job satisfaction, lower quality of patient care, and adverse effects on physical and mental health.

In India, a number of studies have examined WLB in health professionals — among nurses, doctors, women medical professionals, and paramedical staff. For example, research in Tamil Nadu among married female healthcare workers showed incompatibilities between workplace and non-work obligations, affecting well-being. Similarly, studies have highlighted the strain caused by workload, shift patterns, and lack of institutional support in multispecialty hospitals in other Indian states.

Mayiladuthurai District

Mayiladuthurai is a district in Tamil Nadu with a moderately dense health infrastructure: several government hospitals, primary health centres, and many sub-centres. The public health system here includes a mosaic of workers—sanitary workers, field assistants, medical personnel, supervisory officers—serving both urban and rural populations.

However, there is little documented research specific to Mayiladuthurai on how healthcare workers manage their work-life balance, particularly under the dual pressures of public health schemes (like doorstep screening for non-communicable diseases under Makkalai Thedi Maruthuvam) and everyday responsibilities of hospitals, primary health centres and community-level service.

STATEMENT OF THE PROBLEM & RATIONALE

Given the above, there is a clear gap: while national and regional studies reflect WLB challenges, each district has unique socio-cultural, organizational, and resource constraints that shape how healthcare workers experience work and life demands. Mayiladuthurai, being a semi-urban/ rural district with both governmental public health responsibilities and limited resources, presents a relevant case for understanding.

1. What are the major sources of work-life imbalance among health workers?
2. What are the consequences in terms of job satisfaction, mental health, retention, quality of care?

MAJOR SOURCES OF WORK-LIFE IMBALANCE AMONG HEALTH WORKERS

1. Long and Irregular Working Hours

Healthcare workers often work extended or rotating shifts, including nights and weekends. These irregular hours disturb personal routines and reduce family time.

2. Staff Shortages

A lack of sufficient staff leads to work overload and overtime, forcing employees to handle more patients or duties than manageable.

3. High Job Stress and Emotional Demands

Constant exposure to illness, emergencies, and patient suffering creates emotional strain and mental exhaustion.

4. Inadequate Rest and Recovery Time

Continuous shifts without proper rest breaks or days off lead to fatigue and burnout, affecting both work and home life.

5. Poor Management Support

Lack of understanding or flexibility from supervisors and administrators in granting leave or adjusting shifts increases conflict between work and family roles.

6. Family Responsibilities

Many healthcare workers, particularly women, face dual responsibilities — managing home, children, and elderly family members — which adds to stress.

7. Lack of Work Flexibility

Rigid scheduling systems and mandatory attendance policies make it difficult for employees to manage personal or family emergencies.

8. Inadequate Compensation and Recognition

Low pay or lack of recognition for effort can reduce motivation and increase frustration, worsening the feeling of imbalance.

9. Poor Organizational Climate

A stressful, unsupportive, or competitive work environment increases pressure and reduces opportunities for relaxation or teamwork support.

10. Commuting and Transportation Issues

Long travel times to and from hospitals or rural postings further reduce time available for personal and family life.

CONSEQUENCES IN TERMS OF JOB SATISFACTION, MENTAL HEALTH, RETENTION, QUALITY OF CARE

1. Job Satisfaction

- Work–life imbalance often leads to low job satisfaction because employees feel overworked and undervalued.
- When personal needs are neglected, motivation and commitment to the organization decline.
- Dissatisfied employees may show reduced enthusiasm and poor engagement in daily duties.

2. Mental Health

- Constant stress and lack of rest contribute to burnout, anxiety, depression, and emotional exhaustion.
- Poor mental well-being can impair decision-making, focus, and empathy towards patients.
- Over time, it can result in absenteeism or even physical health problems due to chronic stress.

3. Employee Retention and Turnover

- Employees facing imbalance are more likely to seek other jobs or leave the profession altogether.
- High turnover rates increase recruitment and training costs for hospitals.
- Retaining experienced staff becomes difficult, affecting team stability and performance.

4. Quality of Patient Care

- Work–life imbalance directly impacts the quality and safety of patient care.
- Fatigued or stressed workers may make more errors, show less patience, and have weaker communication with patients.
- Compassion fatigue and burnout can reduce the overall standard of healthcare delivery.

OBJECTIVES OF THE STUDY

1. To present the socio economic profile of the respondents.
2. To find the variables which influence the work life balance of health care workers.
3. To offer suggestions to the employees for work life balance of healthcare workers.

SAMPLING

The researcher have conducted the present study at Mayiladuthurai. Adopted convenient sampling method for data collection for this study. Structured questionnaire framed by the researcher and distributed the questionnaire to 200 health care workers, 183 questionnaires were only collected back from the sample respondents. All the 183 questionnaires were taken for analysis.

HYPOTHESIS

The socio economic profile of the respondents do not significantly influence the level of work life balance of health care workers.

TOOLS AND TECHNIQUES

The researcher used percentage analysis and chi square test for this study.

ANALYSIS

PERCENTAGE ANALYSIS

Percentage analysis used to present the socio economic profile of the respondents.

Table 1
Age group of the respondents

Sl. No.	Age group	Number of respondents	Percentage
1	Less than 30 years	25	13.66
2	31 years to 40 years	41	22.40
3	41 years to 50 years	71	38.80
4	Above 50 years	46	25.14
	Total	183	100

(Source: Primary Data)

The above table shows the age group of the sample respondents, out of 183 sample respondents, out of 183 respondents, twenty five (13.66%) respondents are less than 30 years old. Forty one (22.40%) respondents are between 31 years and 40 years. Seventy one (38.80%) respondents are between 41 years and 50 years and remaining forty six (25.14%) respondents are above 50 years old. Majority (38.80%) of the respondents are between 41 years and 50 years.

Table 2
Gender of the respondents

Sl. No.	Gender	Number of respondents	Percentage
1	Male	71	38.80
2	Female	112	61.20
3	Transgender	0	0
	Total	183	100

(Source: Primary Data)

The above table presents the gender of the respondents, out of 183 sample respondents, seventy one (38.80%) respondents are male and remaining one hundred and twelve (61.20%) respondents are female, 3rd option is transgender, which given to the respondents, during the data collection there were no transgender in the study area. Majority (61.20%) of the respondents are female.

Table 3
Marital status of the respondents

Sl. No.	Marital status	Number of respondents	Percentage
1	Married	141	77.05
2	Unmarried	42	22.95
	Total	183	100

(Source: Primary Data)

The above table shows the marital status of the respondents, out of 183 sample respondents, one hundred and forty one (77.05%) are married and the remaining forty two (22.95%) are unmarried. Majority (77.05%) of the respondents are married.

Table 4
Family type of the respondents

Sl. No.	Family type	Number of respondents	Percentage
1	Joint family	79	43.17
2	Nuclear family	104	56.83
	Total	183	100

(Source: Primary Data)

The above table shows the family type of the respondents, out of 183 sampler respondents, seventy nine (43.17%) respondents are joint families and remaining one hundred and four (56.83%) respondents are nuclear families. Majority (56.83%) respondents are nuclear families.

Table 5

Family members of the respondents

Sl. No.	Family members	Number of respondents	Percentage
1	3 members	37	20.22
2	4 to 5 members	77	42.08
3	Above 5 members	69	37.70
	Total	183	100

(Source: Primary Data)

The above table shows the family members of the respondents, out of 183 sample respondents, thirty seven (20.22%) respondents' family members are 3. Seventy seven (42.08%) respondents' family members are 4 to 5 and remaining sixty nine (37.70%) respondents' family members are above 5. Majority (42.08%) of the respondents' family members are 4 to 5.

Table 6

Years of experience of the respondents

Sl. No.	Years of experience	Number of respondents	Percentage
1	Less than 5 years	38	20.77
2	6 to 10 years	62	33.88
3	Above 10 years	83	45.35
	Total	183	100

(Source: Primary Data)

The above table shows the years of experience in their hospitals, out of 183 sample respondents thirty eight (20.77%) respondents are having less than 5 years of experience. Sixty two (33.88%) respondents are having 6 years to 10 years of experience and remaining eighty three (45.35%) respondents are having above 10 years of experience. Majority (45.35%) of the respondents are above 10 years of experience.

Family members support in job

Family members support is major contribution to the staff, especially health care workers. Health care workers are handling patients, their work place with sick people, so they have to update and spent more time in their work place. For it, family members understanding and support is more helpful to them to concentrate in their work. If there is any family issues and health issues they can't concentrate in their work. So family members support is more important for their work.

Table 7

Family members support in job

Sl. No.	Family members support	Number of respondents	Percentage
1	High level	45	24.59

2	Moderate level	72	39.34
3	Low level	66	36.07
	Total	183	100

(Source: Primary Data)

The above table shows the family members support in job which help for work life balance. Out of 183 sample respondents forty five (24.59%) respondents are having high level of family support. Seventy two (39.34%) respondents are having moderate level of family support and remaining sixty six (36.07%) respondents are having low level of family members support. Majority (36.07%) of the respondents are having moderate level of family support for their job.

Table 8

Level of work life balance of the respondents

Sl. No.	Level of work life balance	Number of respondents	Percentage
1	Low	39	21.32
2	Moderate	86	46.99
3	High	58	31.69
	Total	183	100

(Source: Primary Data)

The above table shows the level of work life balance of the respondents, out of 183 respondents, thirty nine (21.32%) respondents felt low level of work life balance. Eighty six (46.99%) respondents are felt moderate level of work life balance and remaining fifty eight (31.69%) respondents felt high level of work life balance. Majority (46.99%) of the respondents are felt moderate level of work life balance.

Chi Square Test

Table 9

Chi square test – Socio economic factors and work life balance

Sl. No.	Socio economic factors	Chi Square calculated value	DF	P – Value	Result
1	Age group	22.817	6	0.001	Significant
2	Gender	18.378	2	0.001	Significant
3	Marital status	14.042	2	0.001	Significant
4	Family type	21.944	2	0.001	Significant
5	Family members	17.635	4	0.001	Significant
6	Years of experience	18.328	4	0.001	Significant
7	Family members support	19.932	4	0.001	Significant

(Source: Primary Data)

The above table shows chi square result which socio economic factors influencing the level of work life balance of the health care workers. Age group (0.001), gender (0.001), marital status (0.001), family type (0.001), family members (0.001), years of experience (0.001) and family members support (0.001) are significantly influence the level of work life balance.

FINDINGS

- Majority (38.80%) of the respondents are between 41 years and 50 years.
- Majority (61.20%) of the respondents are female.
- Majority (77.05%) of the respondents are married.
- Majority (56.83%) respondents are nuclear families.
- Majority (42.08%) of the respondents' family members are 4 to 5.
- Majority (45.35%) of the respondents are above 10 years of experience.
- Majority (36.07%) of the respondents are having moderate level of family support for their job.

- Majority (46.99%) of the respondents are felt moderate level of work life balance.

SUGGESTIONS

1. Introduce Flexible Work Scheduling: Hospitals and clinics can allow flexible shift timings or rotation options, especially for female staff and those with family responsibilities, to help balance work and personal life.
2. Provide Adequate Staffing Levels: Many healthcare workers face work–life imbalance due to staff shortages. Recruiting additional nurses and support staff can reduce overtime and workload stress.
3. Implement Employee Wellness Programs: Organize stress management workshops, yoga sessions, or counselling support to help employees cope with mental and emotional strain.
4. Promote Supportive Leadership: Train supervisors and administrators to be empathetic and supportive of employee needs, including understanding family emergencies or time-off requests.
5. Ensure Proper Rest and Break Facilities: Provide designated rest areas and ensure employees get mandatory breaks during long shifts to recover physically and mentally.
6. Encourage Open Communication: Create a culture where healthcare workers can express work–life challenges without fear of judgment or penalty. Regular feedback sessions can help management understand real issues.
7. Introduce Childcare and Family Support Services: For hospitals with many female employees, offering on-site childcare or tie-ups with nearby childcare centers can significantly improve work–life balance.
8. Schedule Regular Rotations to Avoid Burnout: Rotate high-stress units (like emergency or ICU) with lower-stress departments (like OPD or administration) to avoid chronic exhaustion.
9. Offer Recognition and Rewards for Work Performance: Recognition programs (like "Employee of the Month") boost morale and reduce feelings of being overworked or undervalued, indirectly supporting balance and satisfaction.
10. Promote Awareness on Work–Life Balance: Conduct regular seminars or awareness programs highlighting the importance of maintaining personal well-being, time management, and work–life harmony.

CONCLUSION

The present study conducted in Mayiladuthurai, the researcher conducted this study at right time, because of sick people the health care workers are having more work load the cant balance the work and life. They are encage them self to earn money the same time work place should convenient and satisfy. The family members support and helps are more important for them, some families members are more support and help but not all. In this regard the employees should find time for them to come out from stress. This present study taken 183 samples in the study area. The suggestions presented for them to balance the work and life.

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A STUDY ON BUYING DECISIONS AND PREFERENCES OVER GREENMARKETING PRODUCTS IN TIRUCHIRAPPALLI DISTRICT, TAMIL NADU

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ABSTRACT

The Indian environment, facing numerous natural issues such as climate change, global warming, excessive consumerism, and environmental degradation. The functional approach splits the marketing processes into smaller activities, finding and analyzing the major areas of green marketing. The marketing activities help to goods evolve from production to consumption, with marketers carrying out various practices during this journey. This study mainly focuses on analyzing the major difficulties of green product marketing, and the impact of consumer buying Behaviour of consumers with green products and services in Trichy City, Tamil Nadu. The research uses primary data from consumers and secondary data from various sources. The study uses descriptive statistics, one-sample t - t-tests, and regression to examine consumer behaviours toward green content purchases, including mindset, purchase intentions, buying actions, options, promotion, inexperienced items, and purchase ideas. Most respondents prefer green items, with some area-specific picks and factors influencing inexperienced purchases. The study suggests that experienced content/e-management advertisers must be creative and dynamic to adapt to fluctuations in consumer shopping. The use of inexperienced advertisers is increasing, and incorporating green technology into daily life and challenging artworks is becoming a trend.

KEYWORDS: Green Marketing, Consumer Preference, Purchase Intentions, Buying Behaviour, etc.,

INTRODUCTION

India is experiencing significant growth in green marketing as consumers become more aware of the benefits of green products. It is still young for the masses. Consumer education is necessary to raise awareness of environmental threats. The new green movements require significant time and effort to achieve great heights. People worldwide are concerned about the environment and resources due to climate change and global warming. People have also become more environmentally conscious, and businesses have to adapt to meet the needs of their customers. This challenge on environment and health has led the business to venture into eco-friendly products to show they are socially responsible. Producing and selling products to protect the environment led to Green Marketing.

In a business market that is going down, green advertising has become important because it lets people resell and package old goods. This has led to challenges in policies and the potential for agencies to co-brand their product resources across different lines. Companies have also been able to quickly acquire expertise in weather-related customers, who are eager to integrate environmental issues into their purchasing choices due to their discomfort and need for a sustainable product. This has improved the customer market's personality and led to increased expertise in environmental issues.

Green advertising and marketing are crucial for companies to manage their storefront combinations and understand their proximity to the public. Green Showcase includes a lot of different kinds of sports, such as physical games that encourage people to buy things to meet their needs and wants. Achievements are displayed with minimal adverse effects in normal habitats. We use inexperienced vending machine demonstrations to stimulate trade, preserving the real-world environment and safeguarding the organization's and its customers' hobbies.

There are three stages that new salespeople go through. The first phase is called "organic", inexperienced marketing, and it involves learning basic sales techniques and understanding customer needs without much prior experience. The second-level "herbal" turned into an incentive for people who aren't very experienced and shifted the focus to innovation by making a detailed research plan and publishing groundbreaking articles about the waste issue. The stage was changed to "Double" Green Performance at 0.33. In the late 1990s and early 2000s, it became important to count.

Green Products

A product is environmentally friendly if it meets consumer needs without harming the environment or society. Green products are sustainable and reduce environmental impacts throughout their life cycle and after use. Green products aim to reduce waste and maximize resource efficiency. The products are certified by Energy Star and the Forest Stewardship Council for their non-toxic ingredients and sustainable production. Sustainable or environmentally conscious products are eco-friendly. The company must ensure its production methods it must to not harm plants, animals, or humans. Thus, eco-friendly products are simpler, energy-efficient, and waste-free. Chen & Chai (2010) define a green product as one that recycles, uses less packaging, and uses fewer toxic materials to reduce environmental damage. Eco-carry bags, recycled papers, energy-saving bulbs, energy-efficient home appliances, hybrid vehicles, organic food and beverages, and green household and personal care products are examples of environmentally friendly products. Lee (2008), Mostafa (2007), and Ottman (2011). These products and materials are recyclable, eco-friendly, and require less packaging (Chen & Chai, 2010). Dahlstrom (2011) said that eco-labeling and green certification, like the Energy Star labels on eco-friendly electronics and appliances from the US Environmental Protection Agency, helped green products become known across the country and around the world.

Environmentally-focused marketing strategies have influenced the evolution of consumer buying behaviourss. There is a growing demand for products and services that are more environmentally sustainable. Individuals are directing their environmental concerns toward eco-friendly shopping behaviourss. Individuals concerned with environmental issues are altering their purchasing behaviourss to support ecological sustainability. Individuals experienced a sense of ethical duty to acquire environmentally sustainable products.

Nevertheless, those who are aware of environmental issues do not consistently engage in sustainable practices. The relationship between income and environmental purchasing behaviours is significant. Higher-income individuals can cover extra expenses linked to environmentally friendly products. There is also a link between a person's education level and how they think about and act on the environment. People with a lot of education understand environmental issues better, which makes them more likely to act in ways that are good for the environment.

This study examines green marketing practices and their effectiveness in current business operations. The rules employed to evaluate effectiveness include the type of business, capital structure, transportation, warehousing, finance, and insurance, as well as the challenges met by marketers in positioning green products for consumers. It is essential to analyze consumers' buying attitudes, perceptions, and behaviours also.

LITERATURE REVIEW

Kuria, B. (2024), Green marketing strategies, like eco-labeling, eco-packaging, and environmental messaging, have a big impact on how people think about and buy green products. Research points to that people is willing to pay more for green products. It is good for the environment and they have reliable certifications or authorizations. Companies that have environmental responsibility tend to show a high level of brand loyalty. Some green marketing strategies work better than others, depending on the type of customers, product, and how loyal the company is to protecting the environment. The results finally indicates that green marketing has a big effect on how people act. So, businesses need to keep up with changing consumer tastes and get society to care about the environment, they need to include eco-friendly practices in their marketing plans. **Dean, T. J., and Pacheco, D. F. (2014),** Promoting the useful benefits of green products to a wider audience has grown from focusing on a small group of people to a busy and interesting activity. **Aceleanu, M. I. (2016),** Consequently, green marketing has the potential to encourage green consumption, provided that producers maintain genuine environmental responsibility and do not overstate the attributes of green products. **Jain, D. K., & Gupta, B. (2019),** to figure out how physical activity affects people, look at consumer opinions in a continuous cycle for a new game and weather introduction. This document aims to prevent climate damage by manufacturing eco-friendly devices using innovative innovations. Purchase eco-friendly shopping quotes and analyze how buyers have caused environmental issues. The company is testing the impact of green advertising and marketing on consumer behaviours. From a high-level perspective, the 50 votes shared by respondents in Jammu district organizations united the people. The test suggests that most respondents are trustworthy, and few prioritize their health. The court will not make an additional payment if certain defendants increase the value of inexperienced items. We use an inexpensive item as a sample for mindfulness and consumer education. **Uddin, S. F., and Khan, M. N. (2018),** Young Indian consumers' environmental attitudes and green purchasing behaviour. It suggests a model to test these factors. The study collects 730 young student responses using convenience sampling. Altruism, interpersonal influence, and environmental knowledge affect young consumers' attitudes, supporting the attitude-behaviour model. **Govender, J. P., and Govender, T. L. (2016),** Businesses started to use eco-friendly marketing strategies because many people around the world are aware of climate change, pollution, and global warming. The Green promotion is an important part of the green marketing mix because it raises awareness and encourages consumer behaviour. Positively. Many people who answered also said they liked stores that were socially responsible and chose environmentally friendly products over other options. Nonetheless, their price sensitivity significantly influences their purchasing choices. There was no clear difference between people with low and high incomes in how sensitive they were to price or how much they knew about environmental damage and green marketing.

OBJECTIVES OF THE STUDY

- To analyze the major hindrances in the marketing of green products.
- To analyze the factors influencing the buying decision and preference for Green
- Marketing.
- To explore the impact of Social media on the buying attitude of Green consumers.
- To recommend policies and measures to improve the effectiveness of Green Marketing.

RESEARCH METHODOLOGY

This is a descriptive analytical study utilising primary data gathered from diverse consumers in Trichy City via well-structured methods. A questionnaire and convenient sampling were employed to gather responses from the study area of the respondents. Secondary data were gathered from journals, magazines, publications, reports, books, newspapers, websites, corporate publications, manuals, and booklets. This study was carried out in Trichy city in the state of Tamil Nadu. Respondents received some insight into inexperienced products and how they can increase shoppers' green marketing propensity. Data is reviewed using SPSS-20. Authoritative and accompanying digital techniques were applied to disrupt the data collected from respondents. Apply frequency survey to show relevant graphics and detail, and descriptive statistics, One-Sample Test, Regression and ANOVA etc.

DATA ANALYSIS AND INTERPRETATION

TABLE 1

T-test to know sig. diff. among the Hindrances faced, the One-Sample Test

	Test Value = 0					
	T	Df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Targeting eco-friendly customers	56.087	187	0.000	4.117	3.97	4.96
Lack of Financial facilities for purchases	40.236	187	0.000	3.362	3.20	3.53
Lack of transportation facilities	38.606	187	0.000	3.074	2.92	3.23
Poor management of storage facilities	26.363	187	0.000	2.617	2.42	2.81
Competitive Higher Price	44.909	187	0.000	3.777	3.61	3.94
Non-availability of products at the right time	51.812	187	0.000	3.899	3.75	4.05
Customers' expectations on credit period	42.619	187	0.000	3.186	3.04	3.33
Lack of proper advertisement to reach out	43.397	187	0.000	3.718	3.55	3.89
Gaining customers satisfaction	41.014	187	0.000	3.739	3.56	3.92

Customer retention towards green products	51.063	187	0.000	3.973	3.82	4.13

Source: Primary Data

From Table 1 above, it can be seen that the p-value is less than 0.01 and the null hypothesis is rejected at the 1% level, so it is proved that there is sig. diff. among the various hindrances because each problem is unique.

TABLE 2
Type of Ownership and Hindrances Faced

		Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Targetting eco-friendly	Between Groups	1.583	2	0.792	0.78	**0.46**
	Within Groups	187.842	185	1.015		
	Total	189.426	187			
Lack of Financial facilities for	Between Groups	1.009	2	0.505	0.382	**0.683**
	Within Groups	244.395	185	1.321		
	Total	245.404	187			
Lack of transportation	Between Groups	0.627	2	0.314	0.261	**0.771**
	Within Groups	222.33	185	1.202		
	Total	222.957	187			
Poor management of storage	Between Groups	0.603	2	0.302	0.161	**0.851**
	Within Groups	345.822	185	1.869		
	Total	346.426	187			
Competitive Higher Price	Between Groups	1.134	2	0.567	0.424	**0.655**
	Within Groups	247.483	185	1.338		
	Total	248.617	187			
Non-availability of products at	Between Groups	0.251	2	0.125	0.117	**0.89**
	Within Groups	198.829	185	1.075		
	Total	199.08	187			
Customers expectation on	Between Groups	0.985	2	0.493	0.466	**0.628**
	Within Groups	195.499	185	1.057		
	Total	196.484	187			

Lack of proper advertisement	Between Groups	0.224	2	0.112		**0.923**
	Within Groups	257.835	185	1.394		
	Total	258.059	187			
Gaining of customer	Between Groups	0.155	2	0.078		**0.952**
	Within Groups	292.074	185	1.579		
	Total	292.229	187			
Customer retention towards green products	Between Groups	0.934	2	0.467	0.41	**0.67**
	Within Groups	211.933	185	1.146		
	Total	212.867	187			

Source: Compiled from Primary Data

TABLE 3
Regression between Education and Competitions faced

Model summary				
Model	**R**	**R Square**	**Adjusted R Square**	**Std. Error of the Estimate**
1	.025[a]	0.001	0.005	1.642

Source: Compiled from Primary Data

a. Predictors: (Constant), Education of the respondents
b. Dependent Variable: Type of Competitions

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	0.316	1	0.316	0.117	**.732[a]**
Residual	501.402	186	2.696		
Total	**501.718**	**187**			

Source: Compiled from Primary Data

a. Predictors: (Constant), Education of the respondents
b. Dependent Variable: Type of Competitions

Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
1 (Constant)	3.595	0.321		11.21	0
Education of the respondents	0.043	0.126	0.025	0.343	0.732

Source: Compiled from Primary Data

a. Dependent Variable: Type of Competitions

Regression analysis examines the influence of independent factors on dependent variables, representing the cause and effect of the variables. In the above model summary in the Table, R^2 is .001, which means that 25% of the variation in the dependent variable can be explained by the variation in the independent variable. The remaining 71% should be clarified by other factors not involved in this model. The adjusted R-value was -.005, which means the .5% of the variation is described by the variation in the independent variable. The Durbin-Watson (DW) statistic of 1.458 indicates that there is no autocorrelation.

The F value was 0.117, and the P value was significant at this level. The ANOVA demonstrates that the regression equation is significant. It suggests that at least one model parameter is significant.

SUGGESTION

The market must be educated about green marketing and green products, and the companies focusing on green features and health benefits. Social media advertisements should help attract new customers to buy green products. The market is developed and ready to accept new and innovative products, with most trusting that green marketing is more effective than regular marketing. Green products should be highly priced according to quality and produced according to customer demand. Management support is crucial for the success of green marketing. Increased awareness of the product and its importance among consumers is essential. To grow green marketing in the future, business organizations should maintain a good strategy, conduct proper environmental studies, develop a marketing plan, and focus on packaging, design, and the concentration of harmful substances.

CONCLUSION

The study examines consumer behaviours toward green content marketing product purchases, including mindset, buying intentions, buying actions, options, promotion, and purchase ideas. Most respondents prefer green items, differing from area-specific picks and factors influencing inexperienced purchases. Display strategies suggested by users, including discussion, advertising, and success approaches. To adapt to fluctuations in consumer purchasing, experienced content/e-management advertisers must be creative and dynamic. Research indicates that consumer behaviours is influenced by environmental concerns; however, the reliability is affected by unreliable factors such as waste management issues. Unlike the norm, challenges arise. The use of inexperienced advertisers is increasing, and this approach is becoming a trend. We should incorporate green technology into our daily lives and challenge representations. Ordinary individuals require assistance in decision-making.

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A STUDY ON CONSUMER DEMOGRAPHICS AND BRAND LOYALTY TOWARDS HERBAL PRODUCTS IN TIRUCHIRAPPALLI

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ABSTRACT

The current research tested brand trust dimensions and consumer demographics, including gender, against consumer attitudes toward herbal products. Factor analysis revealed a one-factor structure that blended brand loyalty and product quality, with primary items like "Recommend to friends" and "Consistent quality" having high loadings. Regression analysis also showed that brand trust measures brand transparency, trust in use, and safety—were not significant predictors of gender, with demographic influences having limited impacts on perceptions of brand trust. Purchase frequency, on the other hand, was a significant predictor of whether herbal products are considered healthier, indicating that engagement via behaviour has a significant influence on health-related attitudes. The results highlight the need to target consumer behaviour, not demographics, when creating marketing campaigns for herbal products. Future studies should consider other psychological and cultural factors to further investigate trust and loyalty in this area. ***Research Design:*** *The present research employed a quantitative study plan on the basis of survey facts collected from a sample size of 307. Descriptive statistics was used to report the demographic and brand trust variables. Exploratory factor analysis was applied to examine the underlying factor structure of the brand loyalty and product quality items. Pearson correlation analysis was applied to examine the intercorrelations among gender and brand trust dimensions. Multiple regression analysis was utilized to determine whether brand trust indicators brand transparency, trust in use, and safety while using the brand would be able to predict gender.*

KEYWORDS: Brand Trust, Brand Loyalty, Product Quality, Gender Differences, Consumer Behaviour, Herbal Products, Factor Analysis, Regression Analysis.

INTRODUCTION

In the current competitive market, brand trust has become a key driver of consumer loyalty and purchasing behaviour, particularly in industries such as herbal and natural products where product effectiveness and safety take precedence. Brand trust refers to consumers' attitudes toward a brand's openness, dependability, and integrity, which in turn determine their propensity to buy from the brand over and over again and refer others to the brand. Further, product quality perceptions of, for example, consistency, natural efficacy, and expectations fulfilment are highly interconnected with brand loyalty, representing consumers' global judgments of their brand experiences. A comprehension of the interplay between brand trust, product quality, and consumer demographics is vital for marketers who seek to establish robust, long-term consumer relationships. Although extensive research has studied these constructs separately, there have been fewer studies that have combined them to look at how they jointly impact consumer behaviour and if demographic variables such as gender have a distinguishing influence on these attitudes.

PROBLEM STATEMENT

Notwithstanding the established value of brand trust in influencing consumer behaviour, little empirical research exists on the manner in which variables of trust interact with demographic variables like gender in the herbal product context. This shortcoming presents a problem for marketers trying to target strategies according to customer traits. Additionally, it is not known if brand trust dimensions like transparency, product use trust, and safety perceptions can forecast gender differences in consumer attitude or buying behaviour. Absent such knowledge, market segmentation and optimization of engagement may be less efficient. Thus, this research will discover the relationship between brand hope factors and gender and explore the underlying factor model connecting brand loyalty and product quality in order to contribute valuable findings to the herbal products industry.

RESEARCH OBJECTIVES

- To recognize the most important variables that impact brand faithfulness of herbal product customers in Tiruchirappalli.
- To analyze the relationship between consumer demographic characteristics (income, education, gender, age) and their loyalty towards herbal brands in Tiruchirappalli.

RATIONALE OF THE STUDY

The justification for this research is due to the gap that needs to be addressed in current literature in terms of the influence of demographic variables on brand trust dimensions and their role in consumer decision-making, particularly in herbal products. Previous studies (e.g., Nguyen & Leblanc, 2001; Chaudhuri & Holbrook, 2001) have highlighted brand trust's influence on loyalty and retention, but little has been understood in terms of how these dynamics are different across genders. Also, as consumers increasingly look for product quality and health benefits when it comes to herbal products (Lin & Chang, 2011), the need arises to explore how such perceptions interface with trust determinants. This research therefore attempts to offer empirical support on such relationships to assist marketers in developing more targeted and effective engagement strategies.

Theoretical Underpinnings

This research is based on brand trust theory as well as consumer behaviour models. Chaudhuri and Holbrook (2001) define brand trust as a key antecedent to brand loyalty, including consumers' faith in a brand's consistent delivery of expected benefits. Keller's (2003) theory of brand knowledge extends that brand equity is driven by interconnected consumer cognitions, such as quality and loyalty, which factor analysis explores in this research. Inclusion of demographic variables draws on Nguyen and Leblanc's (2001) observations on the limited but situational influence of demographic variables on consumer attitudes, with psychological and behavioural variables more commonly having more significant predictive effects. Also, Lin and Chang's (2011) work on perceptions of organic products reinforces the consideration of consumer participation in health-related beliefs, the focus of the research on purchase frequency as a behavioural measure. Collectively, these theoretical underpinnings inform the investigation of how demographics, product quality, and brand trust interact to shape consumer behaviour in the herbal products market.

Analysis

Reliability Statistics	
Cronbach's Alpha	N of Items
.961	13

Ruler with 13 items shows **Excellent reliability** 0.961), indicating strong internal consistency and suggesting that all substances are effectively gauging the same underlying concept.

FACTOR ANALYSIS

Research Objective

- To recognize the most important variables that inspiration product faithfulness of herbal product customers in Tiruchirappalli.

Hypotheses

H1: The product quality and brand loyalty scale show high internal consistency.
H2: The information usual is suitable for factor analysis.
H3: One underlying factor account for a large percentage of variance on the scale.
H4: Brand loyalty and product quality are positively correlated and load on one underlying construct.

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Amount of Sample Competence.		0.838
Bartlett's Test of Sphericity	Chi-Square	1333.634
	Degrees of Freedom	15
	Significance	0.000

The p-value (.000) is smaller than 0.05, connotation that the association matrix isn't an individuality medium. That means there are strong relations between variables factor analysis is suitable.

Communalities		
	Initial	Extraction
(Product quaity)Consistent quality	1.000	0.742
(Product quaity)Expectation fulfilled	1.000	0.691
(Product quaity)Natural and Effective	1.000	0.711
(Brand loyalty) Regularly purchase same product	1.000	0.776
(Brand loyalty) Recommend this friends	1.000	0.795
(Brand loyalty) Like to contine	1.000	0.251
Extraction Method: Principal Component 0Analysis.		

The findings show that the majority of variables exhibit high extraction values, implying that they are appropriately summarized by the underlying factors. For example, "Consistent quality" shows an extraction value of 0.742, which resources that 74.2% of its modification is accounted for by the extracted components. Likewise, "Expectation fulfilled" (0.691) and "Natural and Effective" (0.711) also reflect strong communalities, which mean that these dimensions of product quality are captured meaningfully by the factor solution.

Total Variance Explained						
Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	3.967	66.118	66.118	3.967	66.118	66.118
2	.997	16.621	82.739			
3	.420	7.001	89.740			
4	.291	4.842	94.581			
5	.194	3.227	97.809			
6	.131	2.191	100.000			
Extraction Method: Principal Component Analysis.						

The Entire Variance Clarified table gives information on the amount of the total alteration in the data that is explained by each component extracted. From the Initial Eigenvalues, the first component explains 3.967 eigenvalue and 66.12% of the total variance. This is quite a big percentage, suggesting that this one component is capturing the majority of the information in the six original variables. The Sums of Squared Loadings for Extraction verify that a single component was extracted, and it still accounts for the same 66.12% variance. This indicates a high unidimensional structure in the data, or that there is a single underlying factor that very well captures the common variance among items.

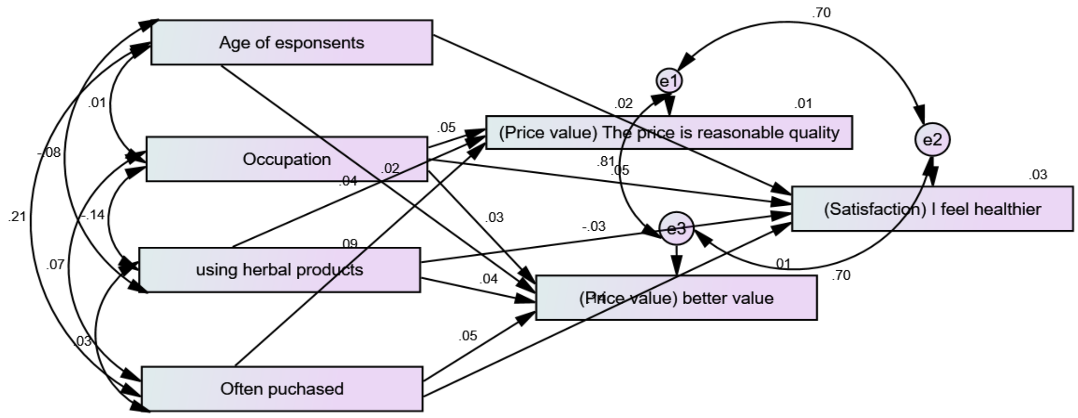
Component Matrix[a]	
	Component
	1
(Brand loyalty) Recommend this friends	0.892
(Brand loyalty) Regularly purchase same product	0.881
(Product quality)Consistent quality	0.862
(Product quality)Natural and Effective	0.843
(Product quality) Expectation fulfilled	0.831
(Brand loyalty) Like to continue	0.501

The constituent medium illustrates the factor loadings of each adjustable on the sole removed constituent, which assists in ascertaining what variables are most directly linked to the underlying factor. In this analysis, just one component was extracted, reflecting a unidimensional structure that is capturing the common variance among all six variables. The findings indicate that there are high loadings for the majority of items, with this revealing that they are highly correlated with the primary factor. In particular, the highest loadings are found for the items "Recommend this to friends" (0.892) and "Regularly purchase same product" (0.881), which highlights that these elements of brand loyalty are most highly connected with the primary component. Likewise, product quality items like "Consistent quality" (0.862), "Natural and effective" (0.843), and "Expectation fulfilled" (0.831) also have high loading, indicating that perceptions of product quality are also very well captured by the one factor.The item "Like to continue" loads lower (0.501) than the rest. Even though it still loads onto the factor, its lower loading indicates that it has a weaker association with the underlying construct represented by the component perhaps due to conceptual differences or weaker correlation among the other items.

PATH DIAGRAM

Research objectives

To analyze the association between consumer demographic variables and their brand loyalty to herbal products in Tiruchirappalli.



Model Fit Indices

- **Chi-square/df ratio (CMIN/DF)** (< 3 acceptable) = 0.009/0.009/1
- **RMSEA** (< 0.08 acceptable, < 0.05 good) = 0.0949
- **CFI / TLI** (> 0.90 acceptable, > 0.95 good) = 1.000/1.036

Overall Assessment

Despite a slightly elevated CMIN/DF ratio, the **RMSEA, CFI, and TLI** all indicate that the perfect demonstrates an **excellent fit** to the information. Therefore, the model can be considered **statistically sound and well-fitting**.

Regression Weights

Relationship between the variables			Estimate	S.E.	C.R.	P
Price is reasonable	<---------------------	Occupation	0.070	.077	0.907	0.35
Price is reasonable	<---------------------	Using herbal products	0.145	.185	0.783	0.433
Price is reasonable	<---------------------	Often purchase item	0.106	.071	1.494	0.135
Herbal products are better comparing to chemicals	<---------------------	Age	0.020	.030	0.649	0.517
Herbal products are better comparing to chemicals	<---------------------	Occupation	0.040	.083	0.481	0.631

Relationship between the variables			Estimate	S.E.	C.R.	P
Herbal products are better comparing to chemicals	<---------------------	Using herbal products	0.142	.200	0.708	0.479
Herbal products are better comparing to chemicals	<---------------------	Often purchase item	0.069	.077	0.888	0.374
Herbal products are healthier	<---------------------	Age	0.014	.033	0.434	0.664
Herbal products are healthier	<---------------------	Often purchase item	0.175	.070	2.513	0.012
Herbal products are healthier	<---------------------	Occupation	0.069	.075	0.929	0.353
Herbal products are healthier	<---------------------	Using herbal products	-0.110	.180	-0.608	0.544

Dependent Variable: Price is Reasonable

H1: Occupation significantly influences the belief that the price of herbal products is reasonable.

H2: Frequency of consumption of herbal products has a important influence on the belief that the price of herbal products is reasonable.

H3: Frequency of purchase of herbal products significantly influences the perception that their price is reasonable.

Dependent Variable: Herbal Products Are Better Than Chemicals

H4: Age has a important inspiration on the insight that herbal products are well than living products.

H5: Occupation has a significant influence on the perception that herbal products are better than chemical products.

H6: Frequency of use of herbal goods has a momentous stimulus on the insight that herbal goods are better than biochemical goods.

H7: How often one buys herbal goods has a momentous inspiration on the awareness that herbal goods are better than organic products.

Dependent Variable: Herbal Harvests Are Healthier

H8: Age has a significant influence on believing that herbal products are healthier.

H9: Occupation has a significant influence on believing that herbal products are healthier.

H10: Frequent use of herbal products has a significant influence on believing that herbal products are healthier.

H11: How often one buys herbal products has a significant influence on believing that herbal products are healthier.

Interpretation of Regression Estimates

The p-values > 0.05, meaning that these variables do not significantly predict whether or not the respondents think the prices of herbal products are reasonable. For the belief that "Herbal products are better compared to chemicals," all the predictor variables were statistically not significant. This indicates that none of these demographic and behaviour characteristics affect respondents' relative perception between herbal and chemical products. An interesting result appears for the variable "Herbal products are healthier." Among the predictors, "Often purchase item" exhibited a statistically noteworthy positive effect (Estimate = 0.175, p = 0.012). This means that those respondents who tend to buy herbal products very often are significantly more likely to perceive herbal products as healthier. Conversely, the influence of age (p = 0.664), profession (p = 0.353), and consumption of herbal products (p = 0.544) on this perception was not statistically significant. This suggests that purchase frequency will strengthen positive health beliefs, yet other predictors such as age, occupation, and overall herbal use have weak predictive ability in this model.

Squared Multiple Correlation

Variables	Estimate
herbal products are healthier	0.027
Herbal products are better comparing to chemicals	0.006
Price is reasonable	0.012

Three estimates are positive, representative a optimistic association between the predictors and these outcome variables, the influence magnitude is very low in each instance. The comparatively higher estimate for "Herbal products are healthier" indicates that this belief might be influenced slightly more by consumer practices or demographic characteristics than the other two variables. These values in and of themselves do not convey statistical significance, so their practical or theoretical significance must be approached guardedly unless validated by p-values or confidence intervals. Nevertheless, the findings are that consumer opinions about herbal products, especially as it relates to health advantages, are more sensitive to variations in influencing variables than chemical comparison or price.

Regression

Comparison between both the objectives that is Gender and Brand Trust Hypothesis Development

Null Hypothesis (H_0):

Brand trust variables (brand transparency, trusting to use the brand, and being safe using the brand) do not have a significant relationship with gender.

Alternative Hypothesis (H_1):

There is a important association between at least one of the brand trust variables and gender.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics: R Square Change	F Change	df1	df2	Sig. F Change	Durbin-Watson
1	.058[a]	.003	-.007	.50199	.003	.340	3	303	.796	1.329

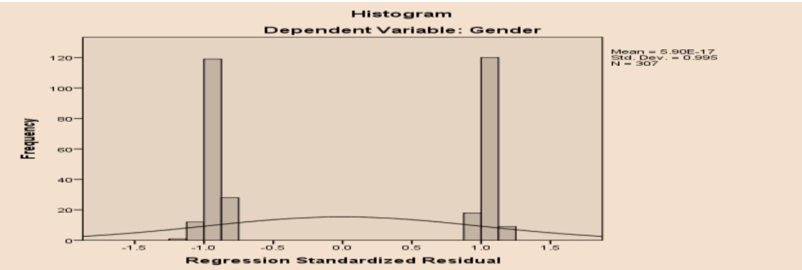
a. Forecasters: (Continuous), (Brand Trust) feel using sage brand, (Brand Trust) Brand is transparent, (Product Hope) I hope the make to use

b. Dependent Variable: Gender

The regression model was to test if brand trust measures that is, brand transparency, trust in employing the brand, and safety while using the brand were significant predictors of gender. The results show that the perfect is statistically insignificant with an R^2 value of .003, i.e., 0.3% of variance in gender is explained by the brand trust measures. The Familiar R^2 is negative (-.007), implying that the model fails to offer improved prediction over chance. The F-test also is not significant ($F(3, 303) = 0.340$, $p = .796$), meaning that collectively, the predictors do not elucidate a noteworthy proportion of alteration in the reliant on variable. The Durbin-Watson statistic is also 1.329, implying a little positive autocorrelation, but a more detailed examination would be required to evaluate its effect. In general, the findings show that brand trust variables fail to significantly predict gender within this sample.

ANOVA[a]						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.257	3	.086	.340	.796[b]
	Residual	76.355	303	.252		
	Total	76.612	306			
a. Reliant on Variable: Gender						
b. Forecasters: (Continuous), (Kind Trust) feel using sage brand, (Brand Trust) Brand is transparent, (Brand Faith) I trust the make to use						

The ANOVA table assesses the overall meaning of the reversion model for predicting gender based on the three brand trust variables: brand transparency, trusting to use the brand, and feeling safe to use the brand. The findings reveal that the model is not important, $F(3, 303) = 0.340$, $p = .796$. This proposes that the set of brand trust variables does not provide a significant variance explanation of gender. The sum of squares for regression is 0.257, which is low in relation to the residual sum of squares (76.355), again supporting that the model doesn't meaningfully explain variance in gender. The results are aligned with model summary findings and reiterate that brand trust is not a predictor of gender in this population.



Coefficients[a]						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.455	.064		22.660	.000
	(Brand Trust) Brand is transparent	-.026	.035	-.084	-.745	.457
	(Brand Trust) I trust the brand to use	.033	.037	.103	.896	.371
	(Brand Trust) feel using sage brand	.002	.034	.005	.052	.959
a. Dependent Variable: Gender						

The coefficients table gives some insight into the unique contribution of each of the brand trust variables in the prediction of gender. The intercept ($B = 1.455$, $p < .001$) is statistically significant and holds the predicted value of gender when all the predictor variables equal zero. But none of the brand trust variables uniquely predict gender. Particularly, brand transparency exhibits a negative but not significant effect ($B = -0.026$, $p = .457$), showing a very weak and statistically not significant relationship. Likewise, trust in employing the brand ($B = 0.033$, $p = .371$) and being safe using the brand ($B = 0.002$, $p = .959$) also exhibit non-significant effects on gender. The standardized coefficients (Beta values) again support that all three predictors have extremely weak effects and values approaching zero. These findings again support that dimensions of brand trust do not play a significant role in influencing or predicting gender in this data.

Residuals Statistics[a]					
	Minimum	Maximum	Mean	Std. Deviation	N

Predicted Value	1.3925	1.5731	1.4788	.02898	307
Residual	-.57313	.60753	.00000	.49953	307
Std. Predicted Value	-2.980	3.254	.000	1.000	307
Std. Residual	-1.142	1.210	.000	.995	307
a. Reliant on Variable: Gender					

The statistics for residuals tell us about the precision and spread of the foreseen values in the worsening perfect when gender is the dependent variable. Predicted values vary from 1.3925 to 1.5731, and their mean is 1.4788, which precisely equals the actual mean of gender in the dataset meaning that the predictions of the model are properly centered but with very narrow variability (Std. Deviation = .02898), indicating poor predictive capacity. The residuals, on behalf of the changes between actual and prophesied values, vary from -0.57313 to 0.60753, with an average of 0.000, indicating that, overall, the model neither under- nor over-predicts. Yet, the residual standard deviation is quite large (.49953) relative to the thin range of projected values, once again attesting to the weak fit of the model. Both homogenous projected values and standardized residuals cluster around zero with a standard deviation nearly equal to 1, as they should in a well-specified model. Even so, since the overall performance of the model has been poor in previous outputs (e.g., low R^2), these patterns of residuals are predominantly a reflection of random error and not substantial prediction.

FINDINGS

Factor Analysis

A single factor was identified which included both the brand loyalty and the product quality aspect. The main items of loyalty "recommend to friends" (0.892) and "regularly purchase same product" (0.881) were the ones that loaded the most, besides they were joined by the quality indicators "consistent quality" (0.862) and "natural and effective" (0.843). The item "like to continue" (0.501) was loaded weakly, which indicated either a weaker connection or a measurement error.

Path Relationship

The only significant connection was between the frequency of purchase and the belief that "herbal products are healthier" ($p = 0.012$). Other relationships concerning demographics were not significant, which means that the behaviour of the consumer is more influential than the demographics in forming an attitude.

Regression Results

The predictors had small positive impacts on attitudes that is "Herbal products are healthier," "Price is reasonable "but the weak magnitudes limit practical impact. Health perception was slightly more sensitive compared to price or comparison belief.

Gender and Brand Trust:

Brand trust constructs (transparency, trust in use, safe feeling) did not predict gender ($R^2 = .003$; $p = .796$). All predictors contributions were insignificant, thus revealing no substantial gender differences in the perceptions of brand trust.

CONCLUSION

These results in aggregate point toward the fact that although brand trust and product quality constructs are strongly interconnected, particularly from the consumer loyalty point of view, predictive potential varies depending on the context. The dominant unidimensional factor of the component matrix identifies strong shared consumer perception of brand loyalty and quality. Demographic factors such as gender, and even more general consumer characteristics, though, do not seem to influence these attitudes in any strong way. Rather, true consumer behaviour e.g., buying frequency is more central to health-related attitudes toward herbal products. These findings suggest that message strategies need to concentrate more on behavioural interaction and reinforcement of health advantages, rather than demographic targeting, when marketing herbal or natural product lines.

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A STUDY ON LABOUR WELFARE MEASURES IN SUGAR MILLS IN TAMIL NADU

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ABSTRACT

This paper examines labour welfare measures in sugar mills in Tamil Nadu, combining a review of literature, analysis of statutory and non-statutory practices, and policy recommendations. Using recent government reports, academic studies, and field-research style case studies from the state, the article maps the current landscape of welfare provision (ESI, PF, statutory safety provisions, labour welfare funds) and common non-statutory measures (canteens, housing, scholarships, health camps). The paper presents ten concise literature reviews, five summary tables, a discussion of gaps (implementation, awareness, seasonal employment and contractorisation), and actionable recommendations for mills, cooperatives, and policymakers to improve worker well-being and productivity.

KEYWORDS: sugarcane farming, mill operations, ESI, PF, statutory safety provisions, labour welfare funds

INTRODUCTION

The sugar industry is a significant rural employer in Tamil Nadu, linking agricultural livelihoods (sugarcane farming) with industrial wage employment (mill operations). Sugar mills—public, cooperative and private—provide direct employment during the crushing season and year-round employment for permanent staff. Labour welfare measures in these mills are important for two interrelated reasons: first, they ensure basic human dignity, safety and social protection for workers and their families; second, welfare interventions influence productivity, industrial relations, and the long-term sustainability of the mills and sugarcane value chain. Tamil Nadu has a long history of cooperatively structured sugar mills and state involvement, and the State Labour Welfare Fund Act and other social protection arrangements shape the legal welfare floor for industrial workers. Recent government documents indicate ongoing efforts to support both organized and unorganized workers through financial support schemes, welfare board payouts, and revival/modernisation of certain mills—measures that directly affect labour welfare outcomes.

A. Tamil Nadu — Sugar production (5 seasons / years)
(Units = **1,000 tonnes**)

Season / Year	Tamil Nadu sugar production (1,000 t)
2019–20	788
2020–21	878
2021–22	1,247
2022–23	1,482
2023–24	1,073

The sugar production trend in Tamil Nadu over the five-year period shows significant fluctuations influenced by climatic conditions, cane availability, and policy factors. Production rose steadily from 788 thousand tonnes in 2019–20 to a peak of 1,482 thousand tonnes in 2022–23, reflecting improved monsoon conditions, better cane recovery, and higher crushing efficiency. However, in 2023–24, production declined to 1,073 thousand tonnes due to reduced sugarcane cultivation, erratic rainfall, and rising input costs. Overall, the data indicate a cyclical pattern in Tamil Nadu's sugar sector, where output strongly depends on agricultural conditions, timely payments to farmers, and mill operational efficiency.

B. Estimated direct employment in Tamil Nadu sugar mills (5 years)

Year	All-India production (1,000 t) (for same season)	TN share (%)	Estimated direct mill employment (TN)
2019–20	27,411	2.87%	**≈ 14,400**
2020–21	31,192	2.81%	**≈ 14,050**
2021–22	35,760	3.49%	**≈ 17,450**
2022–23	32,815	4.52%	**≈ 22,600**
2023–24	31,964	3.36%	**≈ 16,800**

The estimated direct employment in Tamil Nadu sugar mills shows a close relationship with the state's share of national sugar production. Employment increased from around 14,000 workers in 2019–20 to a peak of 22,600 in 2022–23, corresponding with higher production and mill utilization. This upward trend reflects the labour-intensive nature of sugar manufacturing during peak seasons. However, employment declined to about 16,800 in 2023–24 due to lower sugarcane supply and reduced crushing operations. The pattern highlights that workforce levels in Tamil Nadu's sugar sector are highly sensitive to fluctuations in cane availability, production cycles, and seasonal operational adjustments within mills.

India — Sugar exports (5 recent sugar seasons)

(Units = **1,000 tonnes** — season totals as reported by Directorate of Sugar / industry)

Sugar Season (approx)	India sugar exports (1,000 t)
2019–20	**~596**
2020–21	**~700**
2021–22	**~1,100**
2022–23	**~630**
2023–24	**Restricted / much lower (exports tightly controlled)**

India's sugar export performance over the past five seasons reveals strong fluctuations driven by production levels and government export policies. Exports rose from about 596 thousand tonnes in 2019–20 to a record 1,100 thousand tonnes in 2021–22, supported by surplus production, favorable global prices, and export subsidies. However, exports declined sharply to around 630 thousand tonnes in 2022–23 as domestic consumption increased and restrictions were imposed. In 2023–24, exports were tightly controlled to ensure domestic supply stability. The pattern indicates that India's sugar export performance depends largely on government policy decisions, production surpluses, and global market demand conditions.

Profit — selected Tamil Nadu sugar companies (Net profit / PAT, ₹ crore)

Company	FY20 (₹ crore)	FY21 (₹ crore)	FY22 (₹ crore)	FY23 (₹ crore)	FY24 (₹ crore)
K.P.R. Mill Ltd (consolidated)	377 (approx)	515	842	814	805
Sakthi Sugars Ltd	(losses in earlier years)	(loss)	(loss ~ FY22)	**~3,727** (FY23)	**~1,218** (FY24)

The profitability trend of selected Tamil Nadu sugar companies shows significant variation across firms and years. K.P.R. Mill Ltd recorded consistent profits, rising from ₹377 crore in FY20 to ₹842 crore in FY22, followed by stable performance above ₹800 crore in FY23 and FY24, reflecting diversification and efficient operations. In contrast, Sakthi Sugars Ltd faced continuous losses until FY22 but reported a remarkable turnaround with a profit of about ₹3,727 crore in FY23 and ₹1,218 crore in FY24, largely due to restructuring and improved sugar prices. Overall, profitability in Tamil Nadu's sugar sector depends on diversification, efficiency, and policy stability.

OBJECTIVES

- To map statutory and non-statutory labour welfare measures practiced in Tamil Nadu sugar mills.
- To summarise evidence from existing studies on worker satisfaction and welfare outcomes.
- To identify gaps in policy and implementation specific to sugar mills (seasonality, contractor labour, health risks).
- To recommend practical measures for mills, cooperatives, and policymakers to enhance welfare and productivity.

METHODOLOGY

This study synthesises secondary sources (government reports, peer-reviewed and grey literature) and published case studies on Tamil Nadu sugar mills. Key documents consulted include Tamil Nadu government departmental releases on sugar sector performance, academic studies on welfare measures and quality of work life in sugar mills, and targeted case reports (Arignar Anna, Sakthi, cooperative mill case studies). Where quantitative data were unavailable in the public sources, the paper draws on reported findings from empirical studies to build comparative tables and highlight recurring themes. Web sources and reports used are cited in the references.

LEGAL AND INSTITUTIONAL FRAMEWORK

Several statutory instruments and institutional mechanisms provide the baseline of workers' rights and welfare in Tamil Nadu:

- **The Tamil Nadu Labour Welfare Fund Act, 1972** — establishes a state fund for promotion of welfare of organised labour and provides for certain benefits.
- **Central labour statutes and social security** — Employees' Provident Fund and Miscellaneous Provisions Act, Employees' State Insurance Act (ESI), Payment of Gratuity Act, Minimum Wages Act and Factories Act (safety provisions) apply to sugar mills depending on size and threshold criteria.
- **State welfare schemes** — periodic disbursements and welfare supports for unorganised and construction workers are illustrative of the State's broader welfare efforts; such schemes demonstrate political commitment to worker welfare and are sometimes extended to seasonal and contract workers through welfare boards. **Load-bearing point (citation):** The Tamil Nadu Labour Welfare Fund Act is a cornerstone law that shapes many welfare disbursements for organised workers in the state.

TYPICAL WELFARE MEASURES IN SUGAR MILLS (CLASSIFICATION)

Welfare measures fall into two broad categories:

A. Statutory (mandated)

- Social security contributions (EPF, ESI where applicable).
- Factory safety provisions: guarding of machinery, ventilation, protective equipment, provision for first aid and medical facilities, statutory leave and overtime compensation.
- Payment of wages and statutory benefits (minimum wages, gratuity, payment of bonus).

B. Non-statutory (voluntary / mill-specific)

- Canteen facilities, subsidised food.
- Housing or hostel provision for seasonal workers and migrant staff.
- Education support/scholarships for workers' children.
- Health camps, mobile medical clinics and tie-ups with local hospitals.
- Welfare committees, workers' cooperatives, recreation facilities, training and skills programmes.
- Bonus, festivals/non-monetary benefits, and transport allowances.

Many empirical studies in Tamil Nadu identify a mix of statutory compliance and variable non-statutory welfare measures across cooperative, public and private mills—cooperatives often provide a broader set of local welfare initiatives due to their rural mandate.

TEN CONCISE LITERATURE REVIEWS

Below are ten focused literature summaries on labour welfare and working conditions in Tamil Nadu's sugar mills, drawn from academic and grey literature.

Geetha & Muthumeenakshi (2020) — Statutory Welfare Measures and Quality of Work Life Geetha and Muthumeenakshi compared cooperative and private sugar mills in Tamil Nadu, assessing statutory welfare compliance and quality of work life (QWL). The paper finds that while statutory provisions (ESI, PF, safety measures) are generally in place for permanent staff, there are significant gaps in perceived QWL due to inadequate non-statutory supports, weak grievance mechanisms, and inconsistent safety practices across mills. The authors argue that statutory compliance alone is insufficient—mills need proactive welfare initiatives and worker engagement to raise QWL and reduce absenteeism

Study on Statutory and Non-Statutory Welfare in Thanjavur & Nagapattinam sugar mills A regional study focusing on Thanjavur and Nagapattinam districts analysed both statutory and voluntary welfare measures. It reported that cooperative mills scored higher on local welfare measures (community engagement, local hiring, small scholarships), whereas private mills emphasized monetary benefits. Workers' overall satisfaction aligned with perceived fairness and accessibility of welfare benefits rather than sheer number of schemes. The study highlighted recommendations for improved administrative transparency and periodic welfare audits.

Arignar Anna Sugar Mills case study (2024) A micro-study on Arignar Anna Sugar Mills surveyed employees on satisfaction with welfare measures. Findings: high satisfaction with medical benefits but dissatisfaction with canteen quality and lack of education facilities for workers' children. The study suggested setting up on-site medical facilities, upgrading canteen services, and linking with local schools—priority interventions that can raise morale and retention.

Exploratory Factor Analysis of Labour Welfare Practices (Private Sector) An exploratory study used factor analysis to identify six key welfare practice clusters affecting industrial relations—monetary benefits, worker participation, grievance handling, trade union presence, statutory safety, and amenities. Monetary benefits and grievance handling emerged as strong predictors of industrial harmony in private mills. The study underlines the need for systematic grievance redressal as a low-cost but high-impact welfare measure.

Quality of Work Life study (Zenith research, 2011) Older empirical work looked at job satisfaction, peer relations and working conditions among sugar mill employees. Dissatisfiers included lack of recognition, tedious tasks, and poor physical working conditions.

The paper recommended job enrichment, recognition programmes, and attention to ergonomics to improve QWL in sugar mills. Though dated, the themes (recognition, working conditions) recur in newer studies.

Performance of Sugar Mills: Effect of Welfare Measures (JETIR case study) A performance analysis correlated welfare measures with reduced absenteeism and turnover. The paper found that mills with better welfare provisioning reported higher job satisfaction and lower labour churn; however, a non-trivial proportion of workers in some mills did not perceive welfare measures as adequate, pointing to implementation gaps. The study recommended linking welfare metrics to managerial performance indicators.

Sakthi Sugars welfare assessment (institutional report) A college/academic study of Sakthi Sugars detailed the range of amenities provided (medical camps, canteens, housing) and measured worker satisfaction. While statutory compliance was mostly met, continuous improvement in food services and periodic safety training were identified as weak areas. The study emphasised the importance of periodic welfare audits to maintain standards.

Organisational Climate and Management Techniques (IJMS paper) Research on organisational climate in Tamil Nadu sugar mills argued that modern management techniques (performance management systems, participative practices) are increasingly necessary for improving welfare outcomes indirectly—through better supervision, fairer performance appraisal, and formal training. The study links organisational climate improvements with higher worker satisfaction and better uptake of welfare programs.

JournalRA (2023) — Study on labours in sugar mills A 2023 study mapped demographics, wage structures and welfare usage across selected mills. Seasonal employment patterns were emphasised: casual and seasonal workers had lower access to social security benefits and were more vulnerable to wage discontinuity. The study recommended targeted schemes for seasonal staff—pension portability, seasonal unemployment benefits, and linkages to rural livelihood programs.

Policy reports and media accounts on mill closures & welfare impacts Recent news reports document the social fallout when mills close (job losses, farmer distress). Calls for reopening or modernisation (e.g., Alanganallur mill debates) highlight the connection between mill viability and worker welfare. The media also records state welfare disbursements for unorganised workers—evidence that state policy remains a significant lever for supporting vulnerable mill workers and communities.

KEY FINDINGS

1. **Statutory compliance varies by mill type.** Cooperatives and larger public mills tend to show better compliance on paper; private mills vary widely. Enforcement and practical uptake (e.g., seasonal workers actually covered under ESI/EPF) remain inconsistent.
2. **Seasonality and contractorisation create coverage gaps.** A critical structural challenge is that many field/harvesting workers are casual or contracted per season, making them less likely to get social security entitlements.
3. **Non-statutory welfare has high leverage for morale.** Low-cost non-statutory measures (health camps, improved canteens, grievance redressal) significantly improve perceived welfare and retention.
4. **Safety and occupational health are under-addressed.** Studies repeatedly find lapses in PPE use, safety training, and occupational health surveillance—especially among casual and contract workers.
5. **Mill viability is linked to worker welfare.** Media and policy debates over mill closures show how economic health of mills affects worker livelihoods and the rural economy; modernisation and revival have welfare implications.

DISCUSSION — IMPLEMENTATION CHALLENGES & STRUCTURAL ISSUES

Seasonal employment model

Sugar crushing is seasonal; mills ramp up staffing in peak months and downsize afterwards. While some mills hire permanent core staff, day wage and contract workers constitute a large share of the labour force. Providing statutory social security and sustained welfare to seasonal workers requires policy tools (e.g., portability, seasonal unemployment benefits, or farmer-segment linkages) that many mills and administrations have not uniformly applied. Studies argue that without such measures, vulnerability and absenteeism rise.

Fragmented responsibility & monitoring

Multiple agencies (labour department, health, social security authorities) share responsibility for welfare. Weak coordination leads to gaps—for instance, welfare fund entitlements exist but awareness and administrative access are low among workers. Periodic welfare audits, a recommended best practice, are not uniformly implemented.

Contractor labour & accountability

Use of contractors shifts administrative responsibility away from mills, yet the mills still depend on this workforce for operations. Contract labour arrangements can obscure statutory obligations; targeted enforcement and contractual clauses requiring contractors to comply with welfare standards are necessary.

Occupational health risks

Sugar mills pose specific occupational hazards—heavy machinery, heat exposure during crushing, dust and chemical exposure. Many studies note inadequate occupational health surveillance and absence of routine medical checkups, especially for non-permanent staff. Enhanced health monitoring and preventive interventions (vaccinations, routine screening) can reduce morbidity.

POLICY RECOMMENDATIONS

- **Extend social security to seasonal workers through portability & special schemes**
  Implement EPF/ESI portability or institute seasonal ESI coverage with simplified registration for short-term workers. Create targeted seasonal unemployment support tied to state welfare funds. (Actor: State & Central labour authorities; Mills to cooperate
- **Mandatory annual welfare audits and public reporting**
  The Tamil Nadu labour department should adopt a welfare audit framework for mills (compliance + outcome indicators) and publish scores to incentivise improvements. Mills with poor scores should be eligible for capacity building rather than just penalties. (Actor: Labour Dept).
- **Standardised grievance redressal mechanisms**
  Every mill to maintain a documented grievance redressal process: grievance committee, monthly reporting, anonymous helpline and union representation. This is cost-effective and improves trust. (Actor: Mill management + unions).
- **Health interventions during crushing season**
  Mill-led mobile clinics, periodic occupational health checkups, and mental health support. Partner with local health departments for vaccination drives and health education. (Actor: Mills + Public Health Dept).
- **Contractor accountability clauses**
  All contracts must require contractors to register workers for statutory benefits and maintain records subject to audit. Non-compliance should trigger penalties and debarment. (Actor: Mills + Labour Dept).
- **Capacity building for welfare management**
  Training for mill HR/administration on welfare schemes, entitlements, and record-keeping. Simple digital tools for attendance, benefits tracking, and grievance logging can dramatically improve delivery. (Actor: Industry associations / state skill mission).

- **Linking welfare to mill sustainability schemes**
  Modernisation funds or loan restructuring could be conditioned on welfare improvements for workers—creating an incentive alignment between mill financial health and worker welfare. (Actor: State govt & financial agencies).

LIMITATIONS OF THIS REVIEW

This article is a secondary synthesis relying on academic studies, grey literature and government reports. There is limited access to uniform, up-to-date quantitative datasets across all mills (private sector data often proprietary). Therefore, several claims are drawn from case studies and regionally limited empirical research. Field surveys across representative mills would strengthen the empirical base for certain recommendations—particularly those focused on seasonal worker coverage and contractor compliance.

CONCLUSION

Labour welfare in Tamil Nadu's sugar mills is shaped by a mix of statutory entitlements and mill-level voluntary practices. While statutory provisions provide a crucial baseline (Labour Welfare Fund, ESI, EPF, Factories Act), practical coverage for seasonal and contract workers is uneven. Non-statutory measures—canteens, health camps, housing, training—play a disproportionately positive role in worker satisfaction and retention. Addressing the structural challenges of seasonality and contractorisation, improving enforcement through welfare audits, and strengthening health and grievance mechanisms are practical, high-impact interventions that mills and policymakers can prioritise to improve worker welfare while securing the long-term viability of the state's sugar industry.

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JOB SATISFACTION AND QUALITY OF WORK LIFE OF EMPLOYEES IN PRIVATE SECTOR BANKS WITH SPECIAL REFERENCE TO TIRUCHIRAPPALLI CITY

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ABSTRACT

A drastic change can be witnessed while screening the competency of bank employees, because of the structural changes over the past two decades in the banking sector. To meet the organizational goals and to fortify customer satisfaction the bank employees are facing maximum work pressures while offering timely service. Quality of work life plays a vital role in improving working conditions, career growth, work atmosphere, interpersonal relationship etc. The result of the study highlights that banks should improves the work life policies of bank employees in order to increase their job satisfaction, commitment and efficiency.

KEYWORDS: Private sector banks, Quality of work life, Job satisfaction, Performance of Employees.

INTRODUCTION

Quality of work life (QWL) refers to the favourableness or unfavourableness of a job environment for the people working in an organisation. The period of scientific management which focused solely on specialisation and efficiency, has undergone a revolutionary change. The traditional management (like scientific management) gave inadequate attention to human values. In the present scenario, needs and aspirations of the employees are changing. Employers are now redesigning jobs for better QWL.

Banking is essentially a person-to-person business. In a service industry like banking, the quality of human resources assumes vital importance, bank customers would normally do business with a bank whose staff are well informed and well disposed. For this reason the best personnel are selected, motivated and trained to conduct marketing function in a better way. Improved efficiency and promotion of personalized services are required on the part of the employees for them to offer pleasing, convincing and fulfilling service to customers. Bank officers form a delicate link between the management and the clerical staff. The success of the bank depends upon the coordination, synchronization and cooperation of the bank officers with these two very divergent entities. Hence the job satisfaction of the officers is prime importance because only a satisfied and happy officer will be able to achieve such synergy in the bank.

Quality of work life is elucidated as employee fulfilment with a variety of needs through amenities, activities and outcomes while discharging their duty in the work place. This definition appears to be integrated as it clubs many aspects of other domains such as family life, social life and financial life. Quality of work life is the contented relationship between employees and their total working environment. Moreover it deals explicitly with subjective wellbeing. In connection with this concept, employees' perception of safety and suitability; with regard to psychological and physical work environment varies. Therefore, there are different perceptions for analysing the Quality of work life.

Quality of work life is essential to banking business results as it aims at two objectives: (i) to intensify level of productivity and (ii) to improve the level of satisfaction among the employees. The present study is an attempt on to assess the Quality of work life and job satisfaction among the private sector bank employees.

It analyses different factors like

1. Carrier growth plan
2. Open communication
3. Increased employee participation
4. Flexible work timings
5. Reward and recognition
6. Providing job security
7. Working condition
8. Work life balance

Among the employees of private banks.

REVIEW OF LITERATURE

Barkha Gupta (2016) Quality of work life covers various aspects under the general umbrella of supportive organizational behavior. Aim of QWL is to meet the twin goals of enhanced effectiveness of organization and improved quality of life at work for employees. Quality of Work Life is useful to improve production, organizational effectiveness, morale of an employees and economic development of the country. Providing good Quality of Work Life not only reduces attrition but also helps in reduced absenteeism and improved job satisfaction. Not only does QWL contribute to a company's ability to recruit quality people, but also it enhances a organization's competitiveness .The study examines the factors affecting Quality of Work Life. Eight factors were identified. Bank authority should encourage for employee participation in management, healthy working environment, and work resign, productivity, quality circles, grievance-handling procedure to improve QWL. This can satisfy their important personal needs in terms of power and growth which make them perceive democratization of their work place which will enhance their creativity and innovativeness.

Suresh K. Pattanayak &Dr. Monika Sethi (2016) On the basis of study researcher can say that employees of ICICI bank Ltd in Raipur are somehow happy with the working conditions of the Bank. They feel that they are safe and secure in Bank. They feel that Bank should start their own transport facilities for the staff. However, the dissatisfaction among them is the less growth opportunities. They are not provided with extra care like health camps etc. They are not happy with the way performance appraisal is done and feel that there management is not flexible with their social responsibilities and hence they are less satisfied with their jobs.

Vikram Singh (2017) it concluded that, this is made possible through periodical seminars and conferences within the branches and between branches. Also the Banking sector may provide exclusive work atmosphere with periodical refreshments like fun games and sports where the employees can develop the personal insight necessary to work effectively with people. In due course these kinds of activities will facilitate the bank to maintain good relationship with their colleagues. When the employees are able to positively influence people around them, they will have their relationships improved wherein their stress level is dropped, to contribute more in their work. The growth of the banking sector is inevitable in today's competitive world. The certainty in the role of man power in banks compels the organization to provide good quality of work life so that a good morale is maintained in the work place. The quality of work life will assist the employees to feel a sense of belongingness which ultimately lead them to contribute in their work towards the progress of their organization.

P.Subramanachary (2019) the role of women in modern employment scenario is inevitable. The idle deployment of abilities and knowledge of ladies staffs can deliver better results and benefits to the organization they belong. In this aspect, the role and the partaking of women employment both in public & private sector banks are imperative in today's banking industry. The banking industry carry the logo of service and which is to be provided with better customer touch and that is possible only by the serving support of women employees at all levels both in public and private banks. Comprehensive the study it is concluded that the augmenting job role of women in banking industry need better working environment and support for them to make them ever productive employees and which in turn help the banks to compete effectively in the market for both organizational and customer benefits. For bring this the quality work life amongst the women employees both in public and private sector banks need to be revitalized in years to come

Fangtao Liu (2017) analysed the effects of employee satisfaction and demographic indicators on employee commitment to organizational culture at the organizational level. With data from a survey of 3029 employees from 27 government-owned enterprises, a hierarchical linear model (HLM) was isused to identify the influencing factors of employee commitment to organizational culture at the organizational level. An empirical study indicated the involvement of other factors of employee satisfaction and demographic background such as four contextual variables of enterprises, namely, comprehensive management, energy intensity, cost-income ratio, and capacity-load ratio. It also influenced commitment to organizational culture.

OBJECTIVE OF THE STUDY

- To study the level of job satisfaction of Private Sector Bank employees.

RESEARCH METHODOLOGY

For the study of Job satisfaction and Quality of work life simple random sampling method was adopted. The study was limited to a five selected private sector banks in Tiruchirappalli district. Altogether the period of analysing the primary data were the months from December 2020 to February 2021. The Chi - Square test was used to examine the levels of job satisfaction. Primary and secondary sources were the main tools used to collect data. The structured questionnaire and personal interviews were the main sources of collecting primary data. The articles and internet were the main source of collecting the secondary data. The questions were constructed with the aim to facilitate the respondents to recognize the forms of variables contributing to enrich the satisfaction of employees.

Limitation of the study

- The study is limited only 25o investors.
- The study used only the level of job satisfaction of Private Sector Bank employees in private sector banks with special reference to Tiruchirappalli city
- This study is conducted in Tiruchirappalli city only.

Data Analysis and Interpretation

To identify the important factors that enhanced employee's job satisfaction, Chi – Square Test was conducted. The following table shows the significant factors that are considered important by the employees. As the calculated P value is less than 0.05, the null hypothesis is rejected. As the calculated P value is greater than 0.05, the null hypothesis is accepted.

Chi - square (x^2)

Table No. 1

Observed values

Null Hypothesis: There is no relation between the age and level of satisfaction.

Alternative Hypothesis: There is significant relation between the age and level of satisfaction

Significant Level (x) = 0.05

Age	Level of satisfaction			Total
	Low	Moderate	High	
Up to 30	07	23	I	31
	(22.6)	(74.2)	(3.2)	(100.0)
30 – 40	20	135	19	174
	(11.5)	(77.3)	(11.2)	(100.0)
Above 40	5	25	15	45
	(12.2)	(55.6)	(32.2)	(100.0)
Total	**32**	**183**	**35**	**250**

Table of expected values

Age	Level of satisfaction		
	Low	Moderate	High
Up to 30	03.9	22.6	04.3
30 – 40	22.2	127.3	24.3
Above 40	05.7	32.9	06.3

$$\frac{(\,Observed\ value - Expected\ value)^2}{Expected\ value}$$

Observed value (O)	Expected value (E)	(O-E)	$(O-E)^2$	$\frac{(O-E)^2}{E}$
07	03.9	3.1	9.61	2.46
23	22.6	0.4	0.16	0.00
01	04.3	-3.3	10.89	2.53
20	22.2	-2.2	4.84	0.21
135	127.3	7.7	59.29	0.46
19	24.3	-5.3	28.09	1.15
5	5.7	-0.7	0.49	0.08
25	32.9	-7.9	62.41	1.89
15	6.3	8.7	75.69	11.90
				x^2=28.68

Degrees of freedom = (columns – 1) (row – 1) = (3 -1) (3-1) = (2) (2) = 4	Significant Level (x) = 0.05 x^2 Table Value = 9.49 x^2 Calculated Value = 28.68 $Calculated > x^2\ Table\ values$

We reject null hypothesis, and accept alternative hypothesis

Alternative hypothesis: There is significant relation between age and level of satisfaction.

Table No. 2

Observed values

Null Hypothesis: There is no relation between the Monthly Income and level of satisfaction.

Alternative Hypothesis: There is significant relation between the monthly income and level of satisfaction

Significant Level (x) = 0.05

Bank	**Level of satisfaction**			**Total**
	Low	**Moderate**	**High**	
AXIS BANK	4	39	7	50
	(9.0)	(77.0)	(14.0)	(100.0)
FEDERAL BABK	7	36	7	50
	(14.0)	(72.0)	(14.0)	(100.0)
HDFC	7	36	7	50
	(14.0)	(72.0)	(14.0)	(100.0)
ICICI	7	36	7	50
	(14.0)	(72.0)	(14.0)	(100.0)
KVB	7	36	7	50
	(14.0)	(72.0)	(14.0)	(100.0)
Total	**32**	**183**	**35**	**250**

Table of expected values

Bank	**Level of satisfaction**		
	Low	**Moderate**	**High**
AXIS BANK	6.4	36.6	7.0
FEDERAL BABK	6.4	36.6	7.0
HDFC	6.4	36.6	7.0
ICICI	6.4	36.6	7.0
KVB	6.4	36.6	7.0

$$\frac{(\,Observed\ value - Expected\ value)^2}{Expected\ value}$$

Observed value (O)	**Expected value (E)**	**(O-E)**	$(O-E)^2$	$\frac{(O-E)^2}{E}$
4	6.4	-2.4	5.76	0.90
39	36.6	2.4	5.76	0.15
7	7	0	0	0
7	6.4	0.6	0.36	0.05
36	36.6	-0.6	0.36	0.00
7	7	0	0	0
7	6.4	0.6	0.36	0.05
36	36.6	-0.6	0.36	0.00
7	7	0	0	0
7	6.4	0.6	0.36	0.05
36	36.6	-0.6	0.36	0.00
7	7	0	0	0
7	6.4	0.6	0.36	0.05
36	36.6	-0.6	0.36	0.00
7	7	0	0	0
				x^2= **1.25**

Degrees of freedom = (columns – 1) (row – 1) = (5 -1) (3-1) = (4) (2) = 8	Significant Level (x) = 0.05 x^2 Table Value = 15.507 x^2 Calculated Value = 1.25 $Calculated\ value < x^2\ Table\ values$

We accept null hypothesis, and reject alternative hypothesis

Alternative hypothesis: There is no significant relation between bank and level of satisfaction.

CONCLUSION

The investigation provides that job satisfaction and quality of work life of employees in the private sector banks depends on different factors like age, gender, educational qualification, working conditions, career growth etc. Following these observations, many private sector banks have taken a number of steps to improve satisfaction level of employees. These steps include career growth, interpersonal relationship, work life balance, working conditions etc., which will contribute to better employee satisfaction.

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FACTORS INFLUENCING PERSONAL INVESTMENT DECISIONS AND FINANCIAL SATISFACTION OF TIRUCHIRAPPALLI'S WITH SPECIAL REFERENCE TO SMALL-SCALE WOMEN ENTREPRENEURS

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ABSTRACT

Entrepreneurship is crucial for a country's economic and social growth, and India has implemented flagship programs like Invest, Startup, and Make to promote entrepreneurship and self-sustenance. Women entrepreneurs significantly contribute to the Indian economy, managing personal and professional aspects and developing organizations, with countries developing ecosystems for their growth. Understanding their attributes is crucial for making their engagement relevant and productive. The BFSI sector can help individuals select appropriate investment instruments based on their risk appetites. The OECD Adult Financial Literacy (2017) suggests that governments should focus on teaching women financial topics and a solid financial literacy curriculum to boost their confidence in making investment decisions. The study explores the investment behaviour and factors affecting women entrepreneurs' financial satisfaction in Tiruchirappalli. Sampling techniques, including judgment and snowball sampling, were used to identify respondents. A total of 120 women entrepreneurs participated in the qualitative inquiry phase and developed a conceptual Proposed model, which was validated through a questionnaire used for further analysis. The study explores women entrepreneurs' investment behaviour and factors influencing their decision-making. Women entrepreneurs are risk-averse, often influenced by family investment preferences. They prefer fixed deposits and have poor to moderate investment product expertise, discouraging diversification. They seek expert guidance but maintain separate accounts for income and expenses. Due to professional and personal obligations, they struggle with investing intricacies. They would diversify into other asset classes but believe they are not well prepared for retirement.

KEYWORDS: *Women Entrepreneurs, Investment, Decisions, Financial Satisfaction, SEM.*

INTRODUCTION

Entrepreneurship is crucial for a country's economic and social growth, and India has implemented flagship programs like Invest, Startup, and Make to promote entrepreneurship and self-sustenance. Women entrepreneurs contribute significantly to the Indian economy, managing personal and professional facets and developing organizations. As females become a rapidly increasing performing population, countries are developing ecosystems for women's entrepreneurship. The Indian government has launched initiatives like Startup India, RWDE, Swa Shakti Project, Rashtriya Mahila Kosh, and NMEW to encourage women entrepreneurship. The startup ecosystem in India is the third-largest in the world, with women entrepreneurs accounting for 9% of the total number of founders. Women-led startups are welcomed by the investment ecosystem, including angel investors and seasoned venture capitalists. Industry interest in women as investors is growing, but they are often not served or understood well by wealth management advisory and banking services.

The Banking Financial Services and Insurance (BFSI) sector should actively engage with women entrepreneur investors to provide them with knowledge about various financial instruments and formats. By sharing information about financial instruments and metrics, the sector can help track investment performance and provide timely skills for growth and future planning. By participating in consumer awareness programs and providing the right value propositions, the BFSI sector can make women entrepreneurs more financially informed and productive. Understanding the specific attributes of women entrepreneurs, such as knowledge, skills, attitudes, and beliefs, is crucial for making their engagement relevant and productive.

The study focuses on women entrepreneurs as investors due to their increasing presence and participation in finance-related decision-making processes. The study also examines the difference in behaviour between men and women in financial matters. The growing segment of women investors has led to increased interest from banking and finance institutions. Women entrepreneurs are better accepted as part of families' financial decision-making processes, making it crucial to understand their behaviour when making personal investments.

Investment involves deploying funds in suitable instruments to achieve a reasonable future return. In personal finance, it involves buying financial products with the expectation of a positive return. Money is crucial in meeting present and future needs, as it helps individuals achieve their goals and delay current consumption to ensure returns on investments will fulfill future needs. Individuals analyze investment instruments based on risk, return, liquidity, and marketability, then match them to their needs and inclinations. Personal investment decisions are driven by personal objectives, which can be tangible or intangible and are connected to factors like family setup, dependents, lifestyle, income level, future planning, and retirement preparation.

The financial sector offers numerous investment instruments for individual investors, including bank deposits, equity, debentures, bonds, post office saving schemes, public provident funds, mutual funds, company deposits, life insurance, investment in gold, silver, metals, real estate, and government securities. Investors can compare products, understand their features, analyze risk, and see the return of these instruments. The BFSI sector also provides investment advisory services to help individuals select the appropriate investment instrument. Different features of these products cater to different risk appetites, allowing individuals to choose an investment instrument that matches their investment objectives. The study explores the investment behaviour and factors affecting women entrepreneurs' financial satisfaction in Tiruchirappalli.

REVIEW OF LITERATURE

This research review aims to fill gaps in existing literature on personal investments, particularly in women entrepreneurs. It examines factors affecting investment decisions, financial satisfaction, and segmenting investors based on their behaviour.

"Women entrepreneur" is defined as a female who takes on the challenging role of building an enterprise and becoming financially independent (MeenuMaheshwari & PriyaSodani, 2015). Rashmi (2016) defines women entrepreneurs as businesses owned and controlled by women that have a minimum financial stake of 51% of the capital and employ at least 51% of the workforce. Despite constituting 48% of the Indian population, women contribute only 34% of economic activity.

The entrepreneurial universe has been traditionally dominated by males (Mustapha & Punitha, 2016; Salis & Flegl, 2021; Sowmya, Majumdar, & Gallant, 2010). Women often pursue entrepreneurship due to special circumstances, lack of employment opportunities, and the desire to be independent and earn financial rewards. However, with increased education and awareness, the number of women taking up entrepreneurship has increased in recent decades, indicating a growing interest in economic activity among women.

Women's entrepreneurship is an important tool that can significantly improve women's quality of life. Brush et al. (2009) endorse this idea as well. They contend that women entrepreneurs are the fastest-increasing demographic. These female entrepreneurs are bringing innovative products to market, creating jobs and money. With the rising participation of women in business activities, so has study on them (Cardella, Hernández-Sánchez, & Sánchez Garca, 2020).

Motivations for starting a business, challenges they face, opportunities available, and factors that contribute to their success are all important research areas for women entrepreneurs (Beriso, 2021; Ghouse, Durrah, & McElwee, 2021; Noor, Isa, & Muhammad, 2021; Polas, Raju, Muhibbullah, & Tabash, 2021; Rudhumbu, du Plessis, & Maphosa, 2020).

According to Haram and Shams (2021), women entrepreneurs positively contribute to their families' level of life. As a result, there should be an examination into how they manage the riches that they are amassing.

Entrepreneurs are individuals who are aggressive and have a strong risk-taking proclivity. According to Boyd (2016), people working in many professions fail to appreciate and grasp gender inequality, which is important for exploring and ensuring sustainable development.

Research on the psychological makeup of women entrepreneurs from developing countries is needed, as they are a distinct segment that significantly contributes to the economy, as noted by Cardella et al., 2020.

Research on the psychological makeup of women entrepreneurs from developing countries is crucial, as they are a distinct segment that significantly contributes to the economy, as noted by Cardella et al., 2020. Understanding their unique work styles and psychological makeup is essential for a more comprehensive understanding of their impact on the economy.

The behavioural finance discipline aims to study and interpret individuals' investment behaviours, influencing the pricing and positioning of investment products in the marketplace. It can be divided into two subtopics, each influenced by aspects of behavioural finance (Pompian, 2006).

Individual investment behaviour is influenced by analytical mathematical skills financial awareness and literacy. Multiple factors can influence decision-making for financial aspects, and humans may not always be able to make rational decisions (KumarGoyal, & Basu, 2018; Nigam, Srivastava, & Banwet, 2016). Chavali & Mohanraj 2016, Baker, Kumar, & Singh 2018 highlight the critical and biased nature of human decisions, influenced by factors such as gender, persona, and other prejudices.

Financial satisfaction is defined as an investor's view of their appraisal of their financial status. Hira and Mugenda (1998) define financial contentment as "satisfaction with various aspects of one's financial situation". Financial satisfaction is the state of accomplishing one's financial goals and demands (Sahi, 2017). Individuals can only achieve their financial objectives if they have the necessary resource, which is money. Lack of money can lead to financial troubles and unhappiness, which can lead to medical issues and, in severe conditions, depression (Sahi, 2017). Joo and Grable (2004) conducted extensive research on financial satisfaction, using both single and multiple-item scales. They found that income, age, and education positively influence financial satisfaction. Income levels directly affect financial investments and satisfaction levels. Attitude towards money also influences financial investment decision-making and satisfaction. Other factors studied include demographic factors, financial stress, financial behaviour, risk tolerance, and financial knowledge. Joo &

Grable (2004) suggested that demographic factors indirectly affect financial satisfaction, while psychological factors should be explored as a determinant of financial satisfaction. Both methods provide acceptable reliability and validity.

Behavourial finance suggests that individuals' cognitive and beliefs biases influence their investment decisions, impacting financial satisfaction and investors' financial condition. A study by Sahi (2017) found that psychological biases, such as overconfidence, self-control, and budgeting tendencies, positively affect financial satisfaction. The satisfaction scale measured current income, tax payment ability, family resources, emergency fund availability, inflation, and maintaining a lifestyle. These biases can influence investors' financial decisions and satisfaction levels.

OBJECTIVES OF THE STUDY

This study's objectives are based on the identified research gaps in the previous section. There are,

1. To determine the factors influencing women entrepreneurs' personal investment decisions and financial satisfaction.
2. To study the personal investment behaviour of Women Entrepreneurs

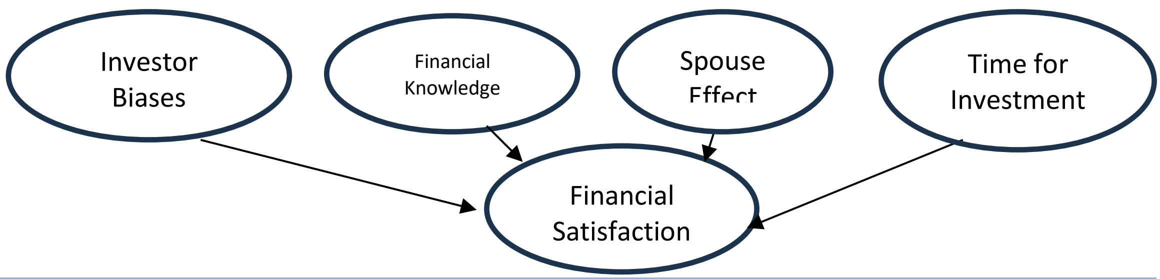
STATEMENT OF THE PROBLEM

Personal investing decisions are complex and diverse, with several options available. With women's greater participation in the workforce, governments must implement programs teaching women financial topics and a solid financial literacy curriculum to strengthen their confidence in making investment decisions, according to the OECD Adult Financial Literacy (2017). The overall level of financial literacy is low. Women outperform men in financial literacy. Women outlive males in terms of life expectancy. Because women have shorter working lifetimes and earn less, they must learn about investing earlier and plan for a longer life. In India, men tend to score higher on minimum required financial behaviour than women, indicating a significant difference in financial behaviour between the two genders.

RESEARCH METHODOLOGY

The proposed research aims to understand investor behaviour and factors impacting the personal investment decisions of women entrepreneurs in Tiruchirappalli. The study uses sequential mixed methods research, with a qualitative inquiry phase. The research design includes exploratory and explanatory phases, with a focus on qualitative inquiry and data analysis. The study aims to fill the gap in studies on investment behaviour and factors affecting women entrepreneurs' financial satisfaction. Sampling techniques were used to identify respondents, with judgment sampling and snowball sampling used for the first set. The findings from the qualitative phase helped develop a conceptual model, which was then validated and verified through a questionnaire for the quantitative phase. Respondents were selected based on their investment history, investment instruments, and middle-income status, with an annual cash inflow of Rs. 2 Lakhs or above. A study involving 140 women entrepreneurs was conducted, with 132 reverting to participate. A detailed questionnaire was shared online and through one-on-one meetings, requiring consent and ensuring data was used for academic research. Out of 129 respondents, 123 reverted their responses. After data cleaning and discarding incomplete questionnaires, 120 responses were used for further analysis.

CONCEPTUAL FRAMEWORK



DATA ANALYSIS AND RESULT

Table 1
Socio-Economic profile

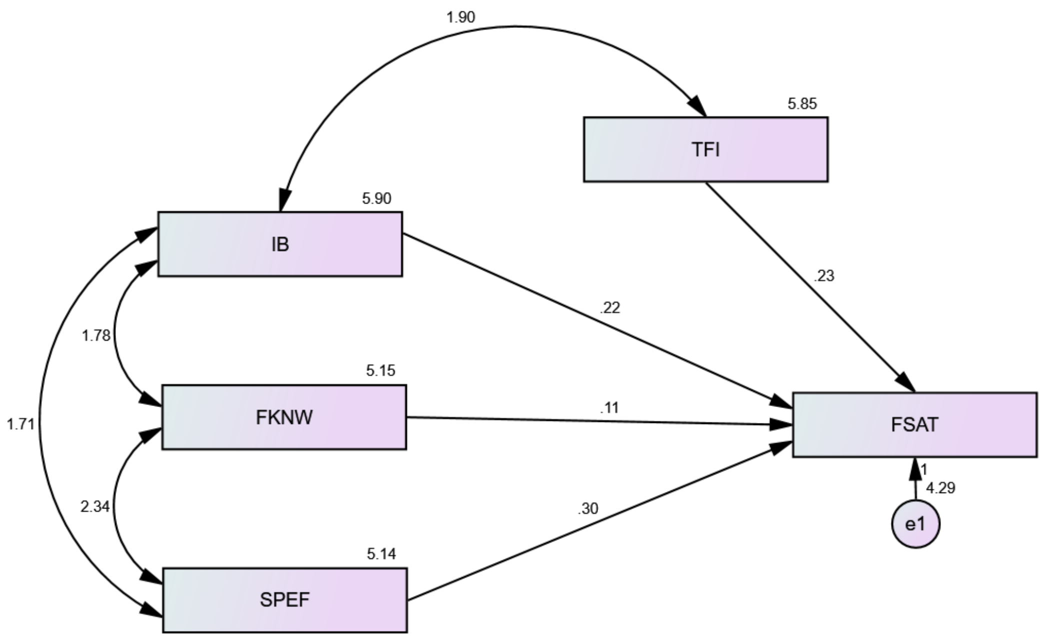
VARIABLES	CHARACTERS	FREQUENCY	VALID PERCENT
Age	18-30 years	22	18.3
	31-40 years	30	25.0
	41-50 years	41	34.2
	51-60 years	20	16.7
	Above 60 years	7	5.8
	Total	**120**	**100**
Marital Status	Married	71	59.2
	Unmarried	49	40.8
	Total	**120**	**100**
Educational Qualification	SSC/HSC	5	4.2
	Graduate	80	66.7
	Post-Graduate	23	19.2
	Professional	12	10.0
	Total	**120**	**100**
House Ownership	Self-Owned	55	45.8
	Rental	10	8.3
	Owned by parents	10	8.3
	Owned by spouse	25	20.8
	Owned jointly with spouse	20	16.7
	Total	**120**	**100**
Annual Income	Rs. 6 – Rs. 10 lakh	68	56.7
	Rs. 11 – Rs. 15 lakh	32	26.7
	Above 15 lakh	20	16.7
	Total	**120**	**100**
Period of Personal Investments	2 - 5 Years	67	55.8
	6 - 10 years	40	33.3
	10 - 15 Years	10	8.3
	Above 15 Years	3	2.5
	Total	**120**	**100**
Income to Investment Ratio	Less than 5%	23	19.2
	5% - 10%	68	56.7
	10 - 15 %	12	10.0
	15% - 20%	10	8.3
	Above 20%	7	5.8
	Total	**120**	**100**
Rate of Return Expected	5% - 10%	12	10.0
	10 - 15 %	44	36.7
	15% - 20%	50	41.7

	Above 20%	14	11.7
	Total	**120**	**100**
Risk-taking in Investments	High level	20	16.7
	Medium Level	68	56.7
	Low level	32	26.7
	Total	**120**	**100**
Long term Investor	yes	102	85.0
	No	18	15.0
	Total	**120**	**100**

Source: Primary Data)

STRUCTURAL MODEL ASSESSMENT

Fig 1: Proposed model of financial satisfaction at the time of investment decision



Goodness of Fit test for Path Analysis

Chi-square	df	CMIN/DF	RMSEA	GFI	AGFI	NFI	CFI
11.449 P=0.000	2	1.845	0.0065	0.985	0.928	0.98	0.99

Regression weights between proposed paths

Relationship between Exogenous and Endogenous			Estimate	S.E.	C.R.	P	Decision
Financial Satisfaction	<---	Investor Behaviour	0.218	0.09	2.43	0.015	Supported

Financial Satisfaction	<---	Financial Knowledge	0.109	0.097	1.129	0.259	Not Supported
Financial Satisfaction	<---	Spouse Effect	0.298	0.096	3.096	0.002	Supported
Financial Satisfaction	<---	Time of investment	0.234	0.084	2.79	0.005	Supported

IMPLICATION AND RECOMMENDATION

This research explores the investment behaviour of women entrepreneurs, focusing on time for investment and the importance of understanding biases and factors influencing their decisions. It highlights the need for relationship managers and financial advisors to understand their client's financial goals and risk-taking appetites to improve their financial satisfaction. The findings can guide financial advisors in offering optimal portfolios and reducing the gap in personal investment decision-making. Policymakers can also focus on retirement products specifically designed for women entrepreneurs and incorporate financial literacy and confidence-building programs for school children.

CONCLUSION

The study aims to understand women entrepreneurs' investment behaviour, and factors influencing their decision-making, and propose and test conceptual models based on these investment factors. Women entrepreneurs are frequently risk-averse in their investing selections, which is often affected by their familial investment preferences. Their adult behaviour reflects this, as they like to invest in fixed deposits. Their self-reported investment product expertise is poor to moderate, discouraging them from diversifying. They frequently seek expert guidance from consultants but keep separate accounts for income and expenses, demonstrating mental accounting bias. They are unable to comprehend investing intricacies due to professional and personal obligations. They would diversify into other asset classes if they had more time. However, they believe they are not well prepared for retirement, with fixed deposits being the most desired investment product.

This study examines the investment behaviour of Tiruchirappalli region women entrepreneurs, concentrating on five investor biases and their impact on financial satisfaction. It also looks at women entrepreneurs' perspectives on money and how they influence their financial well-being. The study was carried out in one district but might be expanded to other districts. It also investigates the impact of parental investment choices, expert opinions, media, and ads on the investment decisions of female entrepreneurs. The study also investigates the influence of financial anxiety and debt on investment decisions and satisfaction.

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AN ANALYTICAL STUDY ON JOB SATISFACTION OF STAFF NURSES IN THE HEALTHCARE SECTOR OF TIRUCHIRAPALLI

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ABSTRACT

Job satisfaction among staff nurses is a crucial factor that directly influences the quality of healthcare delivery, patient outcomes, and the overall efficiency of hospital services. This study focuses on examining the level of job satisfaction of staff nurses working in the healthcare sector in Tiruchirappalli. The research aims to identify the key factors contributing to job satisfaction, including workload, salary and benefits, work environment, interpersonal relationships, opportunities for career growth, and recognition. Both primary and secondary data were used to assess the perceptions and experiences of nurses across selected hospitals in the region. The findings highlight the areas of satisfaction as well as challenges faced by staff nurses, providing valuable insights for hospital administrators and policymakers to improve working conditions, enhance motivation, and reduce turnover. The study concludes that ensuring higher levels of job satisfaction among nurses is essential for building a sustainable and effective healthcare system in Tiruchirappalli.

KEY WORDS: Job Satisfaction, influences, healthcare, perceptions, experiences

INTRODUCTION

The Health care sector is a mixture of various services associated with the medical terminology, it provides curative services to the individuals who are suffering from various health problems. The modernization around the world has brought in many advanced treatment facilities and has emerged one among the commercialized sector. This industry has many sub-divisions and depends upon highly specialized medical professionals and also trained paramedical professional to meet the needs the patients. Delivery of health-care services from medical-aid to secondary and tertiary levels of care is the foremost visible element of any health care system, both the users and also the final public. Nursing is a profession that takes care of the patients, their duty is to take care of the sick individual, families and communities so that they attain normal or recover from the disease to optimal health and lead to quality of life. Nurses is part of the health care profession, but their approach towards the patient care, is differentiate from rest of the health care providers. Their practice in a diversified areas with a special scope of practice, however, they act on the prescription of the physicians at each level, which is a traditional role, and the public image of a nurse is that of a care taker or care provider.

SIGNIFICANCE OF THE STUDY

Nurses are the back-bone of the medical industry, they are trained to provide patient care and improve their patients' quality of life, but their own Quality of Work Life (QWL) has been largely ignored. Quality of Work Life is a comprehensive and general schema, which is essential in improving specialized personnel's satisfaction and attracting and preserving personnel. It also results in positive theories such as increasing profits and provocation. There is an outcry in health services regarding the lack of quality patient care and the poor standard of service delivery. The productivity of nurses is reportedly low. Studies have shown that employees satisfaction of their QWL would not only improve their performance and reduce absenteeism, workplace accidents and job turnover, but also increase their job satisfaction and satisfaction of other aspects of life. Studies show that satisfied employees work with greater interest, are more loyal to the organization and increase productivity. Dissatisfaction among the nurses' with their own work-life can cause problems such as job dissatisfaction, emotional exhaustion, burn out and job turnover. These factors would in turn affect the quality of care provided by nurses. The organization's success in achieving its goal depends on the quality of human resources. Therefore, attention should be paid to the nurses' physical and emotional needs.

STATEMENT OF THE PROBLEM

Health care institutions, are mainly designed to care for the sick, injured and physically disabled. India's health care has taken up a new horizon, with the participation of the private sector in health care system. The private healthcare sector in India accounts for over 75 per cent of total healthcare expenditure in the country and is one of the largest in the world. The Indian health care accounts for 60 per cent hospitals, 75 per cent Dispensaries, and 80 per cent qualified doctors and paramedical staffs are in private sector. Health care services is one of the services that provide 24/7 services for the benefit of the citizens of any country. Nursing staff are the sole personnel in the health care industry who work on various shifts and keep watching the patients' health, their reports are very much useful for the physicians to advocate medicine for the well-fare of the patients. Without nursing staff the medical industry would not be able to survive.

Their quality of work life is very much essential, this is because nursing personnel are subject to psychological stress as a consequence of shift rotation extended work schedules, and prolonged contact with irritable and depressed patients. A work environment is expected to provide a safe and congenial. Where in work environment is uncongenial it would affect work and life, of the individual and also that of the family and co-workers. Here-in nurses' are very much important for health care industry. Nurses are indispensable service providers who maintain and improve patients' health. It is imperative that a health care unit has to deliver quality patient care, through maintaining wellness of the nurses. Nurses as a health care provider should enjoy quality of working life so as to be able to provide quality care to their patients. Therefore, attention should be paid to the nurses' working life and job satisfaction.

REVIEW OF LITERATURE

Castillo and Cano (2004) the result of their study among the faculty members presents that female faculty members are less satisfied, whereas, male faculty members are satisfied with their job, they have concluded that management should concentrate on the motivation factors to female faculty members.

Abbas, Premi and Jyothi (2010) The empirical study result depicts that the four dimensions are significantly correlated, and gender has no impact towards job satisfaction. Positive satisfaction levels with job are found among faculties and they would remain in their present jobs only if they have advancement opportunities closely followed by organizational prestige and financial factors.

Shahzad, Mumtaz, Hayat (2010) carried a study to find out the mediating impact of job satisfaction on the relationship of compensation and workload with academic quality in the public sector educational institutions of Pakistan. The Results of the study show that academic quality can be achieved through faculty job satisfaction and the major antecedents of job satisfaction of faculty are workload and faculty compensation, however compensation is not having any direct impact on academic quality whereas it has a significant relationship with the job satisfaction which shows that there is a mediating impact of job satisfaction on the relationship of faculty compensation and academic quality. Over all, the results of the study show that there is a positive impact of faculty compensation and negative impact of faculty work overload on the faculty satisfaction in the educational institutions.

Malik, et. al. (2010) studied the impact of teachers' satisfaction with job dimensions on perceived organizational commitment in public sector universities of Pakistan. The result of the study highlights that the satisfaction with work, quality of supervision and pay satisfaction had significant positive influence on organizational commitment of faculty members. They had high degree of organizational commitment and satisfaction with work-itself, supervision, salary, co-workers and opportunities for promotion. It was also found out that they were highly satisfied with their supervisor, co-workers, compensation, work-itself and opportunities of advancement in their universities.

Kayalvizhi, and Chokkanathan (2011) undertaken a study with an objective to determine the level of job satisfaction and to identify the major intrinsic and extrinsic sources that influence the job satisfaction of the lecturers employed in self-financing Arts colleges. The study results clearly outline that the faculty employed in arts colleges situated in Salem are highly dissatisfied with their jobs. The highlight was faculties are satisfied with the profession but not with their institution in which they are serving.

Roshan and Shergill (2012) analyzed the job satisfaction, attitude impact of job satisfaction and attitude of male and female teachers of Degree Colleges of Punjab and Haryana state. Job satisfaction among the teachers is very high. Unfavorable attitude present among teachers irrespective of the gender towards education.

OBJECTIVES OF THE STUDY

The main objective of the study is to evaluate the work life balance and job satisfaction of the staff nurses working in private hospitals in Tiruchirappalli.

1. To find out the factors influencing the job satisfaction among the nursing staffs' in Tiruchirappalli
2. To evaluate the level of satisfaction among the nursing staffs' in Tiruchirappalli
3. To inquire the problems faced by nursing staffs' in Tiruchirappalli.

Table 1
Age and Job satisfaction

Age	Respondent		Job satisfaction			
			Mean	Range		SD
	No	%		Min	Max	
25-30	77	25.7	2.92	1.96	4.33	0.69

30-35	61	20.3	3.11	1.86	3.86	0.60
35-40	42	14.0	3.14	2.24	3.98	0.59
40-45	45	15.0	2.92	2.02	3.65	0.53
45-50	21	7.0	3.61	3.05	4.38	0.50
Above 50	54	18.0	3.37	2.27	4.39	0.61
Total	300	100.0	3.12	1.86	4.39	0.64
	F val.(df:5,294)= 7.17*					

***- significant at 5 % level**

The analysis of variance showed that there is significant difference in the overall mean agreeability score on Job satisfaction among age groups of the respondents. The overall mean score ranged from 2.92 to 3.61 and it is higher in 45- 50 years of age group of respondents.

Table 2
Gender and Job Satisfaction

Gender	**Respondent**		**Job satisfaction**			
			Mean	**Range**		**SD**
	No	%		Min	Max	
Male	22	7.3	2.66	1.96	3.40	0.59
Female	278	92.7	3.16	1.86	4.39	0.63
Total	300	100.0	3.12	1.86	4.39	0.64
	Z val= 3.81* > 1.96					

***- significant at 5 % level**

The Z test showed that there is significant difference in the overall mean Agreeability score on quality of work life among gender groups of the respondents. The overall mean score ranged from 2.66 to 3.16 and it is higher in female group of respondents.

Table 3
Education and Job satisfaction

Education	**Respondent**		**Job satisfaction**			
				Range		**SD**
	No	%	**Mean**	Min	Max	
Certificate in Nursing	47	15.7	3.58	1.96	4.33	0.73
Diploma in Nursing	112	37.3	3.11	2.24	4.39	0.59
UG Degree in Nursing	100	33.3	2.90	1.86	3.86	0.56
PG Degree in Nursing	41	13.7	3.15	2.02	3.65	0.58
Total	**300**	**100.0**	**3.12**	**1.86**	**4.39**	**0.64**
	F val.(df:4,295)= 13.33**					

*** significant at 5 % level**

The analysis of variance showed that there is significant difference in the overall mean agreeability score on quality of work life score among the education qualification groups of the respondents. The overall mean score ranged from 2.90 to 3.58 and it is higher in diploma in nursing group of respondents.

Table 4
Marital Status and Job Satisfaction

Marital status	**Respondent**		**Job satisfaction**			
			Mean	**Range**		**SD**
	No	**%**		**Min**	**Max**	
Married	214	71.3	3.24	2.06	4.39	0.61
Bachelor/Spinster	46	15.3	2.83	1.96	3.68	0.65

Widow/Widower	28	9.3	2.81	1.86	3.57	0.57
Separated	12	4.0	2.79	2.02	3.29	0.58
Total	**300**	**100.0**	**3.12**	**1.86**	**4.39**	**0.64**
	F val.(df:3,296)= 9.76*					

ns- Non significant at 5 % level

The Analysis of variance showed that there is significant difference in the overall mean agreeability score on quality of work life among marital status groups of the respondents. The overall mean score ranged from 2.79 to 3.24 and it is higher in married group of respondents.

Null Hypothesis: There is no significant difference in the mean agreeability scores on involvement in academic process statements among the respondents.

Table 5

ANOVA

SOURCE	DF	S S	M S	F
Between groups	3	1.903	.634	.609 ns
Within groups	1196	1245.597	1.041	

ns- non significant at 1 % level

Since the F is significant the null hypothesis of no difference in the mean agreeability scores on involvement in academic process statements among the respondents is rejected and there is significant difference in the mean scores among respondents. The mean scores among the respondents is furnished below:

Table 6

Involvement in Professional Process

S.No.		Mean score	Rank
1	I set my clear planning for my Profession	3.44	2
2	I am encouraged to handle my profession without interruptions.	3.35	4
3	I am encouraged in the assessment of my juniors.	3.42	3
4	I have autonomy in my job	3.45	1

The above table showed that among the 4 agreeability statement on Involvement in academic process, the mean score ranged from 3.35 to 3.45 and the 'I have autonomy in my job' secured higher mean score and stood at top, followed by 'I set my clear planning for my Teaching' secured next higher mean score and stood at second, 'I am encouraged in the assessment of my wards.' has secured next higher score and stood at third and finally 'I am encouraged to handle my classes without interruptions.' secured least score and stood at last.

Null Hypothesis: There is no significant difference in the mean agreeability scores on work place values & environments statements among the respondents.

Table 7

ANOVA

	DF	S S	M S	F
Between groups	3	22.0207	7.402	6.35**
Within groups	1196	1392.540	1.165	

****- Significant at 1 % level**

Since the F is significant the null hypothesis of no difference in the mean agreeability scores on work place values & environments statements among the respondents is rejected and there is significant difference in the mean scores among respondents. The mean scores among the respondents is furnished below:

Table 8

Work Place Values & Environment

S.No		Mean score	Rank

1	I am given opportunity to participate in decision making that affects me	3.16	3
2	I feel that my job is secure	3.36	1
3	I have scope for professional development	3.30	2
4	I get proper reward for my abilities	3.01	4

The above table showed that among the 4 agreeability statement on Work place values & environment, the mean score ranged from 3.01 to 3.36 and the ‘I feel that my job is secure’ secured higher mean score and stood at top, followed by ‘I have scope for professional development’ secured next higher mean score and stood at second, ‘I am given opportunity to participate in decision making that affects me’ has secured next higher score and stood at third and finally ‘I get proper reward for my abilities’ secured least score and stood at last.

	DF	S S	M S	F
Between groups	3	35.740	11.913	11.40*
Within groups	1196	1248.807	1.045	

**- Significant at 1 % level

Since the F is significant the null hypothesis of no difference in the mean agreeability scores on performance appraisal statements among the respondents is rejected and there is significant difference in the mean scores among respondents. The mean scores among the respondents is furnished below:

Table 9
Performance Appraisal

S.No		Mean score	Rank
1	The annual review process (Performance Appraisal) is transparent.	3.02	3
2	I am clearly explained about the review process	2.97	4
3	My performance is accountable for increment and promotion.	3.24	2
4	Performance appraisal has little impact	3.40	1

The above table showed that among the 4 agreeability statement on Performance appraisal, the mean score ranged from 2.97 to 3.40 and the ‘Performance appraisal has little impact’ secured higher mean score and stood at top, followed by ‘My performance is accountable for increment and promotion.’ secured next higher mean score and stood at second, ‘The annual review process (Performance Appraisal) is transparent.’ has secured next higher score and stood at third and finally ‘I am clearly explained about the review process’ secured least score and stood at last.

Table 10
Factors- Internal to Job Satisfaction

Factors	Score		Rank
	Total	Mean	
Work Place Environment	17460	58.2	2
Compensation	11500	38.3	5
Infrastructure	15700	52.3	3
Professional Development	12220	40.7	4
Opportunity for Service to society	18120	60.4	1

Source: Primary data

It is seen from the above table that among the five factors-Internal to job satisfaction, the mean score ranges from 44.80 to 59.20 and the cause for stress from , ‘Opportunity for Service to society’ has secured higher mean score and stood at top, followed by ‘Work Place

Environment' has secured next higher score and stood at second, 'Infrastructure' has secured next higher mean score and stood at third, 'Professional Development' has secured next higher score and stood at fourth and finally 'Compensation' has secured least mean score and stood at last.

Table 11
Factors-External to Job Satisfaction

Factors	Score		Rank
	Total	Mean	
Family	17280	57.6	2
Friends	12520	41.7	5
Patients Relatives	12540	41.8	4
Respect to the Profession from General Public	15080	50.3	3
Pride of being a nurse to serve the society	17580	58.6	1

Source: Primary data

It is seen from the above table that among the five factors-External to job satisfaction, the mean score ranges from 41.70 to 57.6 and the factor, 'Pride of being a nurse to serve the society' has secured higher mean score and stood at top, followed by 'Family' has secured next higher score and stood at second, 'Respect to the Profession from General Public' has secured next higher mean score and stood at third, 'Patients Relatives' has secured next higher score and stood at fourth and finally 'Friends' has secured least mean score and stood at last.

CONCLUSION

This study reveals that while nurses play a vital role in ensuring the quality of patient care, their overall satisfaction is influenced by multiple factors such as salary, workload, work environment, recognition, and opportunities for professional growth. The findings indicate that although many nurses show commitment and dedication to their profession, challenges such as long working hours, limited career advancement, and inadequate rewards often reduce their level of satisfaction. Enhancing workplace conditions, providing fair compensation, recognizing contributions, and creating supportive management practices are crucial for retaining skilled nurses and improving service delivery. Therefore, addressing the needs and expectations of staff nurses is not only important for their personal well-being but also essential for strengthening the healthcare system in Tiruchirappalli and ensuring better patient outcomes. It is concluded that the nursing staff feel proud to be in profession and to serve the society; they have good satisfaction towards their profession.

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THE IMPACT OF ARTIFICIAL INTELLIGENCE ON THE GROWTH AND PERFORMANCE OF SMALL AND MEDIUM ENTERPRISES (SMES) WITH REFERENCE TO PUMP INDUSTRIES IN COIMBATORE

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ABSTRACT

In the changing business world, AI has found a large place in transforming business in innovation, efficiency and effectiveness, consistency, and competitiveness among the other businesses. AI has become inevitable in the growth of any organisation either small or big. In this study, the small and medium enterprises are taken to know how AI influenced in the growth and development of the organisation. For the study, 60 SMEs have been taken and data were collected by structured questionnaire distributed and interviewed in person. The collected data were analysed by using percentage analysis and correlation coefficient. The results showed that there was a huge response for the introduction of AI in SMEs in the growth and development, but with few difficulties in the implementation and adaption of AI in SMEs.

Keywords: Artificial Intelligence, Awareness of AI, Financial performance, Productivity, Adoption of AI.

INTRODUCTION

Artificial Intelligence (AI) has emerged in the world of competitiveness, in understanding the customers, their needs and wants, in driving innovation, increasing efficiency, increasing sales, improved decision making in all fields of businesses and service organisations. The importance of AI has been already implemented and developed in big and large businesses, but it is less in SMEs when compared to large organisations. In today's world, Small and Medium Enterprises (SMEs), which constitute the backbone of most economies, are increasingly recognizing the potential of AI to enhance their productivity and business performance. As AI brings automating routine processes, improving decision-making through data analytics, and enabling better customer engagement, AI technologies are reshaping the way SMEs operate and compete in both domestic and global markets.

SMEs play a vital role in economic development by contributing to employment generation, industrial output, and export growth**.** However, many SMEs face challenges such as limited financial resources, inadequate technological infrastructure, and lack of skilled manpower. In this context, the adoption of AI offers an opportunity to overcome these barriers by optimizing operations, reducing costs, and promoting innovation. Through AI-driven tools such as predictive analytics, chatbots, machine learning algorithms, and intelligent automation, SMEs can enhance productivity, improve customer satisfaction, and make informed strategic decisions. The impact of AI on the growth and performance of SMEs is therefore complicated it influences not only operational efficiency but also competitiveness, innovation capability, and long-term sustainability. As governments and industries increasingly promote digital transformation, understanding how AI affects SMEs becomes crucial for shaping supportive policies and strategies. This study tries to explore to what extent of AI adoption in the SME sector, impacts the business performance, and the challenges and opportunities associated with its implementation in their organisation.

REVIEW OF LITERATURE

According to (Wang, 2022; Wang, 2022), research focuses on understanding how financial technology influences the financing of small and micro enterprises (SMEs), which are critical to China's market economy. Small and medium-sized enterprises often struggle to obtain reasonable finance. Fintech, particularly unsecured credit loans, is a possible alternative, with new technologies such as 5G, IoT, and AI poised to improve these services. To fully exploit fintech for SME finance, it is critical to collect extensive data, strengthen the financial environment, and create machine learning models for specific industries. The study's limitation is the lack of empirical data and models, thus future research should fill this gap through data-driven analysis and model construction.

According to Anuj Kumar (2022), the research focuses on the benefits and obstacles that SMEs experience when adopting artificial intelligence. The article emphasizes the importance of upgrading organizations and improving employee abilities to adapt to technological advancements. The article discusses the challenges of using AI in various industries, as well as how customized AI solutions can boost corporate performance.

Sara I. C. Lemos (2022) found that SMEs have major change management issues when adopting AI solutions. Managing the subjective and multifaceted nature of these difficulties is essential for success. This study presents a constructivist multi-criteria analysis system using cognitive mapping and DEMATEL methodologies in a neutrosophic setting. The model categorizes major elements affecting SME adaption to AI as human resources, IT infrastructure, know-how, organizational policies, and leadership. Despite constraints such as a non-generalizable environment and a homogeneous expert panel, the study offers useful insights. Future research should address these limitations and contribute to the expanding field of AI adaption in SMEs.

STATEMENT OF THE PROBLEM

Small and Medium Enterprises (SMEs) are like the eyes of the nation, forming the growth and development of a place, people, employment, income, standard of living, contributing the whole region as well as the nation. Despite these contributions, SMEs are facing numerous challenges in finance, productivity, technology, and competition from large and global players. To eradicate these challenges, the Artificial Intelligence (AI) has come into being as a powerful tool to help SMEs and to improve their overall performance. Since large organizations have already started using AI for the automation of processes, predictive business analytics, and customer perceptions, the adoption of AI in SMEs remains slow due to certain factors such as inadequate awareness, insufficient technical knowhow, and high-cost implementation. But, since the need of AI in SMEs is unavoidable, there is a need to understand how AI influences the growth and development, and productivity, and competitiveness of SMEs. This study tries to understand the AI implementation would bring the growth and development of SMEs in the digital transformed universe.

THE OBJECTIVES OF THE STUDY

The following are objectives of the study taken by the researchers.

1. To know the level of awareness in adopting AI in Small and Medium Enterprises.
2. To study the impact of adopting AI technologies on the growth and performance of SMEs.
3. To suggest organisation for the effective utilization of AI to improve productivity and competitiveness in SMEs.

SCOPE OF THE STUDY

The study focused on the examining the impact of Artificial Intelligence (AI) on the growth and performance of Small and Medium Enterprises (SMEs) in Coimbatore. The research aims to understand how AI-based technologies are being adopted in business operations such as production, marketing, finance, human resources, and customer services in SME sector. The study also tries to understand the role of AI in operational efficiency, decision-making, technical innovation, and business competitiveness. The study is confined to a specific region, say, Coimbatore, to have an in-depth understanding of local business conditions, policy support, and technology adoption trends and if conducted in other parts of the country would bring the complete economic development of the regions and nation.

SIGNIFICANCE OF THE STUDY

The present study on "The Impact of Artificial Intelligence on the Growth and Performance of Small and Medium Enterprises (SMEs) with reference to Pump Industries in Coimbatore)" in the current digital era, and the role of AI technology in vital role in the success of the business. SMEs form the backbone of the regional and nation's economy, contributing to employment, innovation, and industrial production. To cope-up with the competition in a rapidly changing business environment, SMEs must adopt advanced technologies like Artificial Intelligence (AI) for the growth and development of the organisation and for the owners of SMEs for taking decision-making. By adopting AI technologies, organisations and other bodies associated with the organisation in designing support mechanisms, training programs, and financial incentives to promote AI adoption among SMEs.

SAMPLING DESIGN

The study conducted in Coimbatore, Coimbatore is big and fast developing city next to Chennai in Tamil Nadu. There are many manufacturing industries functioning in Coimbatore, supplying over 40-50 % of India's motor/pump production and other products. The AI technology influencing these sectors more effective, while comparing other parts of India. There are more than 600 pump industries are in Coimbatore, the researcher conducted this present study in Coimbatore by using convenient sampling method by selecting 60 SMEs, distributing, and collecting data by the structured questionnaire prepared for data collection.

ANALYSIS AND INTERPRETATION

The researcher used percentage analysis to shows the output of impact of AI on the growth of SMEs and Impact of AI on the Performance of SMEs.

Correlation coefficient used to find the relationship between the variables which taken under the impact of growth of SMEs and Impact of AI on the performance of SMEs.

Level of awareness in adopting AI in SMEs

The entire world speaks about AI implementation and impact event invariable age groups. The SMEs also implementing AI in their work place to reduce errors and to get good output from the available resources. The researcher finds the level of awareness of AI adopting in SMEs.

Table No. 1
Level of awareness of AI in SME

Sl. No.	Level of awareness	Number of sample employers	Percentage
1	Less	9	15.00
2	Moderate	18	30.00
3	High	33	55.00
	Total	60	100

Source: Computed data

The above table shows the level of awareness of AI in SMEs, out of sixty sample employers, nine (15.00%) sample respondents are felt less level of awareness of AI. Eighteen (30.00%) respondents felt moderate level of AI and remaining thirty three (55.00%) sample employers felt high level of awareness of AI. Majority (55.00%) of the sample employers felt high level awareness of AI.

Impact of AI on the Growth of SMEs

The researcher has taken five variables under the impact of AI on the growth of SMEs.

1. Enhanced Decision-Making
2. Improved Operational Efficiency
3. Market Expansion and Innovation
4. Scalability and Flexibility
5. Competitive Advantage

Table No. 2
Level of Impact of growth of SMEs.

Sl. No.	Variables	Less Impact	Normal Impact	High Impact	Total
1	Enhanced Decision-Making	12 (20.00%)	29 (48.33%)	19 (31.67%)	60
2	Improved Operational Efficiency	7 (11.67%)	32 (53.33%)	21 (35.00%)	60
3	Market Expansion and Innovation	15 (25.00%)	34 (56.67%)	11 (18.33%)	60
4	Scalability and Flexibility	10 (16.67%)	35 (58.33%)	15 (25.00%)	60
5	Competitive Advantage	8 (13.33%)	19 (31.67%)	33 (55.00%)	60

The researcher has taken 60 SME for this study, the impact of AI on the growth of the SME were taken, the above table shows the level of growth because of AI in SMEs.

Enhanced decision – making

Out of 60 samples, twelve (20.00%) employers felt less impact. Twenty nine (48.33%) employers felt normal impact and remaining nineteen (31.67%) sample employers felt high impact. Majority (48.33%) of the sample respondents felt **normal impact** of AI in enhanced decision making.

Improved Operational Efficiency

Out of 60 samples, seven (11.67%) sample employers felt less impact. Thirty two (53.33%) employers felt normal impact and remaining twenty one (35.00%) sample employers felt high impact. Majority (53.33%) of the sample respondents felt **normal impact** of AI in improved operational efficiency.

Market expansion and Innovation

Out of 60 samples, fifteen (25.00%) sample employers felt less impact. Thirty four (56.67%) employers felt normal impact and remaining eleven (18.33%) sample employers felt high impact. Majority (56.67%) of the sample respondents felt **normal impact** of AI in enhanced market expansion an innovation.

Scalability and Flexibility

Out of 60 samples, ten (16.67%) sample employers felt less impact. Thirty five (58.33%) employers felt normal impact and remaining fifteen (25.00%) sample employers felt high impact. Majority (58.33%) of the sample respondents felt **normal impact** of AI in scalability and flexibility.

Competitive Advantage

Out of 60 samples, eight (13.33%) sample employers felt less impact. Nineteen (31.67%) employers felt normal impact and remaining thirty three (55.00%) sample employers felt high impact. Majority (58.33%) of the sample respondents felt **high impact** of AI in scalability and flexibility.

Table No. 3

Correlation : Relationship between : Enhanced Decision-Making, Improved Operational Efficiency, Market Expansion and Innovation, Scalability and Flexibility and Competitive Advantage

		Enhanced Decision-Making	Improved Operational Efficiency	Market Expansion and Innovation	Scalability and Flexibility	Competitive Advantage
Enhanced Decision-Making	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	60				
Improved Operational Efficiency	Pearson Correlation	.930**	1			
	Sig. (2-tailed)	.001				
	N	60	60			
Market Expansion and Innovation	Pearson Correlation	.841**	.788*	1		
	Sig. (2-tailed)	.001	.00`			
	N	60	60	60		
Scalability and Flexibility	Pearson Correlation	.755**	.316	.827*	1	
	Sig. (2-tailed)	.001	.279	.001		
	N	60	60	60	60	
Competitive Advantage	Pearson Correlation	.803**	.883*	.993**	.263	1
	Sig. (2-tailed)	.001	.001	60	60	
	N	60	60	60	60	60

*. Correlation is significant at the 0.05 level (2-tailed).

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

Improved operational efficiency (0.930), market expansion and innovation (0.841), scalability and flexibility (0.755) and competitive advantage (0.803) has positive and significant relationship with enhanced decision making at 1% significant level.

Market expansion and innovation (0.788) has positive and significant relationship with improved operational efficiency at 1% significant level.

Competitive advantage (0.883) has positive and significant relationship with improved operational efficiency at 5% significant level.

Scalability and flexibility (0.827) has positive and significant relationship with Market Expansion and Innovation at 5% significant level.

Competitive advantages (0.993) has positive and significant relationship with Market Expansion and Innovation at 1% significant level.

It concluded that the Impact of AI on the Growth of SMEs are more relevant and inter relationship with variables.

Impact of AI on the Performance of SMEs

1. Financial Performance
2. Productivity Enhancement
3. Customer Satisfaction
4. Employee Performance
5. Risk Management

Table No. 4
Impact of AI on the Performance of SMEs

Sl. No.	Variables	Less Impact	Normal Impact	High Impact	Total
1	Financial Performance	28 (46.67%)	20 (33.33%)	12 (20.00%)	60
2	Productivity Enhancement	16 (26.67%)	24 (40.00%)	20 (33.33%)	60
3	Customer Satisfaction	21 (35.00%)	32 (53.33%)	7 (11.67%)	60
4	Employee Performance	32 (53.33%)	20 (33.33%)	8 (13.34%)	60
5	Risk Management	11 (18.33%)	32 (53.33%)	17 (28.34%)	60

Source: Computed data

Financial Performance

Out of 60 samples, twenty eight (46.67%) employers felt less impact. Twenty (33.33%) employers felt normal impact and remaining twelve (20.00%) sample employers felt high impact. Majority (46.67%) of the sample respondents felt **less impact** of AI in financial performance. It concluded that AI is not playing major role in financial performance.

Productivity Enhancement

Out of 60 samples, sixteen (26.67%) employers felt less impact. Twenty four (40.00%) employers felt normal impact and remaining twenty (33.33%) sample employers felt high impact. Majority (40.00%) of the sample respondents felt **normal impact** of AI in enhanced decision making.

Customer Satisfaction

Out of 60 samples, twenty one (35.00%) employers felt less impact. Thirty two (53.33%) employers felt normal impact and remaining seven (11.67%) sample employers felt high impact. Majority (53.33%) of the sample respondents felt **normal impact** of AI in customer satisfaction.

Employee performance

Out of 60 samples, thirty two (53.33%) employers felt less impact. Twenty (33.33%) employers felt normal impact and remaining eight (13.34%) sample employers felt high impact. Majority (53.33%) of the sample respondents felt **less impact** of AI in financial performance. It concluded that AI is not playing major role in financial performance.

Risk Management

Out of 60 samples, eleven (18.33%) employers felt less impact. Thirty two (53.33%) employers felt normal impact and remaining seventeen (28.34%) sample employers felt high impact. Majority (53.33%) of the sample respondents felt **normal impact** of AI in risk management. It concluded that AI is not playing major role in risk management.

Table No. 5

Correlation : Relationship between : Financial Performance, Productivity Enhancement, Customer Satisfaction, Employee Performance and Risk Management

		Financial Performance	Productivity Enhancement	Customer Satisfaction	Employee Performance	Risk Management
Financial Performance	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	60				
Productivity Enhancement	Pearson Correlation	.372	1			
	Sig. (2-tailed)	.121				
	N	60	60			
Customer Satisfaction	Pearson Correlation	.563	.811*	1		
	Sig. (2-tailed)	.271	.001			
	N	60	60	60		
Employee Performance	Pearson Correlation	.852**	.783**	.313	1	
	Sig. (2-tailed)	.001	.001	.173		
	N	60	60	60	60	
Risk Management	Pearson Correlation	.795**	.288	.137	.173	1
	Sig. (2-tailed)	.001	.271	.296	.228	
	N	60	60	60	60	60

*. Correlation is significant at the 0.05 level (2-tailed).

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

Employees' performance (0.852) and risk management (0.795) has positive and significant relationship with financial performance at 1% significant level.

Employees' performance (0.783) has positive and significant relationship with productivity enhancement at 1% significant level.

Customer satisfaction (0.811) has positive and significant relationship with productivity enhancement at 5% significant level.

SUMMARY OF FINDINGS

The following are the summary of findings of the study

1. Automation (robotics, CNC with AI), process optimization and intelligent scheduling reduce cycle times and increase throughput.

2. Condition-monitoring sensors + AI models predict failures (vibration, temperature), enabling planned repairs and longer MTBF.
3. Computer-vision systems find surface defects, dimensional errors and welding faults faster and more consistently than manual inspection.
4. Demand forecasting and inventory-optimization algorithms reduce stock outs and excess inventory especially valuable for spare parts and components.
5. AI optimizes motor control, process parameters and shop-floor scheduling to lower energy consumption per unit. Pump manufacturers (motors, test rigs) see direct savings.
6. Majority of the SMEs are highly aware of the AI technology.
7. AI adoption improves the operational efficiency and customer satisfaction.
8. The major barriers in implementing AI are the cost, lack of skilled manpower, and limited expertise.

SUGGESTIONS FOR THE SMES

The following are some of the suggestions given to the organisation management in implementing the AI in SMEs.

1. The SMEs should begin implementing Artificial Intelligence in specific areas such as customer service such as chatbots, data management, or inventory control before implementing to more complex operations.
2. The organization should arrange for training programs to develop employee awareness and technical skills in AI tools, data analytics, and automation. Skilled employees can help the organization make better use of AI applications in their operations.
3. SMEs should collaborate with AI solution providers, research institutions, or startups to gain access to advanced tools and technical expertise at affordable costs and in innovation and knowledge sharing.
4. SMEs should take advantage of government schemes such as the Digital MSME program and Startup India for grants, and digital transformation initiatives that promote AI adoption in the organisation.
5. AI systems heavily rely on data, so SMEs must protect the data quality, storage of sensitive data, and protection against cyber threats to maintain customer trust.
6. Employees should be encouraged to test AI-based solutions to enhance efficiency and customer satisfaction.
7. The performance of AI tools has to be measured the effectiveness in improving productivity, sales, and customer experience, which helps in making informed future investment decisions.
8. The hardware, software, and network systems have to be updated to support AI-powered applications to work effectively.
9. AI-driven business analytics could be used to understand the customer preferences, predict the market trends, and marketing strategies to increase the sales and to improve the customer trustworthiness.
10. SMEs should create a long-term roadmap to AI initiatives with their business goals to achieve sustainable growth, development, and competitiveness in the market.

CONCLUSION

The study on “The Impact of Artificial Intelligence on the Growth and Performance of Small and Medium Enterprises (SMEs) in Coimbatore” has given an insight in the performance of the organisation after the implementation of the AI in SMEs in automation, decision-making, business analytics, market research, and customer satisfaction. Though there are barriers in implementing AI in SMEs like cost, unskilled employees, rules and regulations, data quality, and cultural resistance, implementing AI for potentials to transform SMEs by improving efficiency, reducing costs, and enabling innovation in organisation. Since government also supports implementing AI in SMEs by providing grants and supports from AI providers, SMEs can implement AI in all the operations in their organisation. Finally, by creating awareness among the employees, training in AI technologies, support from government, partnering the AI providers, AI could be implemented successfully in SMEs in the digitally transformed world.

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AN INVESTIGATION INTO THE MECHANISMS OF FARMING SUGARCANE CULTIVATION IN THE ERODE DISTRICTS OF TAMIL NADU

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ABSTRACT

India's agricultural sector has been marked by low salaries, a skewed distribution of land, a huge labor supply relative to demand, and little opportunities for subsistence. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other public works initiatives, along with the rise in rural-to-urban migration, have caused significant changes in this sector in recent years. Wages in agriculture have increased as a result of the program. Due to the lack of farm labor, agricultural salaries have increased. The need for labor is primarily seasonal because agriculture is typically a seasonal activity. The main consequences of the labour shortage in agriculture are the delay in field operations, change in cropping pattern, degradation of quality of products and low market price. It has been found that farmers suffer because of labour shortage during peak period of agricultural operations (field preparation to harvesting to post-harvest). To overcome labour shortage in the agriculture, farmers have adopted such strategies as obtaining labour from outside the village, giving contract for farm work, share-farming and farm mechanisation.

KEY WORDS: Agriculture, Labour, Supply, Cropping, Market Price**.**

INTRODUCTION

India's agricultural sector has been marked by low salaries, a skewed distribution of land, a huge labor supply relative to demand, and little opportunities for subsistence. The Mahatma Gandhi National Rural Employment Guarantee Scheme (MGNREGS) and other public works initiatives, along with the rise in rural-to-urban migration, have caused significant changes in this sector in recent years. Wages in agriculture have increased as a result of the program. Due to the lack of farm labor, agricultural salaries have increased. The need for labor is primarily seasonal because agriculture is typically a seasonal activity. During lean seasons, landless, tiny, and marginal farmers (as family laborers) in rural areas provide labor to supplement their meager agricultural revenue. As of right now, agricultural areas and regions with high seasonal labor demand have seen a significant shift in the scenario. Although farm mechanization could significantly lower the labor need, it is dependent on migrant labor from labor surplus states.

The necessity of automation

i) Power from farms

Manual labor, draught animals, tractors, agricultural tools, implements, equipment, and machinery—all necessary farm inputs—make up this category. The annual cost of farm electricity, labor, draft animals, fuel, and machine depreciation in any agricultural production system is significantly higher than the cost of other inputs like seeds and agrochemicals. Inadequate utilization of farm electricity, low worker productivity, and/or labor scarcity have negatively impacted agricultural production and food security in many developing nations.

The term "mechanization" is frequently misinterpreted, and its true goal—increasing labor and land productivity—is little understood. In actuality, an agricultural technology plan, which is a component of an overall agricultural development strategy, should include an agricultural mechanization strategy. The following is a summary of the three main goals of mechanization in this context:

ii) A rise in worker productivity

The introduction of machines to replace labor and increase labor efficiency is linked to labor migration for jobs in other economic sectors or to enable the cultivation of a bigger area with the same work force.

iii) A rise in the productivity of land

Increasing production on the available land is the goal of mechanization. In order to increase land productivity—for instance, by introducing pump sets or accelerating turnaround times to increase cropping intensity—machinery is a complementing input.

iv) A reduction in production costs

A machine's introduction could reduce manufacturing costs or counteract rising manpower or draft animal costs. Reductions in danger and timeliness, as well as a decrease in the tediousness of farm labor, may offer further advantages to the user.

Mechanization's significance in sugarcane production

One of the most significant cash crops and a key component of the Indian economy is sugarcane. A total of 192.67 lakh tonnes of sugar are produced from 42.45 lakh hectares of sugarcane cultivation. One of the biggest producers of sugar, India and Brazil are vying for the top spot. India has roughly 13.25 and 41.11 percent of the world's total sugar production, and 41.11 percent in Asia.

Uttar Pradesh has the largest sugarcane plantation in India, with 21.4 lakh hectares. Madhya Pradesh has the lowest productivity in the nation (39.3 MT/ha), while Tamil Nadu has the greatest (140 MT/ha).

In terms of the nation's total sugarcane production and cultivated area, Tamil Nadu comes in third and fifth, respectively. It accounts for about 10% of the nation's total sugar production and is one of the state's major commercial crops. About 36.34 million tonnes of sugarcane, with an average yield of 110 t/ha, are produced in Tamil Nadu on about 3 lakh hectares of land, of which 65% is planted and 35% is cultivated as ratoon crop. Sugar, gur, jaggery, khandsari, ethanol, and other items are made with it.

OBJECTIVES OF THE STUDY

1. To examine the sugarcane growers' characteristics
2. To evaluate the degree of farm mechanization awareness and expertise in sugarcane production
3. To determine how much sugarcane growers use farm equipment
4. To investigate the connection between profile traits and farm equipment awareness and usage.

5. To develop and assess sugarcane growers' attitudes on farm mechanization in sugarcane production.

THE STUDY'S SCOPE AND SIGNIFICANCE

Agricultural mechanization refers to the use of different power sources and better farm tools and equipment in order to lessen the labor-intensive tasks performed by humans and draught animals, improve cropping intensity, precision, and timeliness of the efficient use of various crop inputs, and minimize losses at various stages of crop production. The ultimate goal of farm mechanization is to increase total output and productivity while lowering production costs. It is an excellent option for farmers who want to earn more money.

LIMITATIONS OF THE STUDY

The study had the time, resource, and facility constraints that a student researcher would typically face. Nonetheless, sufficient care was taken to ensure that the research was as methodical, objective, and scientific as feasible.

METHODOLOGY

A solid theoretical foundation is essential to the success of any research endeavor. It centers on the three pillars of the research study: plan, structure, and strategy. Everything the researcher undertakes, from choosing the study problem to the last data analysis, is included in the plan. The process of combining the variables under inquiry into a coherent piece of analysis is known as the structure. The particular techniques utilized to collect the data, analyze it, confirm its accuracy, and interpret the findings are referred to as the strategy.

The research techniques and processes used in this study are explained in this chapter. The following subheadings include the grouping and presentation of the methodology.

- Research location
- An explanation of the research area
- Design of research
- Variable selection, operationalization, and measurement
- Technique for gathering data
- Utilized statistical tools
- Conceptual framework

Selection of District

The Tamil Nadu seasonal crop report included the district-specific sugarcane area and production. Erode district was purposefully chosen for the study out of all 32 districts in Tamil Nadu, taking into account the largest area under sugarcane farming. In Tamil Nadu, Erode district ranked top and second for both area and sugarcane production.

Choice of Block

The "block list" for Erode can refer to its administrative divisions, which are the 10 taluks and 20 block panchayats that make up the district. The taluks are Erode, Modakkurichi, Kodumudi, Perundurai, Bhavani, Anthiyur, Gobichettipalayam, Sathyamangalam, Thalavadi, and Nambiyur. The 20 blocks include taluks like Thalavadi and T.N. Palayam, among others.

Table 1

List of the Selected Blocks

Sl.No	Name of District	Name of Blocks
		Ammapet
		Anthiyur
		Bhavani
		Bhavanisagar,

1.	**Erode**	Chennimalai
		Gobichettipalayam
		Kodumudi
		Modakurichi
		Nambiyur
		Perundurai
		Sathyamangalam
		Talavadi
		Thoockanaickenpalayam

SELECTION OF REVENUE VILLAGES

Three revenue villages were selected from each block and accordingly 9 revenue villages were selected from two blocks of each district. Thus, a total of 12 revenue villages were selected.

Table 2
List of selected revenue villages

Sl.No	**District**	**Block**	**Selected revenue villages**
1.	**Erode**	**Bhavani**	Jambai
			Varadhanallur
			Bhavani
			Paruvachi
		Gobichettipalayam	P.Mettupalayam
			Kugalur
			Perunthaliyur
			Alukuli
		Sathyamangalam	Sikkarasampalayam
			Ikkarainegamam
			Allathukkombai
			Arasur

Respondent selection

Considering the researcher's restrictions, a sample size of 100 responders from each block was taken into consideration for the study. A total of 250 sugarcane growers were chosen to participate in the study. Using the following formula, the number of respondents from each chosen block was determined using the proportionate random sampling method.

$$ni = \frac{Ni}{N} \times n$$

Where,

ni = Number of respondents to be selected from the i^{th} village

Ni = Number of respondents in the i^{th} village

N = Total number of respondents in the three villages

N = Total number of respondents to be selected from the three villages

Table 3
Distribution of the sample size

Sl.No	District	Block	Selected revenue villages	Population Size	Sample Size
1.	**Erode**	**Bhavani**	Jambai	617	21
			Varadhanallur	439	15
			Bhavani	393	14
			Paruvachi	150	20
		Gobichettipalayam	P.Mettupalayam	473	14
			Kugalur	594	18
			Perunthaliyur	617	18
			Alukuli	236	16
		Sathyamangalam	Sikkarasampalayam	256	22
			Ikkarainegamam	184	19
			Allathukkombai	238	24
			Arasur	260	28

Source: Primary records from Assistant Director of Agriculture (20011-12), Erode.

Agriculture

The district's residents work primarily in agriculture. Paddy, turmeric, millets, sugarcane, pulses, oil seeds, and cotton are the district's main crops. Table 5 shows the areas covered by various crops.

Table 4
Total area under different crops in Erode district

S.No.	Crops	Area (ha)
1.	Paddy	34,335
2.	Turmeric	65,604
3.	Millets and other cereals	40,130
4.	Pulses	3,985
5.	Sugarcane	30,385
6.	Ground nut	18,444
7.	Cotton	733
8.	Gingelly	7.857

Source: Primary records from Joint Director of Agriculture (Erode District, 20011-12)

The study's research design

Selection, operationalization and measurement of variables

Selection of independent variables

After reviewing the literature and consulting with experts, a set of independent variables pertinent to the goals and nature of the study were first chosen. 34 independent variables have been found that may have an impact on the dependent variables. On a three-point continuum, the seasoned and senior behavioral scientists and farm scientists were asked to assess each variable's level of relevance. The "relevant," "somewhat relevant," and "not relevant" comments received scores of 3, 2, and 1, respectively.

The mean and coefficient of variation for each independent variable were calculated based on the judges' ratings. Additionally, the coefficient of variations and overall mean were calculated. The following criteria were applied for choosing the variables.

- The mean of each variable should be higher than the total mean. Mean for each individual > Mean for the total
- The coefficient of variation (CV) for each individual variable should be lower than the overall CV.

Individual CV < Overall CV

18 variables were chosen from the judges' assessments using this method. Table 8 provides an overview of the chosen factors and how they were measured. The chosen variables are displayed in the table along with their mean value and CV.

Operationalization and measurement of independent variables

Age

Chronological age was used as the measure, and age was operationalized as the number of years completed by the respondents at the time of inquiry. According to Trivedi (1963) and Pauline (2012), the respondents were divided into three groups: young, middle-aged, and old. These groups are listed below.

S. No	***Categories***	**Age**	**Scores**
1.	Young	Upto 35 years	1
2.	Middle	Above 35 upto 45 years	2
3.	Old	***Above 45 years***	3

Educational status

In this study, "educational status" refers to the respondent's years of formal schooling at the time of inquiry. The sub-items included primary school education, middle school education, secondary education, college education, functionally literacy, and illiteracy. A person who lacked the ability to read and write was considered illiterate. A person who could read and write was considered functionally literate. Formal education up to the fifth standard was referred to as primary school education.

The scoring procedure developed by Mansingh (1993) and followed by Anitha Pauline (2011) was used in this study.

S.No.	**Category**	**Score**
1.	Illiterate	1
2.	Functionally literate	2
3.	Primary school education	3
4.	Middle school education	4
5.	Secondary school education	5
6.	Collegiate education	6

Occupational status

It has been defined as the occupation in which a person invests a significant amount of time, money, and resources in order to improve their standard of living and support their family. This study employed a slightly modified version of Mansingh's (1993) scoring methodology.

S.NO	Category	Score
1.	Farming alone	4
2.	Farming + wage earner	3
3.	Farming + business	2
4.	Farming + service	1

Farm size

Farm size is defined as the amount of land that a single farmer owns and cultivates. To determine the total area of land, the conversion process outlined in the Tamil Nadu Government notification rules of new project (1974) was used, which equates two acres of dry land to an area of irrigated land. According to Subramanian (2000), the respondents' farms were divided into four groups.

Sl.No.	*Category*	Score
1.	Up to 2.51 acre (Marginal)	1
2.	2.51-5.02 acre (Small)	2
3.	5.02-10.01 acre (Medium)	3
4.	Above10.01 acre (High)	4

Experience farming

Farming experience was defined as the number of years that the respondent had been engaged in agricultural practice at the time of the inquiry. Based on cumulative frequency, the respondents were divided into three groups: low, medium, and high. This study employed Arulmurugan's (2000) scoring methodology.

Sl.No.	Category	Year	Score
1.	Low	Up to 10 years	1
2.	Medium	11- 20 years	2
3.	High	Above 20 years	3

Area used for sugarcane production

In this survey, "area under sugarcane" meant the percentage of the respondent's entire farm that was planted to sugarcane. This was computed as follows.

$$\text{Area under sugarcane} = \frac{\text{Area under sugarcane cultivation (in acres) x 100}}{\text{Total area of the farm}}$$

Using the cumulative frequency method, the respondents were further divided into low, middle, and high categories. For this study, Jayashree's (2004) grading methodology was applied.

Annual Earnings

The respondent's gross earnings from both agriculture and other occupations during the investigation period were referred to as their annual income. According to Persis (2007), the respondents were categorized as low, middle, and high.

Sl.No.	Category	Amount (Rs)	Score
1.	Low	(< Rs 30,000)	1
2.	Medium	(Rs.30,000 - 60,000)	2
3.	High	(>Rs.60, 000)	3

Finally the respondents were classified in to low, medium and high using cumulative frequency method.

Inventiveness

According to Roger and Shoemaker (1971), innovativeness is the extent to which a person adopts new ideas more quickly than other members of a social system. This study used Marimuthu's (2001) scoring methodology.

When would you like to switch to a better farming method?

Sl No.	Category	Score
1.	As soon as it is brought to your knowledge	3
2.	After you have seen other farmers have tried successfully in their firms	2
3.	You prefer to wait and take your own time	1

Utilization of information sources

The frequency with which the respondents used the three main information sources—institutional, non-institutional, and media—was referred to as information source utilization in this study. In this study, the Madhivanane (1990) scoring method was applied with the necessary adjustments. The responders received ratings of 3, 2, and 1 for "frequently," "sometimes," and "never," respectively

Participation in society

This was a reference to a person's level of participation in a formal organization, either as an office bearer or a member. This study employed Seethalakshmi's (1999) grading method. The following is the scoring method used:

Nature of participation	Score
Member in the Past	1
Office bearer in the past	2
Member at present	3
Office bearer at present	4

Financial incentives

Supe (1969) defined economic motivation as a farmer's relative worth of economic aims and their professional achievement in terms of maximizing profits. Supe's (1969) scale and Pandiyarajan's (1994) scale were used to measure it. Out of the six statements on the scale, only the final one was negative. The following scoring method was used:

Response	Strongly agree	Agree	Undecided	Disagree	Strongly agree
Positive statement	7	5	4	3	1
Negative statement	1	3	4	5	7

Involvement in training pertaining to farm machinery

The number of trainings that the respondents had actually attended at the time of inquiry was referred to in this study as "training undergone." This study employed Ponmani's (1993) scoring methodology. For missing the event, one point was awarded.

Training, plus an extra point for each training session completed. The following scoring method was used.

Availability of labor

The amount of labor available in a timely manner to perform agricultural operations, as well as the operation of farm equipment, including machinery, tools, and implements, as well as labor for maintenance and repairs, is referred to as labor availability. Scores of 3, 2, and 1 were assigned to the categories of availability, readily available, not readily available, and not at all available. This study employed Anitha Pauline's (2012) grading methodology.

S.No.	Availability	Score
1.	Readily available	3
2.	Not readily available	2
3.	Not at all available	1

Understanding of farm automation in sugarcane production

Sugarcane growers' level of knowledge on farm mechanization in sugarcane growing was assessed. According to Bloom et al. (1985), knowledge is defined as behaviors and test scenarios that highlight the recall or recognition of concepts, objects, or phenomena. One of the key elements of behavior is knowledge, which is essential to the adoption of better habits.

Final set of attitude items selected with corresponding S and Q values and the nature of statement

S. No.	Stateme nt No.	Scale Value	Q Value	Statement	Nature of the statement
1.	11	4.890	0.606	Farm mechanization will solve the problem of labour scarcity	Favourable
2.	16	1.531	1.053	High maintenance cost of machinery pose a threat to farm mechanization	Unfavourable
3.	22	4.080	0.691	Farm mechanization reduces the drudgery on human beings	Favourable
4.	44	3.980	0.740	Farm mechanization has made significant contribution in enhancing cropping intensity	Favourable
5.	49	2.793	0.917	Farm mechanization is a male dominated technology	Unfavourable
6.	17	2.220	0.809	Farm mechanization is uneconomical for small land holdings	Unfavourable
7.	19	2.050	0.995	Heavy financial investment is needed to mechanize a farm	Unfavourable
8.	40	3.570	0.625	Farm mechanization helps in effective utilization of inputs	Favourable
9.	20	1.040	0.540	Farm mechanization leads to migration of agricultural labourers	Unfavourable

The scale's dependability

The "split-half" method was used to assess the scale's dependability. Many people believe that the split-half method is the most effective way to measure reliability (Garrett and Woodworth, 1973). Using the odd-even method, the nine chosen attitude items were split into two equal halves (Singh, 1986). Thirty farmers in a non-sample area received the two halves individually. The reliability of the half-test was determined by applying the product moment correlation test to the scores. At the five percent probability level, the half-test reliability coefficient (r) of 0.570 was significant. Additionally, the Spearman-Brown prophecy method was used to calculate the test's overall reliability coefficient. The overall test reliability (rtt) was 0.726. Singh (1986) states that a reliability coefficient of 0.50 or 0.60 would be adequate when the two groups' mean scores are within a small range. Because the rtt was higher than 0.60, the created scale is therefore trustworthy.

Farm mechanization's effects

In this study, a framework was created. This approach included crop-specific, environmental, social, economic, and physical aspects of advantages and issues. There are three to seven assertions for each dimension, each of which represents a different level of influence. The answers were collected on a two-point continuum, with "Yes" and "No" receiving scores of two and one, respectively.

Sugarcane growers' challenges

Limitations on the use of farm equipment and machinery based on sugarcane The issues that sugarcane growers faced when using farm mechanization in sugarcane cultivation were examined using the Garrette ranking system. The sugarcane growers were asked to rank their perceived problems. The following formula was used to translate the respondents' order of merit for the various issues into rankings.

$$\text{Percent position} = \frac{100\,(R_{ij} - 0.5)}{N}$$

Where

R is the rank that the jth person assigned to the ith factor.

N is the number of factors ranked by the jth person.

The calculated % positions were transformed into scores by consulting Garrett's table . The mean value was then determined by adding each person's scores for each factor. The order of the means was downward. The constraint deemed most significant had the greatest mean value score.

Statistical tools used

The data gathered were quantified and tabulated for statistical analysis.
The following statistical techniques were applied for the study.

1. Percentage analysis
2. Mean and standard deviation
3. Cumulative frequency
4. Correlation analysis
5. Multiple regression analysis
6. Garrette ranking

Distribution of respondents based on their overall Knowledge on farm equipment

(n=200)

S.No.	Category	Number	Per cent
1.	Low	36	18.00
2.	Medium	113	56.50
3.	High	51	25.50
	Total	**200**	**100.00**

Demonstrates that the majority of respondents (56.50%) had a medium level of knowledge, followed by those with high and low levels of expertise (25.50% and 18%, respectively). It may be inferred that a greater proportion of respondents (82.00%) possessed medium to high levels of expertise on farm equipment and machinery based on sugarcane.

Distribution of respondents according to overall extent of utilization on farm equipment

(n=200)

S.No.	Category	Number	Per cent
1.	Low	30	15.00
2.	Medium	138	69.00
3.	High	32	16.00
	Total	**200**	**100.00**

The majority of sugarcane growers (69.000%) used farm equipment at a medium level, followed by 16.00% who used it at a high level and 15.00% who used it at a low level. The majority of responders had medium to high levels of use, which makes sense.

Distribution of sugarcane growers based on their attitude towards farm mechanization

(n=200)

S.No	Category	Number	Per cent
1.	Less favourable	51	25.50
2.	Moderately favourable	111	55.50
3.	Highly favourable	38	19.00
	Total	**200**	**100.00**

As can be seen from the above table, almost two-thirds of farmers had moderately to highly favorable attitudes regarding mechanization, while the remaining farmers had less favorable attitudes. As a result, respondents' attitudes regarding farm mechanization were rather positive. This suggests a very positive view of farm mechanization as one of the best ways to increase labor and land productivity. The respondents' less positive attitudes may be caused by their incapacity to recognize the effects of mechanization on their own farms, low use of information sources, and inadequate revenue.

Suggestions for popularizing farm equipment (n=200)

S.No.	Suggestions	Number	Per cent
1.	Availability of farm implements for hire by the cooperative society at government fixed rate	200	100.00
2.	Providing credit facilities to the small and marginal farmers in purchasing of farm implements	199	99.50
3.	Avoid interfere of agent in hiring farm implements	200	100.00

4.	Providing subsidies to farmers	197	98.50
5.	Training programmes on sugarcane based farm implements	189	94.50

CONCLUSION

India's agricultural sector has been marked by low salaries, a skewed distribution of land, a high labor supply relative to demand, and few opportunities for making a living. Although farm technology might significantly lower the labor requirement, the agriculture in areas/regions with high seasonal labor demand peaks was entirely dependent on migrant labor from labor surplus states. Delays in field activities, altered cropping patterns, declining product quality, and poor market prices are the primary effects of the labor shortage in agriculture. It has been discovered that labor shortages during the busiest times of agricultural operations—from field preparation to harvesting to post-harvest—cause farmers to suffer.

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A STUDY ON REASON FOR BUYING NEW HOME APPLIANCES IN ONLINE

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ABSTRACT

Due to variables including price, convenience, technological developments, and digital literacy, e-commerce has grown rapidly, revolutionising the way consumers buy home appliances. This study examines why people buy home appliances online, paying particular attention to elements like cost-effectiveness, simplicity of use, trust, and flexible payment choices. There are clear regional differences, with semi-urban and rural purchasers emphasising affordability and necessity while urban consumers prioritise house improvements and status. Descriptive analysis, chi-square testing, and correlation analysis are used in the study to find important connections between demographic characteristics like location and buying reasons. The results highlight the significance of region-specific marketing tactics, efforts to foster trust, and improved user experiences in e-commerce platforms. The report emphasises how changing consumer preferences—which have been accelerated by the COVID-19 epidemic and modified by digital transformation—offer useful information for companies looking to improve customer satisfaction, optimize their strategies, and increase the long-term sustainability of online shopping platforms.

KEYWORDS: e-commerce, online shopping, home appliances, digital literacy, customer behaviour,

INTRODUCTION

E-commerce's explosive expansion has revolutionised the way people buy home appliances by providing unmatched convenience, a greater range of options, and affordable prices. Traditional retail environments are being altered by the rise of online platforms as a popular place to purchase. Numerous causes, such as technological improvements, digital literacy, and the growing use of smart phones and the internet, might be blamed for this change in customer behaviour. This trend is further fuelled by the simplicity of product comparison, the availability of thorough evaluations, and the presence of alluring discounts. Once thought of as large purchases that were often made in-store, home appliances are now being bought online thanks to the improved consumer experience offered by e-commerce platforms. These platforms are a desirable option for contemporary consumers since they cater to a variety of customer needs, including hassle-free returns, doorstep delivery, and flexible payment methods. This trend has also been accelerated by the COVID-19 epidemic, as many consumers are now purchasing online in order to comply with social distancing standards. With an emphasis on the main drivers, inclinations, and perceived advantages, this study attempts to investigate why consumers choose to purchase household appliances online. By examining these variables, the study aims to offer insightful information on how consumer behaviour is changing in the digital age, helping companies better match their tactics to what customers want.

SCOPE OF THE STUDY

The factors influencing consumers' decisions to buy new home appliances online are investigated in this study. The scope includes a thorough examination of customer preferences, motives, and behaviours, providing insights into how online buying are changing. It focuses on important factors that help explain why e-commerce is becoming more and more popular than traditional retail establishments, including convenience, price methods, product diversity, customer evaluations, and promotional offers. The study also looks at how digital literacy, technology adoption, and socio demographic variables like geography, income, and age affect online buying decisions.

The study also explores how online purchasing features including flexible payment methods, tools for comparing products, delivery services, and return policies affect customer loyalty and happiness. The scope also includes comprehending how the COVID-19 epidemic accelerated the trend towards online shopping and its long-term effects on consumer behaviour. By concentrating on these aspects, this study offers useful information to marketers, home appliance makers, and e-commerce companies. It points out areas where online retail methods need to be improved and finds ways to improve consumer satisfaction and increase sales. The results are intended to inform practical applications in the e-commerce sector and add to the scholarly conversation on digital consumer behaviour.

REVIEWS OF LITERATURE

Chiu et al. (2014) investigated how ease, perceived value, and trust affected consumers' online purchasing decisions. Their research showed that value and convenience had a big impact on people's decisions to buy home appliances online, highlighting the significance of clear pricing and user-friendly interfaces.

Chevalier and Mayzlin (2006) examined the influence of online reviews on consumers' decisions to buy. Positive evaluations boost consumer trust and have a big impact on buying expensive products like home appliances, according to their results.

According to Kim and Lennon (2013), consumer satisfaction and their propensity to buy home appliances online are directly impacted by elements including website design, convenience of use, and safe payment methods.

Grewal et al. (2010) looked into how promotions and discounts affected customers' decisions to buy. They came to the conclusion that price reductions are a major factor in online home appliance sales.

Venkatesh et al. (2012) investigated how technology is being used for online buying. Their research highlighted how consumer preference for e-commerce platforms is greatly influenced by digital literacy and simplicity of use of technology.

Sheth (2020) examined how online buying patterns were accelerated by the epidemic. The study found that the main reasons people buy household appliances online are convenience and safety concerns.

According to Forsythe et al. (2006), consumers' decisions to purchase home appliances online are influenced by perceived risks, such as worries about product quality and safe transactions. Product comparison tools on e-commerce platforms empower customers and have a favourable impact on their decision-making process, particularly for expensive items like appliances,

According to Shankar et al. (2011). Gefen et al. (2003) showed that a major factor influencing consumer behaviour when making purchases is faith in e-commerce platforms, especially when it comes to durable goods like household appliances.

Mangold and Faulds (2009) investigated how social media sites affect people's decisions to buy. Their research showed that social media ads and recommendations have a big influence on online appliance purchases.

Convenience is the main factor driving internet shopping, especially for time-constrained consumers buying household appliances, according to Berry et al. (2002).

In their analysis of the significance of dependable and prompt delivery services for customer satisfaction, X et al. (2014) focused on their function in the online purchase of large items such as household appliances.

Flavián et al. (2006) investigated how post-purchase services, like return policies and warranties, contribute to customer loyalty and trust when it comes to online appliance sales.

In order to identify the customer segments most likely to make online purchases of home appliances, Slyke et al. (2004) investigated the effects of age, gender, and income on online purchasing behaviours.

Huang and Rust (2018) talked about how AI-driven suggestions can improve customer confidence while buying appliances by personalising the online shopping experience.

Senecal and Nantel (2004) discovered that influencer endorsements and peer recommendations have a big impact on online buying decisions for high-involvement products like appliances.

Easy return policies lower purchase anxiety and promote online sales, particularly for expensive items, according to Petersen et al. (2005).

Magrath and McCormick (2013) emphasised how mobile apps are becoming increasingly important in facilitating easy and convenient online buying for household appliances.

Li and Kannan (2014) discovered that data-driven, personalised shopping experiences greatly increase customer happiness and trust.

Yu et al. (2018) investigated how e-commerce platforms' eco-friendly and sustainable practices affect customers' decisions, particularly when it comes to durable products like household appliances.

STATEMENT OF THE PROBLEM

E-commerce's explosive expansion has had a big impact on consumer buying habits, particularly how people buy household appliances. Even while online platforms are becoming more and more popular, it is still difficult for researchers and businesses to comprehend the fundamental causes of this change. Convenience, affordability, a wide range of options, and the chance to read reviews and ratings are some of the elements that influence consumers' decisions to buy home appliances online. Businesses, however, struggle to pinpoint the precise expectations and motivations of their clientele, which can differ depending on psychological, technological, and demographic aspects. Even if e-commerce platforms have many benefits, problems like mistrust, delayed delivery, and discontent with after-sale services still exist. Potential disadvantages that could erode customer confidence include the inability to visually inspect things prior to purchase and the absence of personalised in-store interactions. Furthermore, the COVID-19 epidemic has expedited the trend towards online purchasing, so it's critical to determine whether this is a passing fad or a sign of longer-term behavioural shifts. By determining and examining the main factors that influence customers' preference for online platforms when buying home appliances, this study aims to close these gaps. The results are intended to give e-commerce companies useful information for improving client satisfaction, honing their tactics, and removing any obstacles to the widespread use of online purchasing.

RESEARCH METHODOLOGY

This study examines the motivations behind online purchases of new household appliances using a descriptive research design. Structured questionnaires will be used to gather primary data from a sample of online shoppers chosen through purposive sampling. Convenience, cost, product variety, trust, and user experience are some of the main topics that will be covered in the questionnaire. Reports, industry analyses, and journals will be the sources of secondary data. While qualitative replies will offer more profound insights, quantitative data will be examined using statistical tools to spot trends and patterns. By using standardised data gathering techniques and pre-testing, the study seeks to guarantee validity and dependability.

OBJECTIVE OF THE STUDY

1. To study the reason for buying new home appliances in online with respect to the study area.

Reason for Buying New Home Appliances Online

There are many reasons for a consumer to buy home appliances through online. It is essential to measure most influenced reason for buying new home appliances online. Following is the classification of respondents based on their reason for buying new home appliances online. Chi-square analysis made to find the relationship between reason for buying home appliances and area of residence.

Table No - 1

Reason for Buying New Home Appliances

Reasons	Area of Residence			Total	Chi – Square Value	P Value
	Urban	Semi – Urban	Rural			
Exchange of Old one	40 (58.0) [17.4]	10 (14.5) [5.2]	19 (27.5) [19.8]	69 (100.0) [13.3]	114.79	< 0.001**
Upgrading of Home Facilities	48 (56.5) [20.9]	28 (32.9) [14.7]	9 (10.6) [9.4]	85 (100.0) [16.4]		
A symbol of Status	47 (61.8) [20.4]	29 (38.2) [15.2]	0 (0.0) [0.0]	76 (100.0) [14.7]		
Influenced by Necessity	9 (10.6) [3.9]	57 (67.1) [29.8]	19 (22.4) [19.8]	85 (100.0) [16.4]		
Increment of Income	38 (50.0) [16.5]	19 (25.0) [9.9]	19 (25.0) [19.8]	76 (100.0) [14.7]		
Influenced by Family members	19 (28.4) [8.3]	38 (56.7) [19.9]	10 (14.9) [10.4]	67 (100.0) [13.0]		
Changing Trend	29 (49.2) [12.6]	10 (16.9) [5.2]	20 (33.9) [20.8]	59 (100.0) [11.4]		
Total	230 (44.5) [100.0]	191 (36.9) [100.0]	96 (18.6) [100.0]	517 (100.0) [100.0]		

Source: Primary Data
Numbers in ( ) Row percentage
Numbers in [ ] Column percentage
** indicates 1 percent level of significance

Table exhibits that 17.4 percent of the urban respondents purchase home appliance for exchanging of old one, 20.9 percent of the urban respondents purchase home appliance for upgrading of home facilities, 20.4 of the urban respondents purchase home appliance for as symbol of status, 3.9 of the urban respondents purchase home appliance by influence of life style necessity, 16.5 of the urban respondents purchase home appliance because of increment of income, 8.3 of the urban respondents purchase home appliance influenced by their family members and 12.6 of the urban respondents purchase home appliance to go along with changing trend. There are 5.2 percent of the semi-urban respondents purchase home appliance for exchanging of old one, 14.7 percent of the semi-urban respondents purchase home appliance for upgrading of home facilities, 15.2 of the semi-urban respondents purchase home appliance for as symbol of status, 29.8 of the semi-urban respondents purchase home appliance by influence of life style necessity, 9.9 of the semi-urban respondents purchase home appliance because of increment of income, 19.9 of the semi-urban respondents purchase home appliance influenced by their family members and 5.2 of the semi-urban respondents purchase home appliance to go along with changing trend. Whereas 19.8 percent of the rural respondents purchase home appliance for exchanging of old one, 9.4 percent of the rural respondents purchase home appliance for upgrading of home facilities, 19.8 of the rural respondents purchase home appliance by influence of life style necessity, 19.8 of the rural respondents purchase home appliance because of increment of income, 10.4 of the rural respondents purchase home appliance influenced by their family members and 20.8 of the rural respondents purchase home appliance to go along with changing trend.

It is concluded that 13.3 percent of the respondents purchase home appliance for exchanging of old one, 16.4 percent of the respondents purchase home appliance for upgrading of home facilities, 14.7 of the respondents purchase home appliance for as symbol of status, 16.4 of the respondents purchase home appliance by influence of life style necessity, 14.7 of the respondents purchase home appliance because of increment of income, 13 of the respondents purchase home appliance influenced by their family members and 11.4 of the respondents purchase home appliance to go along with changing trend.

Chi-square analysis observed that p value is less than 0.01; the null hypothesis is rejected at 1 percent level of significance. Hence, there is a significant relationship between reason for purchasing home appliance online and area of residence.

Factor influencing Online Shopping of Home Appliance.

There are seven factors identified for the intention to purchase home appliances online. Each factor has five statements equally and measured with five-point Liker's scale. Responses from each factor have computed to make the variable from rank data into scale data. After the computation of the factor into scale variable there are eight factors such as shopping experience, product availability, convenience, trust, safe and secure transaction, and perceived ease of use, perceived usefulness and intension to purchase of home appliances have taken for further analysis.

Correlation analysis of Factors Influencing Online Shopping of Home Appliances

To find the relationship between influencing factors correlation analysis is made. To correlate the factors influencing online shopping of home appliances Pearson's Correlation co-efficient is used.

Table No - 2

Correlation analysis of Factors Influencing Online Shopping of Home Appliances

Factors	Shopping	Product	Convenien ce	Trust	Safe and Secure	Perceive d Ease	Perceive d	Intensio n to

	Experience	Availability			Transaction	Of Use	Usefulness	Purchase
Shopping Experience	1	0.364**	0.480**	0.301**	0.360**	0.425**	0.130**	-0.119**
Product Availability	0.364**	1	0.143**	0.039**	0.183**	0.254**	0.196**	-0.105*
Convenience	0.480**	0.143**	1	0.487**	0.547**	0.532**	-0.072	-0.209**
Trust	0.301**	0.039	0.487**	1	0.495**	0.495**	0.060	-0.045
Safe and Secure Transaction	0.360**	0.183**	0.547**	0.495**	1	0.400**	0.153**	-0.093*
Perceived Ease Of Use	0.425**	0.254**	0.532**	0.495**	0.400**	1	0.056	-0.144**
Perceived Usefulness	0.130**	0.196**	0-.072	0.060	0.153**	0.056	1	-0.036
Intension to Purchase	-0.119**	-0.105*	-0.209**	-0.045	-0.093*	-0.144**	-0.036	1

Source: Primary Data

** Indicates 1 percent level of significance

* Indicates 5 percent level of significance

Table shows that calculated value of correlation between shopping experience and product availability is 0.364, shopping experience and convenience is 0.480, shopping experience and trust is 0.301, shopping experience and safe/secured transaction is 0.360, shopping experience and perceived ease of use is 0.425 and shopping experience and perceived usefulness is 0.130. It indicates positive correlation between said variables at 1 percent level of significance.

Calculated value of correlation between product availability and convenience is 0.143, product availability and trust are 0.039, product availability and safe/secured transaction is 0.183, product availability and perceived ease of use is 0.254 and product availability and perceived usefulness is 0.196. It indicates positive correlation between said variables at 1 percent level of significance.

Calculated value of correlation between convenience and trust are 0.487, convenience and safe/secured transaction is 0.547 and convenience and perceived ease of use is 0.532. It indicates positive correlation between said variables at 1 percent level of significance.

Calculated value of correlation between trust and safe/secured transaction is 0.495 conveniences and perceived ease of use is 0.495. It indicates positive correlation between said variables at 1 percent level of significance.

MAJOR FINDINGS

The study looks at the motivations behind online appliance purchases and finds important connections between residential areas and consumer motives. Upgrading home amenities (20.9%) and buying as a status symbol (20.4%) were the main reasons given by urban respondents. The two main motivators in semi-urban areas were family influence (19.9%) and lifestyle necessity (29.8%). The exchange of outdated appliances (19.8%) and adjusting to shifting trends (20.8%) had the biggest effects on rural consumers.

A substantial correlation ($p < 0.01$) between the reasons for online purchases and the region of residency is confirmed by the chi-square analysis, suggesting that demographic and regional variations influence consumer behaviour. In all, 13.3% of respondents bought appliances to replace their old ones, while 16.4% acquired them to improve household amenities. Important roles were also played by elements including trends (11.4%), family influence (13%), and lifestyle necessity (16.4%).

Correlation analysis investigates influencing factors in more detail. Convenience ($r = 0.480$), trust ($r = 0.301$), and perceived simplicity of use ($r = 0.425$) were found to be positively correlated with buying experience. Convenience also has a good correlation with safe, secure transactions ($r = 0.547$) and trust ($r = 0.487$). Additionally, there were positive relationships between product availability and perceived usefulness ($r = 0.196$) and convenience ($r = 0.143$).

These findings stress that consumers value criteria such as convenience, product availability, trust, and ease of use when shopping online. Semi-urban and rural consumers priorities' trends and necessity, but urban consumers priorities prestige and upgrades. Across order to improve customer happiness across a variety of domains, marketers should modify their approaches to meet these disparate needs by providing individualized experiences, smooth transactions, and easily available product selections.

SUGGESTIONS

To meet the diverse needs of their customers, marketers ought to implement region-specific tactics. Promotions for metropolitan regions might highlight high-end and prestige-boosting goods. Campaigns emphasising necessity, affordability, and exchange offers are needed in semi-urban and rural areas. Advertising that is tailored to local tastes will increase customer engagement and boost sales.

E-commerce platforms ought to improve the user experience and make the buying process easier. The user experience will be enhanced by features including simple navigation, thorough product descriptions, and a speedy checkout procedure. Providing semi-urban and rural customers with easily accessible customer service can foster trust and promote more online spending.

Both urban and rural consumers can be drawn in by promotions that highlight appliance upgrades and exchange offers. Purchases can be encouraged via package discounts, trade-in opportunities, and environmentally friendly programs for recycling used equipment. Clearly outlining these advantages will appeal to buyers who are cost-conscious and ecologically conscientious.

Consumer trust can be increased by ensuring safe transactions and open policies. Secure payment gateways and privacy policies must be prioritised by e-commerce platforms. In semi-urban and rural locations, providing cash-on-delivery choices can comfort first-time customers and promote the use of online buying.

Marketing initiatives for semi-urban and rural locations can highlight how families make decisions about what to buy. A sense of urgency can be generated by highlighting popular products and demonstrating their usefulness using relatable anecdotes or testimonies. Providing easy access to trend-based product recommendations will resonate with younger consumers and trend adopters.

CONCLUSION

With notable regional variances, the study demonstrates the variety of factors driving online home appliance purchases in urban, semi-urban, and rural settings. While semi-urban and rural purchasers concentrate on necessity, cost, and exchange offers, urban customers place a higher priority on improving house amenities and status symbols. According to the correlation analysis, online purchase intentions are significantly influenced by elements like ease of use, trust, and safe transactions. The chi-square analysis confirms that there is a substantial correlation between the location of living and the reasons for purchasing. E-commerce platforms must implement region-specific marketing tactics, provide a user-friendly interface, and priorities trust-building methods in order to increase customer satisfaction and boost sales. Online retailers may successfully meet the varied needs of their customers by taking into account regional preferences and utilising important motivators like family influence and trends. These insights are essential for customising tactics that increase user engagement, foster trust, and broaden the reach of e-commerce sites.

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FROM INTENT TO IMPACT: DIVERSITY, EQUITY AND INCLUSION (DEI'S) ROLE IN ENHANCING ESG INVESTMENT OUTCOMES IN INDIA – AN EMPIRICAL STUDY

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ABSTRACT

In this digital scenario, our consumers are aware of the global environment to make a decision for investment of their funds in the better and economical way. Diversity, Equity and Inclusion (DEI) represent a key aspect of the Environmental(E), Social(S) and Governance(G)includes the four pillars such as environmental sustainability, social responsibility, governance and economic responsibility which helps the business to evaluate the sustainability and ethical impact of companies and investments. The investors decisions mainly based on wide range of financial considerations including profitability, potential for revenue growth, solvency, cash flow generation and more. Probably, they will give importance to non- financial aspects like organisations induces dedication to upholding environment, social responsibility and sound governance, which uplift our economy to grow in and around of our domestic country. DEI enhances social cohesion, reduces inequality and promotes human rights also informs governance practices such as board composition, executive leadership and decision-making process. A diverse and inclusive workforce can bring unique perspectives to our environmental changes and sustainability initiatives. This paper focus on embracing and incorporating DEI into ESG strategies, probably, ESG integrated assets have outperformed their counterparts and the companies have performed relatively better in policy disclosure, social component and governance parameters of ESG, also with the diverse leadership team's inclusion of talent acquisition strategies tends to earn higher returns on equity and better stock price performance.

KEYWORDS: DEI, ESG, Environmental Changes, ESG Performance, ESG Strategies, Financial Performance, Human Rights, Sound Governance, Social and Economic Development, Sustainable Initiatives.

INTRODUCTION

Diversity, Equity and Inclusion (DEI) refers to the intentional creation of an environment where individuals from diverse backgrounds, various experiences, valued perspectives which empowered more to contribute towards the investment by the investors in different traditional or modern investment avenues in the society. Environmental, Social and Governance (ESG) refers to environmental degradation can impact human health and their well-being and investing in India is gaining momentum as investors increasingly seek to align their portfolios with sustainable and ethical practices. This approach evaluates companies based on environmental effect, social responsibilities and governance standards offering holistic view beyond traditional financial metrics. The growing awareness of climate change, social equity and corporate transparency has led to a surge in ESG focused investments. It reflects a shift towards responsible and forward thinking investment strategies. As the Indian market evolves, understanding ESG investing becomes very crucial, as the investor wants to achieve both financial returns and leave a positive societal impact may rely the sources from either financial experts or social platforms. Labour practices and human rights are influenced by governance structures ,therefore, in India, ESG regulations have been gaining traction , (Kwatra, M. ,2023) driven by growing awareness of ESG risks and opportunities among investors, increasing focus on corporate sustainability. A sustainable stock market provides(Spulbar Cristi ,Abdullah Ejaz , Ramona Birau , Jatin Trivedi , 2019) a transparent and effective solution to inherent challenges related to environmental, social ,economic and corporate governance issues. Board composition and executive compensation can impact environmental decision-making .ESG are the significant pillars that make up the framework of investment by the investor, where the environmental factors have an impact on the environment and take into the account the company’s strategies for lowering carbon emissions ,a reliable waste disposal system and placing a significant emphasis on conserving energy and water. The well-being of the employees and society as a whole is the primary factor where the employee welfare is considered more important. Corporate Governance focus on regulatory compliance , redressal of grievance ,effective policies for whistle blowers , ethical behaviour and robust internal control against malpractices and fraudulent activities. The risk management is one of the most significant ranking factors determining the adoption of corporate strategies based on sustainable investing, Creates value for the customers (Chaudhary, A., Shabir Ahmad Hurrah & Shafat Maqbool 2020,)plays an important role in the satisfaction and repurchasing of the product from a particular company and apart from satisfaction , also make loyalty among the customers towards a certain brand and product. Adopting environmental, social and governance best practices leads to a long term competitive advantage. Businesses are well aware of the fact (Birindelli , G., Dell ’Atti, S., Iannuzzi, A. P., & Savioli, M. ,2018) that their survival depends on achieving one or more sustainability development goals (SDGs) especially on the climate. The ESG performance provides complementary information to the firm’s corporate financial performance(CFP), which is based only on economic and financial results. The investments which are qualified as sustainable ,when they are contributed in business , funds or other financial instruments that meet dual objectives of generating financial returns while also making a positive impact. However, also creates long term opportunities for financial gain with a range of options available including mutual funds , exchange traded funds and bonds. The companies which highlight the mutual funds ,ESG strives to support socially responsible business and sustainable practices. The intention is to generate revenue and simultaneously improve both the society and the environment . There are enormous ESG funds available for investing in a wide range of investment avenues like real estate, bonds , stocks, gold, silver etc., The importance of ESG has been recognized by the investors and still they have awareness about the risk and return through social and digital indicators. The emergent literature on sustainable business practices increasingly indicates the importance of financial institutions (Ashwin Kumar, N. C., Smith, C., Badis, L., Wang, N., Ambrosy, P., & Tavares, R., 2016) as they shape both societal and economic sustainability outcomes. As a principal intermediary , the banking sector connects the companies and individuals and plays a vital role in steering the stakeholders towards more environmentally and socially responsible behaviours in the process of investment.

COMPONENTS :

- Diversity: The presence of different groups or individuals with unique features or characteristics, experiences and societal backgrounds.
- Equity: The fair treatment access and opportunities for all individuals, addressing systematic barriers and biases.
- Inclusion: In an environment where individuals feel their sense of belonging, respect, value, equal access, cultural competence and empowerment

ESG factors implementation is characterised by the following three phases viz., reframing the company's identity ,codifying the new identity and building a supportive organisational culture (Tripathi, V., & Bhandari, V. 2014)and these factors are valuable tools measuring and comparing sustainable companies performance. The relationship between ESG performance and stock returns can vary across industries and regions. Hence, performance has been found to have a more significant impact on stock returns in emerging markets than in developed markets. Financial performance and corporate innovation ability have been identified as key transmission mechanisms through which ESG performance affects stock returns. The improved ESG performance can lead to better financial performance , increased innovation and enhanced stock returns (Edward Aw, LA Perla, S. J., & Sivin, G. Y., 2017), both businesses and investors must take into account the long term , if they want to continue operating successfully in the market. Since, ESG is a collection of criteria which are used to evaluate the operations of finance companies in terms of governance , environmental and social impact perspective. At present, the investors are increasingly incorporating ESG considerations into their investment decisions. The regulatory environment plays a vital role in promoting ESG considerations especially in the stock market and these strives for driving greater transparency and accountability in ESG reporting.

TBL FRAMEWORK

The Triple Bottom Line is a framework that expands the traditional notion of a company's success and has three interconnected dimensions such as :

Figure 1

1. People (Social Performance)
   - ❖ Labour Practices and Human Rights
   - ❖ Community Engagement and Development
   - ❖ Health and Safety
   - ❖ Diversity and Inclusion
2. Planet (Environmental Performance)
   - ❖ Climate Change and Greenhouse gas Emissions
   - ❖ Resource Depletion and Waste Management
   - ❖ Pollution and Environmental Degradation

- ❖ Conservation and Bio Diversity
- ❖ Sustainable Supply Chain Management

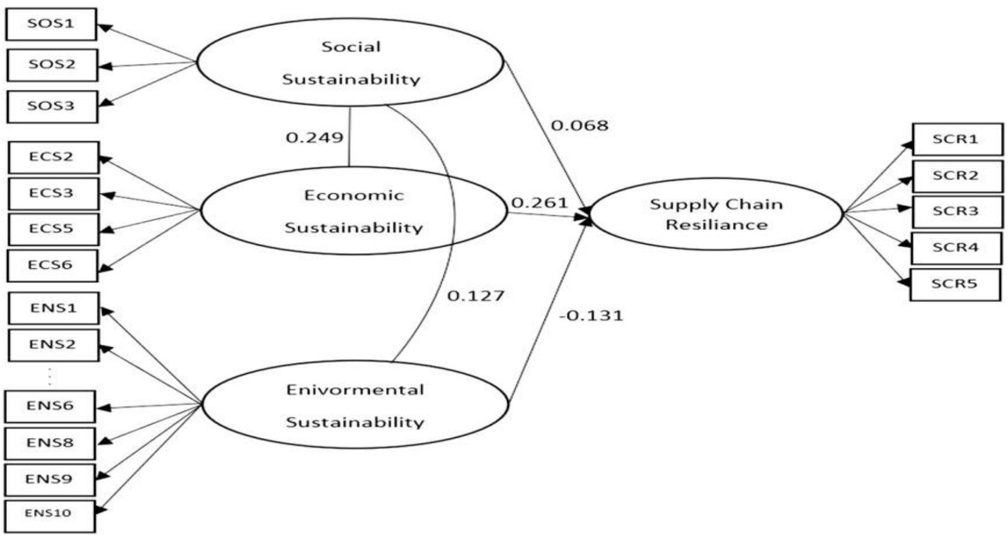
3. Profit (Economic Performance)
- ❖ Financial Returns and Profitability
- ❖ Economic Growth and Development
- ❖ Innovation and Competitiveness

Sustainable Investment

The sustainable investment is a complex and often misunderstood concept ,since ,traditionally, the investors rely on company disclosure and human analysis(Hughes . A ., Urban, M., and Wójcik, D 2021) which consider the Environmental, Social, Governance factors in addition to financial returns, provides positive impact , mitigate the risks and avoid the losses and help the companies to comply with increasingly stringent ESG regulations. The concept of sustainable and responsible(SR) investments expresses that every investment should be based on the SR investors code of ethics,(Drempetic, S., Klein, C., & Zwergel, B.2020), Since the allocation of SR investments intends more companies to follow ethical practices which are based on the environmental, social and corporate governance scores provided by rating agencies. Large capital funds are those mutual funds,(Bhuva, K. K., & Bantwa , A.R., 2020), which look for capital appreciation by investing primarily in stocks of large blue chip companies that have more potential of earning growth and higher profit. Mid capital funds are the type of stock fund that invests in mid-sized companies. Due to the tech-driven sources, the goal of sustainable investing is to generate long term profitable income also promotes sustainable development and minimise harm to the environment and society. The organisations will clearly specify their sustainability goals and objectives, incorporate the factors into investment decisions, monitor and evaluate the performance of investments and upgrade the better ESG practices. Thus, the ESG investing involves analysis of the extra financial elements of the company's performance in order to make sustainable information as relevant as financial information. Corporate social responsibility proposed a model for testing CSR investments in organisations based on the economic, legal and ethical domains , since the skill (Garcia, A. S., Mendes-Da-Silva, W., & Orsato, R. J. 2017). of firms to remunerate investors adequately because investors prioritize companies that provide a better return per unit of risk.

The below given figure 2 explains the latent and observed variables sustainable stock variance, financial performance, stock price, return on equity which represents the whole performance of the companies which involves in various investments in the market.

Figure 2



Sustainable Investment

Latent Variables	Representation
Sustainable Stock Variance	Financial performance of sustainable stocks
Environmental , Social and Governance Factors	ESG performance of companies
Financial Performance	Financial soundness and stability of companies

Observed Variables	Representation
Stock Price	Market value of sustainable stocks
Return on Equity	Profitability of companies
Carbon Emissions Reduction	Environmental performance of companies
Diversity and Inclusion	Social performance of companies

STATEMENT OF THE PROBLEM

Around this global world, the fairness and justice ensure equal access to opportunities and resources, diverse perspectives drive innovation and creativity, inclusive decision making process which leads to better outcomes, organisations that prioritize DEI are viewed more by the investors. The organisations can develop effective strategies to promote diversity, equity and inclusion leads to more innovative ,engaged and successful workforce. The research seeks to understand the role of diversity ,equity and inclusion in enhancing environmental, social and governance investment outcomes in India and explore how integrating DEI into business strategies can impact ESG performance and investment decisions.

OBJECTIVES OF THE STUDY

1. To elucidate the implementation of effective risk management.
2. To explore the existence of sustainable products of investments.
3. To exhibit the embed ESG considerations towards the decision making process.

SIGNIFICANCE OF THE STUDY

This study focused on DEI initiatives directly address social inequalities by promoting inclusive hiring practices, equitable pay structures and diverse leadership. The companies that prioritize DEI, demonstrate a commitment to social responsibility ,resonating with the customers, investors inclusive of employees. Transparent DEI policies enhance reputation and mitigate risks of reputational damage due to perceived inequities. Indian companies operate in a unique socio-economic landscape marked by diversity in culture ,language and economic status .Integrating DEI into ESG strategies yield several business benefits. The Securities and Exchange Board of India(SEBI) mandates Business Responsibility and Sustainability Reporting(BRSR) which includes disclosures on social impact initiatives like DEI ,proactively embedding DEI ensures compliance with these evolving regulations, attract socially conscious investors who view inclusivity as a marker of long term resilience and ethical governance. Incorporating DEI which enhance and helps the Indian companies differentiate themselves in global markets by showcasing their commitment to ethical practices and stakeholder wellbeing. ESG is the most powerful indicator and identifies the potential risks , opportunities and ensures long term sustainability. Also ensures adherence to evolve the environmental, societal and governance regulations.

The plethora of environmental, social and governance indicators and the investors need for their assessment and scrutiny have created a demand for specialized rating services (Del

Giudice, A., & Rigamonti, S. 2020), also the rating agencies play a vital role by disseminating information to market participants. The findings of the study exhort the Indian corporates embedding DEI within ESG strategies is essential for sustainable business success. By fostering diverse, equitable and inclusive workplaces companies can meet regulatory requirements ,attract top talent and build long term stakeholder trust.

LITERATURE REVIEW

Diversity , Equity and Inclusion play a crucial role in enhancing ESG investments in India. DEI is an integral part which focus on social aspects includes how companies treat and manage social factors. DEI initiatives can positively impact a company's ESG score ,as it encompasses workplace well-being, equity and career advancement. In India , the Securities and Exchange Board of India(SEBI) has mandated ESG disclosures for 1000 top listed companies, emphasizing the importance of DEI in business operations. Moreover, companies with diverse management teams earn 19 per cent more revenue than those with less diverse teams. Ultimately , for DEI to become fully integrated into the company's ESG goals and initiatives ,key leaders must endorse such efforts and guide the team viz., HR ,IT Accounting Personnels on what data to be collected .furthermore ,setting benchmarks that influence the organisations progress toward reaching the milestone for the success.

Pedersen et al., (2021) analyse the ESG return relationship within the mean-variance setup, where the solution to the investor's portfolio problem is characterised by an ESG efficient frontier who use ESG scores to update their views on expected returns and variances.

Bansal et al., (2022) explain the time variability of abnormal returns of green and brown firms in different states of the country and highlight the role of countercyclical investor's preferences for sustainability in shaping the dynamic ESG-alpha relationship.

Avramov et al., (2021) highlight the relevance of investors ,heterogeneous beliefs ,learning and ambiguity about the probability distribution of the future payoff and bring forward potential implications for the survival of ESG investors.

Heeb et al., (2022) examines that dedicated responsible investors are willing to pay only for the sustainable investments and driven by an emotional feeling rather than a calculative valuation of impact.

Riedl and Smeets(2017) exhibits why the investors engage into or hold socially responsible investments and find that social preferences and environment plays a significant role in ESG investment while financial motives are in secondary manner.

Shore et al., (2018) discussed about the DEI management practices aims to ensure that all employees regardless of their race, ethnicity, gender, age, sexual orientation ,religion, disability etc., have equal opportunities in terms of their recruitment , hiring, financial benefits which strives for the success of the organisation.

Manoharan and Singal (2017) states that DEI has become increasingly popular in the industries like hospital and tourism, relies heavily on a diverse workforce to provide high preference service to a global customer base and at present , the organisations have recognised the need to create inclusive workplace that increase value and respect among the employees from all backgrounds.

Hutchens et al., (2023) the researcher denotes the existence of potential for diversification within the industry ,particularly among the Native American Tribal Enterprises have underscored both the opportunities and ongoing challenges in expanding the DEI efforts to include under the represented groups in leadership and ownership roles.

Tripathi & Bhandari (2014) indicates the importance of growing acceptance is the higher level of recognition solicitude of ESG investing among the stockholders and fund controller. Companies sustainable performance is measured utilising environmental, social and governance factors and the variables associated to ecosystem are emissions of water discharges, water use, water contamination, non-renewable and renewable resources .

Weber (2014) this study relates the ESG reporting is based on institutional pressures towards ESG practices which cause businesses to react and the relationship between ESG reporting , financial performance and returns as well as its applicability to their shareholders , both investors and businesses must take into account the long term if they want to continue successfully in the market. ESG is a collection of criteria that are used to evaluate the operations of finance companies in terms of environmental, governance and social impact in our Indian economy.

Friede et al., (2015) analysed the data from over 2000 Companies and found the companies with high ESG ratings had higher stock returns and lower volatility than those with low ESG ratings. This study also exhibits the relationship between ESG and financial performance was stronger in emerging markets than in developed markets. A competent management will decide to fund CSR initiatives as it believes , will result in preferable monetary performance in the long run .

Runan Shen(2024) examined the impact of ESG performance on credit risk ,moreover, data had been collected from several companies and found with high ESG ratings had lower credit risk than those with low ESG ratings. The study compared the relationship between ESG and credit risk with high environmental and social risks and concludes ESG disclosure usually creates a competitive advantage for the companies.

Mohammed and Weizmann (2021) investigated the impact of ESG disclosure on firm productivity , which is mediated by competitive advantage. The researchers examined the impact of environmental ,social and governance initiatives on firm performance also , suggest that sustainable practices can have a positive effect on financial performance and significantly promote the improvement of total factor productivity in around the society.

RESEARCH METHODOLOGY

This study focussed towards sustainability of the investment outcomes by the companies in India, with a combination of qualitative and quantitative methods to gather comprehensive insights into DEI’s impact on ESG investment outcomes, also explores the relationship between DEI and ESG investment in India. The primary data has been collected through the surveys among the Indian companies, investors and stakeholders to gather information on DEI practices, ESG performance and investment decisions along with in-depth interviews with industrial experts and company representatives to gain deeper insights into DEI’s role in enhancing ESG investment outcomes. The secondary data was gathered by literature review ,annual reports ,magazines, journals, ESG disclosures of Indian companies.

DATA ANALYSIS AND INTERPRETATION

Diversity ,equity and inclusion (DEI)plays a vital role in enhancing environmental, social and governance(ESG) investment in India. By integrating DEI into business strategies ,companies can improve their ESG performance, attract the investors and contribute to the sustainable development. For the research findings chi-square test has been followed for gathering the results.

Table No: 1

Chi Square Test shows the association between the Diversity and Social Performance

Categories	Low	Moderate	High	Total
Diversity	120	80	50	250
Social Performance	70	100	80	250
Total	190	180	130	500

Table No: 2
Chi Square Test Analysis

Observed Frequency	Expected Frequency	$(O - E)^2$	$(O - E)^2/E$
120	95	625	6.58
70	95	625	6.58
80	90	100	1.11
100	90	100	1.11
50	65	225	3.46
80	65	225	3.46
Total			22.30

In this table ,value of x^2 denotes 2d. f at 5 % level of significance is 5.99 . The calculated value of x^2 is 22.30 and it is more than the table value. Therefore, the null hypothesis is rejected. Hence, diversity and social performance of the companies are associated.

Table No: 3
Chi Square Test explains the variation between the Stock Price and Sustainable Value of Stocks

Categories	Low	Moderate	High	Total
Stock Price	130	40	80	250
Sustainable value of stocks	150	30	70	250
Total	280	70	150	500

Table No: 4
Chi Square Test Analysis

Observed Frequency	Expected Frequency	$(O - E)^2$	$(O - E)^2/E$
130	140	100	0.714
150	140	100	0.714
40	35	25	0.714
30	35	25	0.714
80	75	25	0.333
70	75	25	0.333
Total			3.522

In this table x^2 specifies as 2d.f at 5% level of significance is 5.99. The calculated value of x^2 is 3.522, it is less than the table value. Therefore, the null hypothesis is accepted. Hence, the stock price and sustainable value of stocks remain independent.

DISCUSSION

ESG initially emerged in the most developed countries like US and Europe. Provisions and practices of ESG in companies are relatively hybrid and mature. Companies in India have made significant progress in integrating the ESG factors into their investment decisions with a focus on governance and social parameters. ESG considerations are increasingly important in the stock market , with investors recognising their impact on long term financial performance. This research suggests the investors that the companies which are strong with their ESG performance tends to outperform in terms of stock returns. The relationship between ESG performance and stock returns can vary across industries and regions. Improved ESG performance can lead to better financial performance, increased innovation and enhanced stock returns. At present , existence of transparency and accountability , companies are capable to incorporate the governance practices and they can take their informed decisions for the investment which promotes their social and economic development and moreover the diverse leadership enhances ESG investment in India towards the companies and investors , recognising the importance of sustainable and responsible investment strategies that leads to earn higher returns on equity and better stock price performance.

PRACTICAL IMPLICATIONS

Based on the findings of the study , before the final decision ,the companies have to analyse and invest in the projects that generate both financial returns and positive environment , social and governance impact. By considering the company's DEI policy review, compliance and accountability, partnership collaborations, philanthropic efforts towards the administration and however , they have to identify , assess the potential ESG risks that could impact financial performance of the companies, minimise potential negative impacts, and ensure compliance with ESG related regulations and standards. By understanding the practical implications of ESG , the companies can develop effective and innovative strategies to manage risks, capitalise on opportunities and contribute to sustainable development.

FUTURE RESEARCH DIRECTIONS

For the further scope and future research, the researchers should focus on interconnectedness of ESG dimensions, develop a deeper relationship between environmental, social and governance factors to better understanding their cumulative impact on sustainability. Developing standardised and comprehensive metrics is crucial for accurate assessments and comparisons so the researchers have to find out the refined existing frameworks to resolve the emerging new issues. Also, further investigation is needed to focus on developing industry-specific ESG guidelines and best practices, acknowledging the unique challenges and opportunities faced by different sectors.

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A STUDY ON SURVEY OF THE TAMILNADU PRIMARY AGRICULTURAL CO-OPERATIVE CREDIT SOCIETIES (PACCS) IN TAMILNADU, INDIA

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ABSTRACT

A basic agricultural credit society is the smallest cooperative entity in India. It operates at the local level (gramma panchayats and villages). A hamlet or town was the site of the first agricultural credit union. It provides agricultural financing, distributes products such as fertiliser, and operates Public Distribution System outlets. Crop loans are the most prevalent kind of credit given to farmers by major agricultural cooperative lending organisations, and they are offered with no collateral security. A loan in excess of this amount is secured by a mortgage or a jewellery pledge. Primary Agricultural Cooperative Credit Societies also issue loans for non-agricultural reasons such as housing, education, and professional loans, in addition to agricultural objectives such as farm machinery purchases. Farmers can get short- and long-term agricultural loans with low interest rates. The study looks on the sustainability of primary agricultural loans in Tamil Nadu primary agricultural cooperative credit societies.

KEYWORDS*:* Agricultural Credit, long-term development goals, Interest subvention.

INTRODUCTION

The agricultural sector of India has grown up since independence but after green revolution in agriculture got an express speed for its development. Though there are so many problems arise in agriculture after independence. Like a water resource was very limited, seed qualities was not good, availability of fertilizer was less than the requirement etc. Over all in many problems, there was a significant problem of credit for agriculture. More than seventy five percent agriculturist was receiving the credit from money lenders for their agricultural cultivation. The rate of interest was very high and so the people couldn't survive their economic position. Farmer wanted some method for to solve this problem.

Primary Agricultural Cooperative Credit Societies

The cooperative movement began in India as a move to provide credit to release the rural community from the clutches of moneylenders. RBI started special department for the development and growth of Cooperative credit Societies, farmer can get the credit from the primary agriculture credit co-operative society. These societies are working for farmer, by the farmer.. India has only four month rainy season in a year. During that time the credit deliver a significant role for the cultivation of agriculture. In 1912, the Co-operative Societies Act was enacted which permitted the registration of non-credit co-operative societies as well.

Primary agricultural cooperative credit society is an institutional set up that caters to the economic needs of the members who reside cultivate in the area of operation of the society. The agricultural cooperative credit society movement is a pioneer in providing loans to agriculture. The cooperative credit societies Act, 1904 was passed on 25th march, the first credit society was started on 21st august 1904 in Tirur, Tiruvallur district. Co-operative societies play an important role in uplifting the poor and downtrodden. These have made a significant contribution to the all-round socio-economic development of the state. The cooperative societies provide credit to the people, particularly in rural areas at reasonable interest rates thereby reducing the dependency of the farmers on informal credit and usurious rate of interest. Since most cooperative societies are located in villages and spread across the state, geographically and culturally it is the most convenient institutional arrangement for availing the credit by farmers.

Functions of Primary agricultural cooperative credit societies (PACCS)

In Tamil Nadu, there are 4,451 primary agricultural cooperative credit societies. The main purpose is to provide agricultural and non-agricultural loans in rural areas. Agricultural credit includes crop loans and loan for allied agricultural activities like purchase of farm machineries, purchase of milk animals, micro irrigation etc. Non-Agricultural credit includes loans for housing, income generating activities of self help groups, loans to petty traders and other non-farm sector loans. These societies distribute and sell agricultural inputs such as fertilizers and seeds etc. These societies not only encourage farm mechanization by providing agricultural implements like tractor, power tiller etc., at low cost hiring to small and marginal farmers who cannot afford to own them individually but also reduce input cost to a great extent, thus paving the way for increasing the income of the farmers. Custom-hiring facilities such combine harvesters, straw balers, multi-grain threshers etc., to the farmers. The Primary agricultural cooperative credit societies (PACCS) besides proving credit facilities to rural farmers also provide other kinds of loans such as loans for consumption expenditure on the pledge of jewels, loans to self help groups, etc. It plays a major role in providing low interest loans to farmers improve agricultural production.

NEEDS FOR THE STUDY

Farmers are currently facing a major downturn due to unavailability of inputs and funds for agricultural production. Small and marginal farmers have been having great difficulty in getting loans or any benefits from agricultural co-operative credit societies. Therefore, the Agricultural co-operative credit societies should focus more on proving loans and any other befits to small and marginal farmers.

OBJECTIVE OF THE STUDY

1. To study the number of agricultural cooperative credit society in Tamil Nadu.
2. To find out agricultural credit provided to the farmers for the farming
3. To suggest the significant of the agricultural credit for the agricultural sustainable development.

REVIEW OF LITERATURE

Shobana J (2018) studied about performance of Primary Agricultural Cooperative Credit Societies in Thiruvannamalai district Tamil Nadu. This study has been explained about Growth of loan, outstanding, short term loan and medium term loan, recovery of loan to the rural people and meeting financial requirements. Farmers have cultivated various crops through agricultural cooperative credit support. Generally most of the farmers have repaid the loan. All farmers have availed agricultural cooperative loans for their crop cultivation. farmers have cited various economic, social, administrative and political reasons for not repaying the loan. They point out that the role of agricultural cooperative credits is very important in promoting cultivation practices in the Thiruvannamalai District of Tamil Nadu.

Viyas K and Kadam R.N (2016) , studied wide range Performance of Agricultural Co-operative credit Society (PACSs) in Shivamokka Telungan district. A study based on statistical data provided by those troubled for a period of 10 years. From 2004-05 to 2013-14. This district has been positive in the field of research and co-operation in various aspects such as number, membership of farmers, deposits, working capital, loans withdrawn outstanding balance, paid up capital etc.

Memon .AS (2012) in his dissertation he evaluates the performance of these Agricultural Cooperative Societies and describes the progress of the Primary Agricultural Cooperative Societies in India from 2000-01 to 2009-10. The start-up Agricultural Cooperative Credit Societies have found that the total number of members has increased and the number of SC members has increased rapidly during those decades, with total borrowing, total deposits and working capital increasing, and a significant factor in overall performance. There are start-up agricultural cooperative societies. The scenario of progress and development is not excellent but good performance has been shown.

Table No: 1

Performance of primary agricultural cooperative credit societies during the last five years is given below

Amount (Rs. In crore)

Year	Deposits	Loan Disbursement
2017 - 18	6,606.17	17,784.88
2018 - 19	6,371.79	19,723.89
2019 - 20	6,657.61	22,746.86
2020 - 21	7,131.35	28,276.17
2021 -22 (upto 28.02.2022)	7,505.00	15,590.04

Source: Co-operation, Food and consumer protection department cooperation policy Note 2022-23

Short term and long term cooperative credit structure

The short term cooperative credit structure comprises 4,451 primary agricultural cooperative credit societies (PACCS) at village level, 23 Central Cooperative Banks (CCBs) at the District level and the Tamil Nadu State Apex Cooperative Bank (TNSACB) at State level. They play a vital role in purveying rural credit for agriculture and Non-agriculture sector. Long Term Cooperative Credit Structure comprises Tamil Nadu Cooperative State Agriculture and Rural Development Bank at the State level and 180 Primary Cooperative Agriculture and Rural Development Banks at Taluk / Block level.

Performance Indicators

Indicator number	Performance indicators
1	PACS which have diversified their business
2	PACS which have higher level of members' patronage in capital formation
3	PACS which are placed in the financially viable category
4	PACS which respond properly to the needs of agricultural system
5	PACS which enjoy continuous profit from their business
6	PACS which have implemented Government / NABARD / NCDC schemes and programmes for thedevelopment of agriculture and allied sector
7	PACS which have professionally trained and competent staff

Service rendered by the Cooperation Credit Societies for Crop Loan

Primary agricultural Cooperative credit Society mainly provides loans to farmers without any collateral security up to Rs.1.60 lakh and upto Rs.3.00 lakh on the security of collateral. Efforts have been made to achieve inclusive growth by proving crop loans to new farmers including small and marginal farmers, scheduled cast and indigenous farmers. Cooperative society provides crop loans to farmers at 7% interest rate. No interest will be charged to the farmers who repay the crop loan on or before the due date. To compensate for the interest loss incurred by the Associations, the government of Tamil Nadu provides 4% interest incentive in addition to the Government of India's who are the farmers repay the crop loan on or before the due date 3% the interest rate provides. The Government of Tamil Nadu offers 2% interest subsidy to the cooperatives and over the interest subvention received from the government of India for the providing crop loan made out of their own funds.

Common Service Centres

The common service canters operating under the Primary Co-operative Credit Societies and other Co-operative Societies are mainly aimed at proving government service to the general public, especially the rural people. There 4,412 Common Service Centers are being offered through e-district, e-sevai and Digi seva portals. These include e-services revenue department such as community certificate, Income certificates, first Graduate certificate, birth and death certificates, extra of land records etc. Registration department services such as encumbrance certificate, certified copy and social welfare department services etc., are also providing. In the year 2021-2022 til 28.02.2022, 41,15,454 services have been provided by the Common Service Centers to the public and revenue of Rs.14.46 crore has been generated.

Crop Insurance

` During the period of 2021-22 up to 28.02.2022, 3,25,265 farmers have been registered through cooperative societies and Rs.32.21 crore was collected from the farmers share of premium and paid to the respective insurance companies. As on 28.02.2022, Rs.6,047.63 crore has been provided to 28,47,800 farmers, who have insured for their 29 crops from the year of 2016-2017 and compensation for loss of yield by cooperative societies.

Primary Cooperative Agricultural and Rural Development Bank

There are 180 primary cooperative Agricultural Rural Development banks functioning in the state of Tamil Nadu. These banks are at currently issuing jewel loans out of their own funds and by getting refinance from the Tamil Nadu cooperative state agricultural and rural development bank. During the year 2021-22 upto 28.02.2022, jewel loans to the tune of Rs.609.64 crore has been disbursed.

Integrated Cooperative Development

The Integrated Cooperative Development Program (ICDP) aims to improve the credibility of co-operative, thereby improving service delivery to members filling gaps in infrastructure within co-operatives, increasing the business size of cooperatives by increasing margin cash assistance and capacity of the staff and members. The scheme covers all types of cooperatives. The project funding is enclosed by loan given by National Cooperative Development Corporation to the Government of Tamil Nadu which is extended to the Co-operative Societies in combination of credit and share capital. 25% subsidy from the Government of India for sub-projects dealing with agricultural marketing, processing and infrastructure development. Integrated Cooperative Development Project has been implemented and completed in 28 districts with an outlay of Rs.462.97 crore during the period from 1989 to 2017 as detailed below;

Table No: 2
Integrated Cooperative Development Project has been implemented and completed in 28 districts with an outlay of Rs.462.97 crore during the period from 1989 to 2017

(Rs.in Lakh)

S.no	Name of the District	Years of implementation	Outlay
1.	Viruthunagar	1989 - 1995	840.86
2,3.	Cuddalore - Villupuram	1992 - 1997	1,445.08
4,5.	Coimbatore - Tiruppur	1995 - 2001	1,080.99
6,7.	Dharmapuri - Krishnagiri	1995 - 2001	1,160.25
8.	Tiruvannamalai	1996 - 2001	816.58
9.	Kancheepuram	1998 - 2005	1,103.88
10.	Ramanathapuram	2000 - 2004	664.04
11.	Tiruchirapalli	2002 - 2008	1,216.97
12.	Thanjavur	2002 -2008	1,091.59
13,14.	Perambalur - Ariyalur	2008 - 2008	926.62
15.	Tiruvarur	2002 - 2008	1,222.44
16.	Theni	2005 - 2011	978.17
17.	Tuticorin	2005 - 2011	942.08
18.	salem	2009 - 2013	2,651.58
19.	Erode	2009 - 2013	3,534.32
20.	Madurai	2009 - 2013	2,376.45
21.	pudukottai	2009 - 2013	1,437.56
22.	Dindigul	2010 - 2013	3,078.35
23.	Sivagangai	2010 - 2014	2,738.69
24.	Tirunelveli	2010 - 2014	4,201.07
25.	Karur	2011 - 2016	2,541.02
26	Vellore	2011 - 2016	3,100.13
27.	Nagappattinam	2011 - 2016	4,147.08
28.	Nilgiris	2012 - 2017	2,974.43
		Total	**46,297.19**

Source: Ministry of co-operation policy note - 2022–2023

Investment Credit for Agricultural and allied activities

Cooperative are encouraged to continue lending to agricultural investment activities such as land development, micro-irrigation, animal husbandry, farm mechanization and fisheries with the aim of increasing farmers' income and encouraging capital formation and ensuring sustainable growth in agricultural production. An investment loan of Rs.97.98 crore has been disbursed to 13,110 farmers till 20.02.2022 in 2021 – 22.

SUGGESTION

The government should provide credit to all farmers, especially small and marginal farmers. The cooperative society should inform every farmer in a timely manner about the provision of inputs like seed, fertiliser and any concessions. The repayment time should be extended to the farmers. Agricultural cooperative credit society should make counselling to the farmers about the loan utilization and formalities to be relaxed. Farmers are required to provide accurate information on repayment times and the management of the agricultural co-operative credit society should encourage farmers to repay their loans. The agricultural cooperative society should increase the number of credit facilities available to farmers during different cropping seasons and provide timely credit to the agricultural production.

CONCLUSION

This research was conducted on the Tamil Nadu Primary Agricultural Cooperative Credit Society. Farmers benefit greatly from agricultural cooperative loans for crop output. The majority of farmers are tiny and marginal. Small and marginal farmers find it difficult to get crop cultivation loans from cooperative associations. Due to economic constraints, they are having significant difficulty in agricultural output. Loans or other benefits are not provided on schedule and in sufficient quantities. The cooperative credit society cannot provide loans to all farmers; cooperative society members only receive loans and other perks. Farmers are unable to repay the loan in the event of crop loss, natural calamities, or low yield. As a result, farmers induce an economic downturn. It should be highlighted that agricultural cooperative credit is critical in supporting farming methods.

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A STUDY ON EFFECTIVENESS OF LEADERSHIP STYLES ON EMPLOYEE MOTIVATION IN SELECTED ORGANIZATIONS WITH SPECIAL REFERENCE TO TIRUCHIRAPPALLI DISTRICT

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ABSTRACT

Leadership plays a vital role in determining the success and sustainability of any organization. Effective leadership not only guides employees toward achieving organizational goals but also creates a work environment that fosters motivation, commitment, and productivity. The style of leadership adopted by managers' influences how employees perceive their roles, how satisfied they feel, and how much effort they are willing to contribute toward the organization's success. Tiruchirappalli district is rapidly growing industrial, educational, and service hub in Tamil Nadu, organizations face unique challenges in managing and motivating a diverse workforce. The presence of varied sectors, such as manufacturing, healthcare, information technology, and education, demands flexible and context-specific leadership approaches.The following are the objectives of the study, (i) to present the different leadership style in the organization, (ii) to present the socio economic factors of the sample respondents, (iii) to find the relationship between Relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation and (iv) to offer suggestions to the employees those are working in the organization. The researcher distributed 250 structured questionnaire in the study area which designed for data collection. Convenient sampling methods adopted for data collection method. Out of that 228 questionnaires were collected back, all the 228 samples were taken for analysis. The study concluded that the organizations needs an efficient leader to lead the organization, the leaders are working out with men and machine, the machines are periodically updating by the organizations, the same time the men should up skill periodically. These activities should lead by the leaders. The leaders' motivation having effective result in employees' performance and activities. This study shows the effectives leadership style and which benefits to the employees.

KEYWORDS: Leadership Style, Organizational Goals, Employees Performance and Employees Motivation.

INTRODUCTION

Leadership plays a vital role in determining the success and sustainability of any organization. Effective leadership not only guides employees toward achieving organizational goals but also creates a work environment that fosters motivation, commitment, and productivity. The style of leadership adopted by managers' influences how employees perceive their roles, how satisfied they feel, and how much effort they are willing to contribute toward the organization's success. In today's competitive business environment, the ability of leaders to motivate their workforce has become one of the most critical factors for organizational effectiveness.

Leadership styles vary from one organization to another and even among leaders within the same organization. The most widely recognized styles include transformational, transactional, and laissez-faire leadership. Transformational leaders inspire and intellectually stimulate their employees, helping them go beyond self-interest for the sake of the organization. Transactional leaders, on the other hand, focus on performance-based rewards and punishments to achieve compliance. Laissez-faire leaders exhibit a more hands-off approach, allowing employees to make decisions independently. Each style has a distinct impact on employee motivation and organizational outcomes.

Employee motivation refers to the internal drive or external factors that stimulate enthusiasm and persistence to pursue a course of action. Motivated employees are more productive, innovative, and loyal to their organizations. Factors such as recognition, job satisfaction, rewards, and leadership practices significantly affect motivation levels. Thus, understanding which leadership styles effectively enhance motivation is crucial for managerial efficiency and employee well-being.

Tiruchirappalli district is rapidly growing industrial, educational, and service hub in Tamil Nadu, organizations face unique challenges in managing and motivating a diverse workforce. The presence of varied sectors, such as manufacturing, healthcare, information technology, and education, demands flexible and context-specific leadership approaches. However, many organizations still rely on traditional leadership patterns, which may not align with the changing expectations of modern employees. Therefore, studying the effectiveness of leadership styles on employee motivation within the local context of Tiruchirappalli provides valuable insights for both researchers and practitioners.

STATEMENT OF THE PROBLEM

Leadership and motivation are two interconnected pillars that determine organizational success. Despite their importance, many organizations in Tiruchirappalli face challenges such as low employee morale, high turnover, and limited engagement. One of the key reasons behind these issues may be the mismatch between leadership styles adopted by managers and the motivational needs of employees.

There were several studies have been conducted nationally and internationally on leadership and motivation, limited empirical evidence exists specifically focusing on organizations in Tiruchirappalli district. The cultural background, management practices, and employee expectations in this region differ from those in metropolitan cities. As a result, leadership approaches effective elsewhere may not yield the same outcomes locally. Managers often adopt leadership styles based on personal preference or experience rather than evidence of their motivational effectiveness.

The problem of this study is to examine how different leadership styles (transformational, transactional, laissez-faire and etc) influence employee motivation in selected organizations of Tiruchirappalli district, and to identify which leadership style most effectively enhances employee motivation in the local organizational context.

RESEARCH GAP

1. Limited empirical evidence exists on the relationship between leadership styles and employee motivation in Tiruchirappalli district.
2. Most prior studies have concentrated on specific sectors like IT or education; there is a lack of cross-sectoral analysis covering multiple industries.
3. Few studies have compared the relative effectiveness of transformational, transactional, and laissez-faire leadership styles in the context of small and medium organizations in Tamil Nadu.
4. The influence of local work culture, employee expectations, and organizational environment on leadership–motivation linkage remains underexplored.
5. This present study aims to fill these gaps by analyzing the effectiveness of leadership styles on employee motivation in selected organizations of Tiruchirappalli district.

Different Types of Leadership Styles

1. Autocratic Leadership
2. Democratic (Participative) Leadership
3. Laissez-faire (Free-rein) Leadership
4. Transactional Leadership
5. Transformational Leadership
6. Bureaucratic Leadership
7. Charismatic Leadership
8. Situational Leadership
9. Servant Leadership
10. Visionary Leadership

OBJECTIVES OF THE STUDY

The following are the objectives of the study.

1. To present the different leadership style in the organization.
2. To present the socio economic factors of the sample respondents.
3. To find the relationship between Relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation
4. To offer suggestions to the employees those are working in the organization.

SAMPLING

The present study conducted with selected organizations in Tiruchirappalli, manufacturing and engineering are taken for this study. The researcher distributed 250 structured questionnaire in the study area which designed for data collection. Convenient sampling methods adopted for data collection method. Out of that 228 questionnaires were collected back, all the 228 samples were taken for analysis.

HYPOTHESIS

There is no relationship between Relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation.

TOOLS

Percentage analysis and Correlation coefficient are used for this study as tools and analysis. The master table prepared in MS excel and uploaded in SPSS for further analysis. The tables prepared with the values which derived from SPSS were taken for analysis.

ANALYSIS

Percentage analysis used to present the socio economic profile of the sample respondents.

Table No: 1

Age group of the respondents

Sl. No.	Age group	Number of respondents	Percentage
1	Less than 30 years	37	16.23

2	31 years to 40 years	62	27.19
3	41 years to 50 years	77	33.77
4	Above 50 years	52	22.81
Total		228	100

Source : Primary data

The above table shows the age group of the sample respondents, out of 228 sample respondents, out of 228 respondents, thirty seven (16.23%) respondents are less than 30 years old. Sixty two (27.19%) respondents are between 31 years and 40 years. Seventy seven (33.77%) respondents are between 41 years and 50 years and remaining fifty two (22.81%) respondents are above 50 years old. Majority (33.77%) of the respondents are between 41 years and 50 years.

Table No:2
Gender of the respondents

Sl. No.	Gender	Number of respondents	Percentage
1	Male	137	60.09
2	Female	91	39.91
3	Transgender	0	0
Total		228	100

Source : Primary data

The above table presents the gender of the respondents, out of 228 sample respondents, one hundred and thirty seven (60.09%) respondents are male and remaining ninety one (39.91%) respondents are female, 3rd option is transgender, which given to the respondents, during the data collection there were no transgender in the study area. Majority (60.09%) of the respondents are male.

Table No:3
Marital status of the respondents

Sl. No.	Marital status	Number of respondents	Percentage
1	Married	117	51.32
2	Unmarried	91	39.91
3	Divorce / Widow	20	8.77
Total		228	100

Source : Primary data

The above table shows the marital status of the respondents, out of 228 sample respondents, one hundred and seventeen (51.32%) are married. Ninety one (39.91%) respondents are unmarried and the remaining twenty (8.77%) are unmarried. Majority (51.32%) of the respondents are married.

Table No:4
Family type of the respondents

Sl. No.	Family type	Number of respondents	Percentage
1	Joint family	103	45.18
2	Nuclear family	125	54.82
Total		228	100

Source : Primary data

The above table shows the family type of the respondents, out of 228 sample respondents, one hundred and three (45.18%) respondents are joint families and remaining one hundred and twenty five (54.82%) respondents are nuclear families. Majority (54.82%) respondents are nuclear families.

Table No: 5
Family members of the respondents

Sl. No.	Family members	Number of respondents	Percentage
1	3 members	78	34.21
2	4 to 5 members	44	19.30
3	Above 5 members	106	46.49
Total		228	100

Source : Primary data

The above table shows the family members of the respondents, out of 228 sample respondents, seventy eight (34.21%) respondents' family members are 3. Forty four (19.30%) respondents' family members are 4 to 5 and remaining one hundred and six (46.49%) respondents' family members are above 5. Majority (46.49%) of the respondents' family members are above 5.

Table No: 6
Years of experience of the respondents

Sl. No.	Years of experience	Number of respondents	Percentage
1	Less than 5 years	63	27.63
2	6 to 10 years	78	34.21
3	Above 10 years	87	38.16
Total		228	100

Source : Primary data

The above table shows the years of experience in their organization, out of 228 sample respondents sixty three (27.63%) respondents are having less than 5 years of experience. Seventy eight (34.21%) respondents are having 6 years to 10 years of experience and remaining eighty seven (38.16%) respondents are having above 10 years of experience. Majority (38.16%) of the respondents are above 10 years of experience.

Effectiveness of leadership style

Table No: 7
Effectiveness of leadership style

Sl. No.	Effectiveness of leadership style	Number of respondents	Percentage
1	High level	62	27.19
2	Moderate level	119	52.19
3	Low level	47	20.62
Total		228	

Source : Primary data

The above table shows the level of effectiveness of leadership style which the organizations following, Out of 228 sample respondents sixty two (27.19%) respondents are felt a high level of leadership effectiveness. One hundred and nineteen (52.19%) respondents are felt moderate level of leadership effectiveness and remaining forty seven (20.62%) respondents are felt low level of leadership effectiveness. Majority (52.19%) of the respondents are felt moderate level of leadership effectiveness.

Effectiveness of leadership on Employee Motivation

Table No: 8

Effectiveness of leadership on Employee Motivation

Sl. No.	Effectiveness of leadership on Employee Motivation	Number of respondents	Percentage
1	High level	55	24.12
2	Moderate level	124	54.39
3	Low level	49	21.49
Total		228	100

Source : Primary data

The above table shows the level of effectiveness of leadership on employee's motivation of the respondents, out of 228 respondents, fifty five (24.12%) respondents felt low level of effectiveness of leadership. One hundred and twenty four (54.39%) respondents are felt moderate level of effectiveness of leadershipand remaining forty nine (21.49%) respondents felt high level of effectiveness of leadership. Majority (54.39%) of the respondents are felt moderate level of effectiveness of leadership.

Correlation

The following table presented the relationship between the Relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation, the values presented in the table which were derived from SPSS.

Table No: 9

Correlation – Relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation

		Relationship between Effectiveness of leadership style	Effectiveness of leadership on Employee Motivation
Relationship between Effectiveness of leadership style	Pearson Correlation	1	
	Sig. (2-tailed)		
	N	228	
Effectiveness of leadership on Employee Motivation	Pearson Correlation	.933**	1
	Sig. (2-tailed)	.001	
	N	228	500

*. Correlation is significant at the 0.05 level (2-tailed).

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

The Relationship between Effectiveness of leadership style (0.001) has positive and significant relationship with Effectiveness of leadership on Employee Motivation improvement due to training at 1% significant level.

Hypothesis

There is no relationship between relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation.

Result

The above correlation test shows that there is positive and significant relationship between Effectiveness of leadership style and Effectiveness of leadership on Employee Motivation. Hence, the hypothesis has been rejected at 1% significant level.

It concluded that the leadership style which following by the organizations are motivate the employees to perform well and give best in their job position.

FINDINGS OF THE STUDY

The following are the findings of the study

1. Majority (33.77%) of the respondents are between 41 years and 50 years.

2. Majority (60.09%) of the respondents are male.
3. Majority (51.32%) of the respondents are married.
4. Majority (54.82%) respondents are nuclear families.
5. Majority (46.49%) of the respondents' family members are above 5.
6. Majority (38.16%) of the respondents are above 10 years of experience.
7. Majority (52.19%) of the respondents are felt moderate level of leadership effectiveness.
8. Majority (54.39%) of the respondents are felt moderate level of effectiveness of leadership.
9. The leadership style which following by the organizations are motivate the employees to perform well and give best in their job position.

SUGGESTIONS TO MANAGEMENT

1. **Adopt Participative Leadership :**Encourage managers to involve employees in decision-making. This enhances ownership, trust, and intrinsic motivation among employees.
2. **Provide Continuous Feedback and Recognition:** Leaders should regularly recognize employee efforts and provide constructive feedback. Recognition improves morale and motivates employees to perform better.
3. **Promote Transformational Leadership Practices:** Encourage leaders to inspire, guide, and support employees with a clear vision. This leadership style fosters innovation, commitment, and higher productivity.
4. **Conduct Leadership Development Programs:** Organize regular training programs to improve managerial communication, emotional intelligence, and motivational skills. Well-trained leaders can adapt their style to suit different employee needs.
5. **Create a Supportive Work Environment:** Establish open communication channels and ensure that leaders are approachable. A positive environment increases motivation and reduces workplace stress.

SUGGESTIONS TO EMPLOYEES

1. **Maintain Open Communication with Leaders:** Employees should freely express ideas, challenges, and feedback. Open communication helps leaders understand employee needs and provide better support.
2. **Develop Self-Motivation and Initiative:** Employees should take responsibility for their own growth and performance. Self-driven employees are more adaptable to various leadership styles.
3. **Participate Actively in Team Decisions:** Employees should contribute actively in discussions and organizational activities. This strengthens collaboration and improves motivation through involvement.
4. **Seek Constructive Feedback :**Regularly seek feedback from supervisors to improve performance and align with organizational goals. It helps employees feel guided and valued.
5. **Embrace Organizational Vision and Goals:** Employees should align personal goals with the organization's objectives. Shared purpose enhances commitment and long-term motivation.

CONCLUSION

The present study conducted by the researcher are Tiruchirappalli, with samples of 228. The data collected from the employees those are working in organization in the study area. The employees are should understand the purpose of being and working in the organization, the organizational objectives and their own objectives should be clearly explained to the employees, it is organizations duty. The leaders are there to lead the team to achieve the organizational goals. The organizations needs an efficient leader to lead the organization, the leaders are working out with men and machine, the machines are periodically updating by the organizations, the same time the men should up skill periodically. These activities should lead by the leaders. The leaders' motivation having effective result in employees' performance and activities. This study shows the effectives leadership style and which benefits to the employees.

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PERFORMANCE EVALUATION OF SELECTED PUBLIC SECTOR BANKS IN INDIA USING CAMELSC MODEL

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ABSTRACT

This article about the CAMELSC framework is unique and has either been overlooked or only sparsely examined within academic circles. We chose to investigate this model using the accessible data, market insights, and other pertinent information among the selected PSBs. This study evaluates the performance of five major Public Sector Banks using Composite CAMELSC score improved from 1.9–2.1 in FY2021 to 1.5–1.7 in FY2025, reflecting recovery after COVID and RBI-led reforms. Capital adequacy remained stable at a score of 2, with CRAR. Asset quality showed the strongest gains, with NNPA from 2.3% to 0.8%, thanks to IBC resolutions, write-offs, and improved ECL practices, improving the score from 3 to 2. Management score stood at 2 as the cost-to-income ratio declined slightly through branch optimization and digital efficiencies. Earnings strengthened, with ROA rising from 0.4% to 1.0%, ROE from 6% to 15%, and NIM steady at 2.8–3.1%, lifting the score from 2–3 to 1–2; net profit reached ₹1.4 lakh crore in FY2024. Liquidity stayed strong with a score of 1, supported by an LCR of 125–135% and CASA around 38–40%, further aided by a CRR cut to 3% in 2025 releasing ₹2.7 lakh crore liquidity. Sensitivity to market risk improved to 1–2 as IRRBB fell below 2.5% amid stable repo rates at 5.5%. Systems maintained a score of 2, with digital transactions rising and AI fraud detection tools, while IT spending increased fair bit of operating costs. Compliance was rated at 1, with minor penalties resolved and full conformity to Basel III, digital lending regulations, and the ".bank.in" domain mandate.

KEYWORDS: CAMELSC, SBI, BoB, BoI, PNB, Canara Bank, PSBs, Composite Scores, Bank's Performance, Ratios, Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, Sensitivity to Market Risk, Systems, and Compliance

INTRODUCTION

India's banking landscape is primarily divided into scheduled and non-scheduled banks, with scheduled commercial banks playing the leading role. According to the most recent Reserve Bank of India statistics, the banking sector comprises 12 public sector banks, 21 private sector institutions, 44 foreign banks, 43 regional rural banks, 11 small finance banks, and 6 payment banks. Public sector banks, where the government maintains majority ownership of more than 50%, include major institutions such as State Bank of India, Punjab National Bank, and Bank of Baroda. These government-owned banks control approximately 60% of the market in both deposits and lending, positioning them as key vehicles for rolling out government initiatives like the Pradhan Mantri Jan Dhan Yojana and Atmanirbhar Bharat programs. Following the economic liberalization of 1991, private sector banks such as HDFC Bank, ICICI Bank, and Axis Bank have emerged as significant players, concentrating their efforts on retail and corporate lending while driving innovation and operational efficiency throughout the sector. Meanwhile, international banks like HSBC and Citibank contribute valuable global expertise to the Indian market, though they maintain a relatively modest market presence of 5-7%.

The banking sector has demonstrated remarkable growth, with total assets surpassing ₹250 lakh crore (roughly $3 trillion) in the 2025 financial year. Public sector banks have achieved particularly impressive credit growth of 12.2% year-over-year, marking their strongest performance since 2010 and exceeding the growth rates of their private counterparts. This expansion stems from India's post-pandemic economic recovery, increasing consumer spending power, and substantial government investment in infrastructure development. Despite these positive trends, the banking sector faces several ongoing challenges. These include evolving regulatory requirements, growing cybersecurity concerns, and intensifying competition from financial technology companies such as Paytm and PhonePe. The International Monetary Fund's 2025 Financial Sector Assessment Program acknowledges the overall stability of India's banking system, recognizing improvements in capital reserves and liquidity management. However, the assessment also identifies potential risks, including climate-related challenges and geopolitical uncertainties that could impact future stability.

Digitalization on PSBS and the Banking System

The digital revolution has fundamentally transformed public sector banks in India, converting traditional brick-and-mortar institutions into technologically advanced financial hubs while simultaneously tackling their longstanding operational challenges. These government-owned banks, which previously struggled with innovation due to their bureaucratic nature, have experienced significant improvements in operational efficiency through digital adoption. A prime example is the State Bank of India's YONO platform, introduced in 2017, which has attracted 80 million users by 2025 and provides comprehensive services ranging from loans to investment options, resulting in a 40% reduction in physical branch visits. Similarly, Bank of Baroda and Punjab National Bank have successfully implemented UPI systems and artificial intelligence-powered credit assessment tools, leading to substantial reductions in non-performing assets through advanced predictive analytics. The gross non-performing asset ratio for public sector banks has dramatically improved from 9.5% in 2018 to just 3.1% in 2025, supporting the Reserve Bank of India's Basel III compliance initiatives and enhancing asset quality assessments within regulatory frameworks.

Digital transformation has revolutionized financial inclusion across the country, effectively bridging the gap between urban and rural populations. Currently, 90% of Indian adults have access to banking services through accounts linked to the Pradhan Mantri Jan Dhan Yojana program. Previously underserved groups, particularly women and rural communities, now benefit from micro-insurance products and pension schemes accessible through mobile applications, significantly improving overall financial inclusion metrics. The economic impact has been substantial, with UPI's cost-effective model featuring minimal transaction fees democratizing financial services and enabling small businesses to accept digital payments effortlessly. This transformation has contributed an estimated 1-2% annual boost to GDP growth through more efficient transaction processing.

The efficiency improvements are clearly measurable, with digital channels reducing processing costs by 30-50% compared to traditional banking methods, while public sector banks reported impressive 20% year-over-year profit growth in the 2025 financial year. Innovation initiatives, include ng blockchain technology for international remittances and generative artificial intelligence for fraud prevention such as the RBI's MuleHunter.ai system, have strengthened cybersecurity measures. However, challenges persist, with over 1,000 data privacy incidents reported in 2024, prompting regulatory responses including the comprehensive 2025 Digital Personal Data Protection Act that mandates stronger security frameworks.

Despite these advances, digitalization presents significant obstacles for public sector banks. They continue to struggle with outdated IT infrastructure, necessitating investments of approximately ₹50,000 crore by 2027 for comprehensive system upgrades. Cybersecurity threats have surged by 300% since 2016, with phishing attacks and ransomware particularly targeting vulnerable rural banking locations. The persistent digital divide, characterized by only 60% internet connectivity in rural areas, continues to exclude elderly populations and individuals with limited literacy skills. Additionally, intense competition from fintech companies has eroded public sector banks' retail market share from 70% in 2016 to 40% currently, forcing strategic partnerships such as SBI's collaboration with PhonePe. The transmission of monetary policy has become more effective through digital payment systems, enabling faster implementation of interest rate changes. The Reserve Bank of India's 100 basis point rate reductions in 2025 reached 80% of loan portfolios within months of implementation. However, excessive dependence on digital infrastructure could potentially amplify systemic risks, as demonstrated during the 2024 UPI system outage that affected millions of users nationwide.

CAMELSC ADAPTATION IN INDIA

The CAMELSC rating system is an extended version of the original U.S.-based CAMELS framework, specifically tailored for bank supervision in India. While CAMELS (Capital Adequacy, Asset Quality, Management, Earnings, Liquidity, and Sensitivity to Market Risk) focuses on core financial and operational risks, the Indian adaptation adds two critical components "Systems" (S) and "Compliance" (C) to address unique aspects of regulatory oversight, internal processes, and adherence to local laws. This makes CAMELSC a more comprehensive tool for evaluating the overall soundness of banks in a complex, rapidly evolving financial ecosystem like India's.

The Reserve Bank of India (RBI) introduced, in 1998, this CAMELSC system builds on the recommendations of the Padmanabhan Working Group (1995). It supplements traditional on-site inspections with off-site surveillance, enabling the RBI to monitor risks proactively and intervene early in underperforming institutions. Unlike the U.S. version, which is kept strictly confidential, CAMELSC ratings in India are also not publicly disclosed to prevent market panic but are used internally for supervisory actions, such as increased scrutiny, capital infusions, or even mergers for weaker banks.

PURPOSE AND NEED FOR CAMELSC IN INDIA

When inspecting commercial banks, cooperative banks, and non-banking financial companies (NBFCs) annually or every two years, the RBI uses CAMELSC. It aids in setting supervisory resource priorities. Under RBI's framework, weaker banks (composite 4-5) may be subject to prompt corrective actions (PCA), such as limitations on executive bonuses, branch expansion, or dividends, while stronger banks (composite 1-2) are subject to less oversight. Due to past events such as the 2018 IL&FS crisis and current NPA difficulties, where "Systems" and "Compliance" components have brought attention to governance shortcomings in public sector banks, this adaptation is especially pertinent in India.

IMPORTANCE AND LIMITATIONS

Through early risk detection, accountability, and alignment with international standards such as Basel III, CAMELSC improves financial stability while meeting the needs of India (e.g., compliance with the Banking Regulation Act, 1949). It has aided in reforms such as the push for digital compliance after COVID and the 2019 PCA exits for a number of banks.

Its backward-looking approach (depending on historical data) and possible neglect of customer-centric or ESG factors are among its drawbacks. In order to stay up with India's digital economy, recent RBI discussions (as of 2023–2024) examine additional improvements, such as incorporating AI-driven analytics into "Systems" ratings. All things considered, CAMELSC continues to be a pillar of the RBI's risk-based supervision, encouraging a robust banking industry that is essential to the expansion of India's GDP.

REVIEW OF LITERATURE

This research investigates how each component of the CAMELS framework influences overall banking performance. The study employs Q-Tobin's ratio as the primary performance measurement indicator, utilizing data extracted from the annual financial statements of an Iranian banking institution. Through comprehensive analysis, a predictive model has been developed to demonstrate these relationships. The CAMELS evaluation system enables banks to concentrate on risk management strategies and essential financial ratios, allowing them to proactively manage and mitigate potential financial crises. This research specifically examines and interprets the impact that each CAMELS category has on institutional performance, revealing significant correlations between all categories and the Q-Tobin's ratio as a measure of banking performance. A critical aspect of implementing this analytical model involves identifying and focusing on the most influential indicators and elements within each category. The selection of appropriate indicators can vary significantly across different industries, presenting both challenges and opportunities in terms of implementation and interpretation of results. (Malihe Rostami, 2015)

This research aims to assess the financial soundness of Bangladesh's NBFIs using the CAMELS evaluation model and to forecast their future rating performance. The CAMELS framework was selected as the primary analytical tool due to its comprehensive approach to evaluating financial institution performance across six key dimensions: Capital adequacy, Asset quality, Management efficiency, Earnings, Liquidity, and Sensitivity to market risk. The study's findings revealed the performance distribution of the 33 NBFIs as of June 2016: one institution achieved a "Strong" rating (1), fifteen received "Satisfactory" ratings (2), thirteen were classified as "Fair" (3), and three fell into the "Marginal" category (4). These results demonstrate the varying levels of financial health across the sector. The study acknowledges limitations due to insufficient available data, suggesting that enhanced information accessibility would enable more accurate performance assessments. The research concludes that government intervention through improved regulatory frameworks is necessary to strengthen this important financial sector. (Rozina Akter, et, al., 2018)

This study focuses on the main determinants influencing the performance of Vietnamese commercial banks between 2009 and 2020, within a changing economic environment that intensifies scrutiny on banking efficiency. Using the CAMELS model as a foundation, the research applies the System Generalised Method of Moments (SGMM) to ensure reliable and precise results. It analyzes ten statistically significant variables spanning all CAMELS components. Key findings highlight the relationship between ownership structures and bank performance, emphasizing improvements needed in state-owned banks' financial soundness and operational efficiency. The study identifies important performance drivers, including past performance, capital adequacy, asset quality, management efficiency, earnings, liquidity, market sensitivity, ownership traits, GDP growth, and inflation. By integrating ownership factors with CAMELS variables, the research offers valuable insights into their combined effects on different institutional types, though it notes the necessity for further exploration of ownership's specific impacts on individual bank metrics. (Quoc Trung, N. K., 2021).

RESEARCH METHODOLOGY

Period of Study & Sources of Data

The period covered from the year 2020 - 2021 to 2024 – 2025. Secondary data was collected for the selected public sector banks (SBI, BoB, BoI, PNB, Canara Bank). Data sources are gathered from and derived scores are based on public data from RBI, bank reports, Money control, ICRA, research articles, online materials and press releases.

RESEARCH OBJECTIVES

1. To examine the public sector banks, performance among the selected banks using CAMELSC Rating model.
2. To compare performance using Composite rating among the selected banks (SBI, BoB, BoI, PNB, Canara Bank).

LIMITATION AND SCOPE OF THE STUDY

In this article we studied only handful of public sector banks, covered for the period 2020 - 2021 to 2024 – 2025. In this article the Banks performance was investigated using. CAMELSC Rating model. The CAMELSC analysis is one of its kind, this was either never analysed nor very limited analysis among the scholar fraternity. We decided to explore this model with the available data and market updates and other relevant information.

The findings of study will guide the investors, shareholders, researchers, and decision makers in their decisions over banks financial strengths and other parameters like internal controls and regulatory adherence.

CAMELSC Model

The first six components align closely with the global CAMELS model, while the additional "S" and "C" reflect India's emphasis on robust internal controls and regulatory adherence amid challenges like high non-performing assets (NPAs), digital banking growth, and compliance with diverse statutes. The system rates banks on a scale of 1 to 5 for each component (1 being the strongest/soundest and 5 the weakest/critical), with an overall composite score determining the bank's health: scores of 1–2 indicate strong institutions, 3 suggests moderate concerns, and 4–5 flags "problem banks" requiring corrective measures.

Table -1

Component	Description	Key Evaluation Factors
Capital Adequacy (C)	Assesses the bank's capital buffer to absorb losses and support growth.	Risk-weighted capital ratios (e.g., CRAR under Basel norms), leverage, and stress test resilience.
Asset Quality (A)	Evaluates the risk and quality of the bank's loan/investment portfolio.	NPA levels, provisioning coverage, diversification, and recovery mechanisms.
Management (M)	Gauges the effectiveness of the board and senior leadership.	Strategic planning, risk management, governance, and response to RBI directives.
Earnings (E)	Measures profitability and its sustainability.	Return on assets/equity, net interest margins, cost-income ratios, and trend analysis.
Liquidity (L)	Reviews the ability to meet short- and long-term obligations.	Liquidity coverage ratio (LCR), funding stability, and access to interbank markets.
Sensitivity to Market Risk (S1)	Analyzes vulnerability to external shocks like interest rates or forex fluctuations.	Exposure to derivatives, equities, commodities, and scenario-based modeling.

Systems (S2)	Examines the robustness of internal operational systems and controls.	IT infrastructure, cybersecurity, fraud prevention, and process efficiency (e.g., digital banking resilience).
Compliance (C2)	Checks adherence to laws, regulations, and ethical standards.	Compliance with RBI guidelines, anti-money laundering (AML), KYC norms, and environmental/ social regulations.

RESULTS AND DISCUSSION

Comparative CAMELSC trends and Analysis among the Public Sector Banks (FY2021–FY2025). This analysis compares public sector banks (SBI, BoB, BoI, PNB, Canara) from FY2021 to FY2025. The PSBs scores are classified with rang as 1.5–2.5 (Strong to Satisfactory), improving from legacy NPAs but lagging in efficiency and digital adoption. Basel III compliance aided GNPA declines; RBI's 2025 CRR cut (to 3%) supports FY2025 growth.

Table - 2

Year	Component	SBI	BoB	BoI	PNB	Canara	Insights
FY2021	Capital Adequacy (C)	2 (CRAR 13.74%)	2 (CRAR 14.0%)	2 (CRAR 14.5%)	2 (CRAR 13.5%)	2 (CRAR 14.2%)	PSBs at 13–14%, above 11.5% min
	Asset Quality (A)	3 (GNPA 4.98%, NNPA 1.50%)	3 (GNPA 6.0%, NNPA 1.8%)	3 (GNPA 7.5%, NNPA 2.0%)	3 (GNPA 9.7%, NNPA 3.5%)	3 (GNPA 6.9%, NNPA 2.5%)	High GNPA from COVID; avg. 7%,
	Management (M)	2 (CIR 53.59%)	2 (CIR 50%)	2 (CIR 52%)	2 (CIR 46.91%)	2 (CIR 48%)	CIR ~50%, higher due to scale costs.
	Earnings (E)	2 (ROA 0.45%, NIM 2.44%)	2 (ROA 0.5%, NIM 2.7%)	3 (ROA 0.3%, NIM 2.6%)	3 (ROA 0.16%, NIM 2.41%)	2 (ROA 0.4%, NIM 2.7%)	ROA ~0.4%, provisions hit.
	Liquidity (L)	1 (LCR 156%, CASA 45.39%)	1 (LCR 130%, CASA 35%)	1 (LCR 125%, CASA 40%)	1 (LCR 140%, CASA 44.54%)	1 (LCR 135%, CASA 32%)	Strong LCR / CASA; avg. CASA 39%.
	Sensitivity to Market Risk (S1)	2 (IRRBB ~3%)	2 (IRRBB ~2.5%)	2 (IRRBB ~2.8%)	2 (IRRBB ~3%)	2 (IRRBB ~2.7%)	Higher exposure to rates; corporate loans drag.
	Systems (S2)	2 (45% digital, IT spend 7%)	2 (50% digital, IT spend 8%)	2 (40% digital, IT spend 6%)	2 (45% digital, IT spend 7%)	2 (45% digital, IT spend 7%)	Lagging digital 45% .
	Compliance (C2)	1 (Clean)	1 (Clean)	2 (Minor fine)	2 (KYC issues)	1 (Clean)	Mostly clean; PCA exits improve.
	Composite	1.90	1.90	2.10	2.10	1.90	Avg. 2.0 (Satisfactory);

							COVID impact.
FY2022	Capital Adequacy (C)	2 (CRAR 13.83%)	2 (CRAR 14.2%)	2 (CRAR 15.0%)	2 (CRAR 14.0%)	2 (CRAR 14.5%)	Slight improvement.
	Asset Quality (A)	3 (GNPA 3.97%, NNPA 1.02%)	3 (GNPA 4.7%, NNPA 1.4%)	3 (GNPA 6.2%, NNPA 1.6%)	3 (GNPA 8.3%, NNPA 2.8%)	3 (GNPA 5.4%, NNPA 1.9%)	GNPA down ~20%; avg. 5.7%.
	Management (M)	2 (CIR 57.91%)	2 (CIR 48%)	2 (CIR 51%)	2 (CIR 49.37%)	2 (CIR 50%)	CIR stable ~50%.
	Earnings (E)	2 (ROA 0.63%, NIM 2.42%)	2 (ROA 0.8%, NIM 2.8%)	2 (ROA 0.5%, NIM 2.7%)	3 (ROA 0.26%, NIM 2.18%)	2 (ROA 0.6%, NIM 2.8%)	ROA ~0.6%, improving but low.
	Liquidity (L)	1 (LCR 147%, CASA 44.51%)	1 (LCR 128%, CASA 36%)	1 (LCR 122%, CASA 41%)	1 (LCR 142%, CASA 46.55%)	1 (LCR 130%, CASA 33%)	CASA avg. 40%; strong buffers.
	Sensitivity to Market Risk (S1)	2 (IRRBB ~2.8%)	2 (IRRBB ~2.3%)	2 (IRRBB ~2.5%)	2 (IRRBB ~2.8%)	2 (IRRBB ~2.5%)	Moderate improvement.
	Systems (S2)	2 (47% digital, IT spend 7%)	2 (52% digital, IT spend 8%)	2 (42% digital, IT spend 6%)	2 (47% digital, IT spend 7%)	2 (47% digital, IT spend 7%)	Gradual digital push.
	Compliance (C2)	1 (Clean)	1 (Clean)	1 (Resolved)	1 (Improved)	1 (Clean)	PCA exits for some.
	Composite	1.80	1.80	1.90	2.00	1.80	Avg. 1.90; recovery phase.
FY2023	Capital Adequacy (C)	2 (CRAR 14.68%)	2 (CRAR 15.0%)	2 (CRAR 15.5%)	2 (CRAR 14.5%)	2 (CRAR 15.0%)	CRAR ~15%; closing gap.
	Asset Quality (A)	2 (GNPA 2.78%, NNPA 0.67%)	2 (GNPA 3.8%, NNPA 1.0%)	3 (GNPA 5.0%, NNPA 1.2%)	3 (GNPA 6.5%, NNPA 2.0%)	2 (GNPA 4.9%, NNPA 1.5%)	GNPA avg. 4.6%; down 20%.
	Management (M)	2 (CIR 53.86%)	2 (CIR 47%)	2 (CIR 50%)	2 (CIR 51.69%)	2 (CIR 49%)	CIR ~50%.
	Earnings (E)	2 (ROA 0.91%, NIM 2.62%)	2 (ROA 0.9%, NIM 3.0%)	2 (ROA 0.6%, NIM 2.8%)	3 (ROA 0.17%, NIM 2.35%)	2 (ROA 0.7%, NIM 2.9%)	ROA ~0.7%; provisions ease.
	Liquidity (L)	1 (LCR 137%, CASA 42.66%)	1 (LCR 125%, CASA 37%)	1 (LCR 120%, CASA 42%)	1 (LCR 135%, CASA 41.99%)	1 (LCR 128%, CASA 34%)	CASA avg. 39%.

	Sensitivity to Market Risk (S1)	2 (IRRBB ~2.5%)	2 (IRRBB ~2.0%)	2 (IRRBB ~2.3%)	2 (IRRBB ~2.5%)	2 (IRRBB ~2.3%)	Rate cycle impact.
	Systems (S2)	2 (50% digital, IT spend 8%)	2 (55% digital, IT spend 8%)	2 (45% digital, IT spend 7%)	2 (50% digital, IT spend 8%)	2 (50% digital, IT spend 8%)	50% digital; catching up.
	Compliance (C2)	1 (Clean)	1 (Clean)	1 (Clean)	1 (Clean)	1 (Clean)	Strong adherence.
	Composite	1.70	1.70	1.80	20	1.70	Avg. 1.80; asset quality gains.
FY2024	Capital Adequacy (C)	2 (CRAR 14.28%)	2 (CRAR 16.3%)	2 (CRAR 17.0%)	2 (CRAR 15.5%)	2 (CRAR 15.5%)	CRAR avg. 15.7%; BoI/BoB stronger.
	Asset Quality (A)	2 (GNPA 2.21%, NNPA 0.57%)	2 (GNPA 2.9%, NNPA 0.7%)	3 (GNPA 5.0%, NNPA 1.2%)	3 (GNPA 5.7%, NNPA 1.5%)	2 (GNPA 3.3%, NNPA 0.9%)	GNPA avg. 3.8%; down 17%.
	Management (M)	2 (CIR 59.01%)	2 (CIR 47.7%)	2 (CIR 51.7%)	2 (CIR 53.37%)	2 (CIR 52%)	CIR ~52%; operational costs.
	Earnings (E)	2 (ROA 0.98%, NIM 2.58%)	1 (ROA 1.13%, NIM 3.2%)	2 (ROA 0.71%, NIM 2.9%)	2 (ROA 0.52%, NIM 2.56%)	2 (ROA 1.00%, NIM 2.9%)	ROA ~0.9%; BoB leads.
	Liquidity (L)	1 (LCR 136%, CASA 39.89%)	1 (LCR 121%, CASA 38%)	1 (LCR 116%, CASA 43%)	1 (LCR 119%, CASA 40.33%)	1 (LCR 123%, CASA 31%)	LCR avg. 123%; CASA 38%.
	Sensitivity to Market Risk (S1)	2 (IRRBB ~2.3%)	2 (IRRBB ~2%)	2 (IRRBB ~2.5%)	2 (IRRBB ~2.7%)	2 (IRRBB ~2.5%)	Moderate; stress tests passed.
	Systems (S2)	2 (50% digital, IT spend 8%)	2 (55% digital, IT spend 8%)	2 (45% digital, IT spend 7%)	2 (50% digital, IT spend 8%)	2 (50% digital, IT spend 8%)	Digital 50%; investments rising.
	Compliance (C2)	1 (Clean)	2 (₹61L fine)	1 (Clean)	2 (₹2 Cr fine)	1 (Clean)	Minor fines for some.
	Composite	1.70	1.60	1.80	1.90	1.70	Avg. 1.70; profitability up.
FY2025	Capital Adequacy (C)	2 (CRAR 14.5%)	2 (CRAR 16.8%)	2 (CRAR 16.7%)	2 (CRAR 15.8%)	2 (CRAR 16.0%)	CRAR avg. 16%; capital infusions.

	Asset Quality (A)	2 (GNPA 2.0%, NNPA 0.5%)	2 (GNPA 2.9%, NNPA 0.7%)	2 (GNPA 3.7%, NNPA 0.9%)	2 (GNPA 4.0%, NNPA 1.0%)	2 (GNPA 2.9%, NNPA 0.8%)	GNPA avg. 3.1%; Q2 improvements.
	Management (M)	2 (CIR 51.63%)	2 (CIR 46%)	2 (CIR 50%)	2 (CIR 53%)	2 (CIR 50%)	CIR ~50%; efficiency gains.
	Earnings (E)	1 (ROA 1.06%, NIM 2.50%)	1 (ROA 1.2%, NIM 3.1%)	2 (ROA 0.8%, NIM 2.8%)	2 (ROA 0.91%, NIM 2.35%)	1 (ROA 1.1%, NIM 2.8%)	ROA ~1.0%.
	Liquidity (L)	1 (LCR 135%, CASA 38.71%)	1 (LCR 119%, CASA 37%)	1 (LCR 128%, CASA 42%)	1 (LCR 120%, CASA 40%)	1 (LCR 125%, CASA 32%)	LCR avg. 125%; CRR cut aids.
	Sensitivity to Market Risk (S1)	1 (IRRBB ~2%)	1 (IRRBB ~1.8%)	2 (IRRBB ~2.2%)	2 (IRRBB ~2.4%)	1 (IRRBB ~2.0%)	Lower with rate cuts.
	Systems (S2)	2 (52% digital, IT spend 8%)	2 (56% digital, IT spend 9%)	2 (46% digital, IT spend 7%)	2 (51% digital, IT spend 8%)	2 (51% digital, IT spend 8%)	Digital ~50%; AI push.
	Compliance (C2)	1 (Clean)	1 (Clean)	1 (Clean)	1 (Clean)	1 (Clean)	No major issues.
	Composite	1.50	1.50	1.60	1.70	1.50	Avg. 1.60; best year for PSBs.

During the financial year 2021, public sector banks in India experienced a phase of careful steadiness while dealing with the unprecedented challenges brought by the COVID-19 pandemic, as revealed through their CAMELS assessment. These banks maintained reasonably strong capital positions, keeping their capital adequacy ratios between 13.5% and 14.5%, which comfortably exceeded the required minimum of 11.5%. The quality of their loan portfolios remained deeply troubling throughout this period. Every bank received concerning ratings due to their high levels of bad loans, which averaged around 7%. This troublesome situation clearly demonstrated how the pandemic continued to impact their lending businesses long after the initial crisis began.

When it came to operational efficiency, these banks maintained steady but unremarkable performance. Their operational costs consumed roughly 50% of their income. This difference largely stemmed from their massive scale and the burden of outdated cost structures that had accumulated over decades of operation.

Profitability proved to be another significant challenge during this period. The banks struggled with extremely low asset returns of approximately 0.4%, with their earnings performance receiving mixed ratings. The primary culprit behind these weak profits was the substantial amount of money they needed to set aside for potential loan losses, which severely limited their ability to generate healthy returns.

On a more positive note, these banks demonstrated exceptional strength in maintaining adequate cash flows and funding. They earned top marks across the board for liquidity management, supported by liquidity coverage ratios well above 100% and current account savings account ratios averaging 39%. This strong position ensured they had reliable access to low-cost funding sources.

Their exposure to market risks appeared manageable, with interest rate risk measures falling between 2.5% and 3%, indicating they could reasonably handle fluctuations in market conditions. The banks also made steady progress in embracing digital technology, achieving 40-50% digital adoption rates and maintaining consistent investments in information technology.

Regulatory compliance remained largely solid, with most banks maintaining clean records except for minor issues. Several banks even managed to successfully exit the regulatory oversight framework known as Prompt Corrective Action, demonstrating improved financial health.

The financial year 2022 marked a turning point for India's public sector banks, demonstrating steady improvement and early indicators of recovery following several challenging years. This comprehensive assessment reveals a banking sector that was beginning to regain its footing while still working through persistent structural challenges.

Capital strength showed modest but meaningful improvement during this period, with banks maintaining capital adequacy ratios between 13.83% and 15%. While this represented cautious progress in building financial buffers. Nevertheless, this improvement provided a more solid foundation for absorbing potential future losses.

Perhaps most encouragingly, the quality of loan portfolios showed significant enhancement throughout the year. Bad loans, which had plagued these banks for years, declined dramatically by nearly 20% compared to the previous year, bringing the average down to 5.7%. This substantial improvement reflected better lending practices, more effective recovery efforts, and stronger credit discipline across the sector. However, some institutions like Punjab National Bank continued to face higher stress levels, with bad loan ratios reaching 8.3%, indicating that challenges persisted unevenly across different banks.

Operational efficiency remained an area requiring attention, as these banks continued to struggle with cost management. Their operational expenses consumed between 50% and 58% of their income. This persistent gap highlighted the ongoing need for substantial operational reforms and streamlining of legacy processes that had accumulated over decades.

Profitability showed modest but positive signs of recovery during this period. Returns on assets improved to 0.6%, while net interest margins remained stable between 2.18% and 2.8%. Although these improvements were encouraging.

Liquidity management continued to be a standout strength for these institutions throughout 2022. They maintained exceptional performance in this area, supported by liquidity coverage ratios exceeding 120% and current account savings account ratios around 40%. This strong position ensured reliable access to stable, low-cost funding sources, providing a crucial competitive advantage.

Risk management capabilities also showed gradual improvement, with interest rate risk measures falling between 2.3% and 2.8%. This indicated better control over exposure to market fluctuations and more sophisticated risk management practices across the sector.

The digital transformation journey progressed steadily, though at a measured pace. Digital adoption rates ranged from 42% to 52%, supported by consistent information technology investments representing 6-8% of operational spending. While this demonstrated ongoing commitment to modernization.

Regulatory compliance performance remained largely positive throughout the year, with most banks maintaining clean records and several successfully resolving long-standing issues. Notably, multiple institutions managed to exit the Prompt Corrective Action framework, demonstrating improved governance standards and stronger regulatory discipline.

The financial year 2023 represented a significant milestone for India's public sector banks, showcasing a period of sustained recovery and notable strengthening across multiple performance dimensions. This comprehensive evaluation reveals institutions that were successfully building on the foundation laid in previous years while demonstrating measurable progress toward financial stability and operational effectiveness.

Capital strength reached encouraging levels during this period, with all banks maintaining robust capital adequacy ratios around 15%. This consistent performance across the sector, reflected in uniform ratings, demonstrated adequate financial buffers to handle potential risks and uncertainties. This indicating that public sector banks were becoming more competitive in terms of financial resilience.

Asset quality showed particularly impressive enhancement throughout 2023, emerging as one of the standout success stories of the year. Bad loans continued their downward trajectory, with the average gross non-performing assets declining to 4.6% representing another substantial 20% reduction from the previous year's levels. This remarkable improvement signaled that banks had successfully implemented better credit assessment practices, enhanced recovery mechanisms, and more effective resolution of problematic loans. While institutions like Bank of India and Punjab National Bank still reported somewhat elevated levels of stressed assets, the overall sector trend was unmistakably positive.

Operational efficiency remained relatively stable during this period, though it continued to present challenges for the sector. Cost-to-income ratios maintained their position near 50%, indicating that while banks had achieved consistency in cost management, they still faced relatively high operational expenses. This persistent gap suggested that further structural reforms and process optimization remained necessary priorities.

Profitability demonstrated modest but meaningful improvement throughout 2023. Returns on assets climbed to approximately 0.7%, supported by reduced provisioning requirements and stronger core income generation. This enhancement reflected the positive impact of improved asset quality, as banks needed to set aside less money for potential loan losses, thereby freeing up resources for profit generation.

Liquidity management continued to be a cornerstone strength for these institutions. They maintained exceptional performance in funding stability, supported by current account savings account ratios between 39% and 42%, and liquidity coverage ratios well above 120%. This strong position provided crucial operational flexibility and ensured access to stable, cost-effective funding sources, giving these banks a significant competitive advantage in uncertain market conditions.

Risk management capabilities showed steady refinement, with interest rate exposure measures falling within the 2% to 2.5% range. This controlled level of sensitivity indicated that banks had developed more sophisticated approaches to balance sheet management, enabling them to navigate changing interest rate environments more effectively while maintaining appropriate risk levels. Digital transformation efforts gained significant momentum during 2023, marking a notable acceleration in modernization initiatives. Approximately half of all banking transactions became digital, representing a substantial shift in customer behavior and service delivery capabilities. This progress was supported by sustained investments in information technology infrastructure, demonstrating management's commitment to long-term technological advancement and customer service enhancement.

Regulatory compliance remained exemplary across the sector, with all banks maintaining strong adherence to regulatory norms and governance standards. This consistent performance indicated robust internal controls, effective risk management frameworks, and strong institutional discipline in meeting supervisory expectations.

The CAMELS analysis for FY2024 indicates that India's major public sector banks SBI, Bank of Baroda, Bank of India, Punjab National Bank, and Canara Bank delivered steady performance with notable improvements in capital strength, profitability, and efficiency, though differences remain in asset quality and compliance. All banks sustained strong capital adequacy, averaging a CRAR of about 15.7%, with Bank of India and Bank of Baroda showing the strongest capital positions, reflecting effective risk management. Asset quality improved overall, with an average GNPA of 3.8%, a 17% decline year-on-year; SBI and Bank of Baroda reported the healthiest portfolios, while Punjab National Bank and Bank of India continued to carry relatively higher NPAs. Operational efficiency saw moderate gains, reflected in an average cost-to-income ratio near 52%, with Bank of Baroda leading in cost control and SBI having room for further optimization. Earning s were solid average ROA stood at 0.9% and NIM at 2.8% with Bank of Baroda outperforming peers and Punjab National Bank trailing. Liquidity remained comfortable, supported by a high average LCR of 123% and stable CASA levels around 38%, led by SBI and Bank of India. Market risk sensitivity was moderate, with IRRBB roughly between 2% and 2.7%, indicating resilience to rate fluctuations. Technology adoption progressed steadily about half of transactions are now digital and IT spending is around 7–8% pointing to ongoing modernization efforts. Compliance was generally strong, with most banks maintaining clean records aside from minor fines at Bank of Baroda and Punjab National Bank.

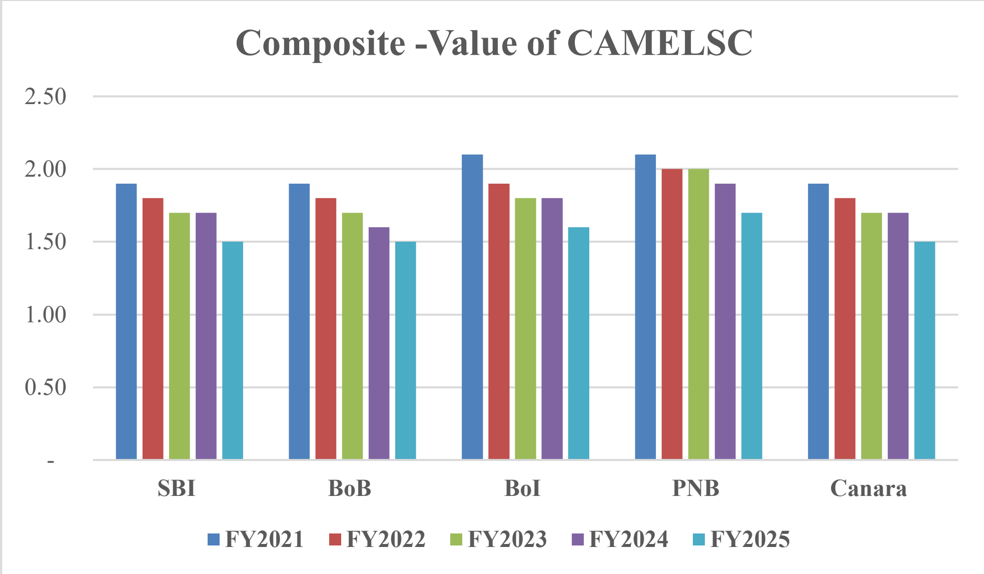
The FY2025 CAMELS review shows a strong, stable performance across India's five major public sector banks SBI, Bank of Baroda, Bank of India, Punjab National Bank, and Canara Bank making it one of the better years for PSBs in recent memory. Capital adequacy remained robust, with an average CRAR of about 16%, supported by steady internal accruals and capital injections. Asset quality improved further, with average GNPA falling to 3.1%, reflecting effective recoveries and prudent credit management. Management efficiency strengthened, evidenced by a lower average cost-to-income ratio near 50%, indicating tighter operational control and higher productivity. Earnings improved notably average ROA rose to roughly 1% bringing public banks profitability, led by Bank of Baroda and SBI. Liquidity conditions stayed comfortable, with an average LCR of 125% and stable CASA ratios aided by favorable monetary conditions. Market-risk sensitivity moderated amid lower interest-rate volatility, while digital transformation accelerated about half of transactions are now digital and IT investments continued to grow. Compliance standards were strong across the board, with no major regulatory issues reported.

Composite – Values of CMELSC

Table - 3

Year	SBI	BoB	BoI	PNB	Canara	Insights
FY2021	1.90	1.90	2.10	2.10	1.90	Avg. 2.0 (Satisfactory); COVID impact.
FY2022	1.80	1.80	1.90	2.00	1.80	Avg. 1.9; recovery phase.
FY2023	1.70	1.70	1.80	2.00	1.70	Avg. 1.8; asset quality gains.
FY2024	1.70	1.60	1.80	1.90	1.70	Avg. 1.7; profitability up.
FY2025	1.50	1.50	1.60	1.70	1.50	Avg. 1.6; best year for PSBs.

Picture - 1



The composite values of CAMELSC for major public sector banks, SBI, BoB, BoI, PNB, and Canara bank show a clear and consistent improvement from FY2021 to FY2025. During FY2021, the average composite score was 2.0, indicating a satisfactory performance level amid the challenging economic conditions caused by the COVID-19 pandemic. With the gradual recovery in FY2022, the average improved slightly to 1.9, reflecting early signs of stabilization. The trend continued in FY2023, with the average score declining to 1.8, highlighting notable gains in asset quality and reduced stress on balance sheets. By FY2024, profitability strengthened further, driving the average down to 1.7. The best performance was recorded in FY2025, with an average score of 1.6, signifying robust financial health, improved management efficiency, and strong operational resilience across public sector banks. Overall, the data underscores a progressive enhancement in performance, signaling effective reforms, prudent risk management, and the successful consolidation of the banking sector post-pandemic.

CONCLUSION

India's banking system is set for rapid expansion, aligned with the country's goal of reaching a $7 trillion GDP by 2030. This growth will be fueled by digital advancements such as the global scaling of UPI, e-Rupee pilot programs, and AI-powered personalized services. Public sector banks (PSBs) need to fast-track technology investments, address talent shortages, and form strategic partnerships with fintech firms to match the agility of private banks. Ongoing privatization and governance reforms will boost operational efficiency, while the Reserve Bank of India's Payments Vision 2025 aims to create a seamless and inclusive payments ecosystem. Comparative CAMELSC trends reveal PSBs demonstrate notable resilience, achieving their best performance in a decade with a composite score of approximately 1.6 in FY2025. As India advances toward the vision of 'Atmanirbhar Bharat', PSBs and the entire banking sector face a pivotal moment blending tradition with innovation, poised to drive a digitally empowered and inclusive economic future. For continuous updates, RBI's Financial Stability Reports and official bank disclosures serve as key references.

Public sector banks achieved composite performance scores averaging around 2.0, indicating satisfactory yet moderate results. The year 2021 highlighted their ability to maintain stability in capital strength and cash management while continuing to face ongoing challenges in profit generation, loan quality management, and digital infrastructure modernization areas requiring strategic focus for sustainable long-term growth and competitiveness.

The financial year 2022 was marked by consolidation and gradual recovery for these banks. Although issues with operational efficiency and digital modernization remained, significant improvements in asset quality, modest profitability gains, and strong liquidity created a solid foundation for improved performance in the years ahead. This period signaled the start of a recovery path that gained momentum as transformation efforts progressed.

Composite score averaging 1.80 demonstrated meaningful progress from earlier years, reflecting sustained recovery momentum. This improved rating particularly showcased notable advances in asset quality management, steady liquidity, and better earnings. The year 2023 showed that public sector banks had moved from stress and recovery into consolidation and growth, establishing a stronger base for future competitiveness in the changing banking environment.

CAMELS composite scores ranged between 1.6 and 1.9, averaging 1.7, indicating strong to satisfactory performance. Bank of Baroda, SBI, and Canara Bank stood out as top performers, while Bank of India and Punjab National Bank needed improvements, especially in asset quality and profitability. By FY2025, the sector exhibited broad financial strength, enhanced efficiency, and improved digital and compliance frameworks, signaling a more resilient and competitive phase for India’s public sector banking industry.

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A STUDY ON JOB STRESS AND ADAPTABILITY AMONG EMPLOYEES OF SELECTED PUBLIC SECTOR BANKS IN KOTTAYAM

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ABSTRACT

The banking sector in India has undergone tremendous transformation over the past two decades, driven by technological advancements, digitalisation of services, increasing customer expectations, regulatory reforms, and competitive pressures. ***The following are the objectives of the study, (i) t****o present the Personal and Employment Profile of the respondents, Stress in the Workplace and Adaptability in the Workplace, (ii) to present the Covariances and Variances of SEM Model for Job Stress and Employee Performance, (iii) to present the Covariances and Variances of SEM Model for Workplace Adaptability and Employee Performance and (iv) To suggest measures to improve employee adaptability and reduce job stress in public sector banks. The researcher conducted this present study on Kottayam, convenient sapling methods for data collection. Prepared structured questionnaire for data collection, the researcher met the each and every respondents for data collection. The score are entered in MS excel and uploaded in SPSS- AMOS for further analysis. In conclusion, job stress remains a major concern in the banking sector, but adaptability acts as a key buffer that enables employees to manage challenges more effectively. Strengthening institutional support, improving interpersonal communication, and fostering a positive work environment will help reduce stress and enhance adaptability, leading to better employee wellbeing and improved organizational performance in public sector banks in Kottayam.*

KEY WORDS : Public sector banks, job stress, work place adoptability and employees wellbeing

INTRODUCTION

The banking sector in India has undergone tremendous transformation over the past two decades, driven by technological advancements, digitalisation of services, increasing customer expectations, regulatory reforms, and competitive pressures. Public sector banks (PSBs), in particular, are faced with the dual responsibility of maintaining traditional service commitments while also adapting to modern banking practices. In this dynamic environment, employees are expected to manage higher workloads, achieve targets, handle complex customer requirements, and simultaneously adapt to new technologies such as digital banking platforms, core banking solutions, and automation tools. These continuous changes often contribute to increased levels of job stress among banking employees.

Job stress is recognised as a critical organisational challenge that directly influences employees' physical well-being, emotional stability, job satisfaction, and overall performance. In the public sector banking context, factors such as tight deadlines, staff shortages, high customer footfall, administrative responsibilities, pressure for maintaining service quality, and compliance-related tasks can intensify stress levels. Prolonged exposure to such stressors may lead to burnout, reduced efficiency, absenteeism, and decline in service quality, thereby affecting both employee productivity and the bank's competitive strength.

At the same time, adaptability has emerged as an essential competency for employees in today's uncertain work environment. Adaptability refers to the ability of individuals to adjust to new work roles, changing processes, technological advancements, and evolving organisational demands. For public sector bank employees in districts like Kottayam where customer diversity, service expectations, and digital banking usage are steadily rising adaptability becomes a key determinant of professional survival and success. Employees who can adapt quickly to changes are more likely to cope effectively with job stress, maintain performance levels, and contribute positively to organisational growth.

Kottayam district in Kerala presents a unique socio-economic setting, where public sector banks play a vital role in financial inclusion, rural development, urban banking needs, and service delivery to a highly literate population. The operational pressures and customer service expectations in this region make it an interesting context to study the relationship between job stress and employee adaptability.

This study, therefore, aims to examine the magnitude and sources of job stress among employees of selected public sector banks in Kottayam and to evaluate how adaptability helps them cope with these stressors. Understanding this relationship will provide valuable insights for designing employee-friendly HR practices, stress-management interventions, training programmes, and organisational policies that enhance both employee well-being and institutional effectiveness.

STATEMENT OF THE PROBLEM

Public sector banks in India operate in an environment characterized by increasing customer expectations, rapid digitalization, growing competition from private and fintech institutions, stringent regulatory norms, and high performance pressures. Employees working in these banks are required to adapt continuously to new technologies, evolving job roles, and rising service standards. In districts like Kottayam, where public sector banks cater to diverse customer groups and handle a significant volume of transactions, the intensity of work demands has increased considerably. As a result, employees often experience job stress arising from workload, role ambiguity, time pressure, customer handling challenges, and frequent organizational changes. Persistent stress can reduce job satisfaction, lower productivity, affect mental well-being, and lead to higher absenteeism and turnover intentions. At the same time, the ability of employees to adapt to changing work requirements such as digital banking platforms, new operational procedures, and evolving customer interactions has become crucial for organizational performance.

There were limited empirical research has been conducted to understand how job stress manifests among employees of public sector banks in Kottayam and how their level of adaptability influences or moderates this stress. It is also unclear whether demographic factors, job roles, or experience levels play a significant role in shaping stress and adaptability levels. This gap restricts bank management from designing effective stress management interventions and capacity-building programs. This study is need to systematically examine the impact of job stress, along with the extent of adaptability among employees of selected public sector banks in Kottayam. Understanding this relationship will help develop evidence-based strategies to enhance employee well-being, improve workplace efficiency, and strengthen organizational resilience.

OBJECTIVES OF THE STUDY

1. To present the Personal and Employment Profile of the respondents, Stress in the Workplace and Adaptability in the Workplace.
2. To present the Covariances and Variances of SEM Model for Job Stress and Employee Performance.
3. To present the Covariances and Variances of SEM Model for Workplace Adaptability and Employee Performance.
4. To suggest measures to improve employee adaptability and reduce job stress in public sector banks.

SAMPLING DESIGN

The researcher conducted this present study on Kottayam, convenient sapling methods for data collection. Prepared structured questionnaire for data collection, the researcher met the each and every respondents for data collection. The score are entered in MS excel and uploaded in SPSS- AMOS for further analysis.

SIMPLE PERCENTAGE ANALYSIS

Table No. 1
Personal and Employment Profile of the respondents

Variables	Options	Frequency	Percentage (%)	Total (%)
Age Group (in years)	Below 25	51	8.2	100
	25–35	157	25.3	
	36–45	183	29.5	
	46–55	139	22.4	
	Above 55	90	14.5	
Gender	Male	333	53.7	100
	Female	287	46.3	
Educational Qualification	UG	121	19.5	100
	PG	289	46.6	
	Professional Degree	147	23.7	
	Diploma	43	6.9	
	Others	20	3.2	
Years of Experience	Below 5 years	97	15.6	100
	6–10 years	165	26.6	
	11–15 years	178	28.7	
	16–20 years	109	17.6	
	Above 20 years	71	11.5	
Job Role	Clerical Staff	205	33.1	100
	Entry-Level Officers	191	30.8	
	Mid-Level Officers	133	21.5	
	Senior Executives	49	7.9	
	Branch-Level Managers	42	6.8	
Type of Employment	Permanent	545	87.9	100
	Probation	53	8.5	
	Contractual	22	3.5	
Monthly Income (in Rs.)	Below ₹25,000	39	6.3	100
	₹25,001–₹50,000	149	24.0	
	₹50,001–₹75,000	213	34.4	
	₹75,001–₹1,00,000	151	24.4	
	Above ₹1,00,000	68	11.0	
	Urban	297	47.9	100

Location of Bank Branch	Semi-Urban	203	32.7	
	Rural	120	19.4	
Working Hours Per Day	8 hrs	315	50.8	100
	8–10 hrs	235	37.9	
	More than 10 hrs	70	11.3	
Participation in Welfare Schemes	Yes	559	90.2	100
	No	61	9.8	

Source : Primary data

Table above table presents the demographic and employment characteristics of public sector bank employees which are as follows.

- In terms of age distribution, the majority of respondents belonged to the 36–45 years category, accounting for 29.5%, followed by those in the 25–35 years group (25.3%). Individuals aged between 46–55 years comprised 22.4%, while 14.5% were above 55 years. The smallest proportion of respondents were below 25 years (8.2%).
- Gender representation was nearly balanced, with male employees comprising 53.7% and female employees accounting for 46.3%.
- Regarding educational qualifications, postgraduates formed the largest group at 46.6%, followed by professional degree holders (23.7%), undergraduates (19.5%), diploma holders (6.9%), and others (3.2%).
- Work experience varied among respondents, with 28.7% having 11–15 years of experience and 26.6% reporting 6–10 years. Those with less than 5 years of experience constituted 15.6%, while 17.6% had 16–20 years, and 11.5% had over 20 years of experience.
- With respect to job roles, clerical staff represented the largest segment (33.1%), followed by entry-level officers (30.8%) and mid-level officers (21.5%). Senior executives and branch-level managers accounted for 7.9% and 6.8% respectively.
- A significant majority of employees (87.9%) were permanently employed, while 8.5% were on probation and 3.5% held contractual positions, indicating a stable employment pattern.
- In terms of monthly income, the highest proportion of respondents earned between ₹50,001–₹75,000 (34.4%), followed by ₹75,001–₹1,00,000 (24.4%) and ₹25,001–₹50,000 (24.0%). A smaller share earned above ₹1,00,000 (11.0%) and below ₹25,000 (6.3%).
- Urban bank branches were the most common workplace location, with 47.9% of respondents, followed by semi-urban branches (32.7%) and rural branches (19.4%).
- Regarding working hours, 50.8% of respondents reported working exactly 8 hours per day, while 37.9% worked between 8–10 hours, and 11.3% worked more than 10 hours, reflecting varied workload patterns.
- A substantial majority (90.2%) of employees reported participation in welfare schemes, indicating strong involvement in organizational support initiatives.

Table No. 2

Stress in the Workplace

Variables	Options	Frequency	Percentage (%)	Total (%)
Type of Work Shift	General day shift	485	78.2	100
	Rotational shifts	79	12.7	
	Extended hours	47	7.6	
	Part-time/Contract	9	1.5	
Primary Cause of Job-Related Stress	High workload	263	42.4	100
	Role ambiguity	97	15.6	
	Lack of recognition	78	12.6	
	Customer pressure	149	24.0	
	None	33	5.3	

Usual Response to Work-Related Stress	Take a short break	211	34.0	100
	Talk to a colleague	175	28.2	
	Approach supervisor	89	14.4	
	Suppress and continue	103	16.6	
	Other	42	6.8	
Preferred Organizational Support During Stressful Times	Managerial support	235	37.9	100
	Peer cooperation	205	33.1	
	Time flexibility	87	14.0	
	Leave approval	71	11.5	
	Others	17	2.7	
	None	5	.8	

Source : Primary data

The above table presents the nature of work-related stress and coping mechanisms among public sector bank employees which are as follows.

- A majority of respondents worked in general day shifts (78.2%), followed by rotational shifts (12.7%) and extended hours (7.6%). Only a small percentage (1.5%) were in part-time or contractual roles.
- The primary cause of job-related stress was high workload, reported by 42.4% of respondents. This was followed by customer pressure (24.0%), role ambiguity (15.6%), and lack of recognition (12.6%). A minor proportion (5.3%) reported experiencing no stress.
- In terms of responses to work-related stress, the most common approach was taking a short break (34.0%), followed by talking to a colleague (28.2%). Others either suppressed stress and continued working (16.6%), approached their supervisor (14.4%), or chose other methods (6.8%).
- Regarding preferred organizational support during stressful times, managerial support was the most preferred option (37.9%), followed by peer cooperation (33.1%), time flexibility (14.0%), and leave approval (11.5%). A small number preferred other options (2.7%) or reported no preference (0.8%).

Table No. 3

Adaptability in the Workplace

Variables	Options	Frequency	Percentage (%)	Total (%)
Frequency of Workplace Changes in Tasks, Roles, or Teams	Daily	65	10.5	100
	Weekly	187	30.2	
	Occasionally	263	42.4	
	Rarely	91	14.7	
	Never	14	2.3	
Most Helpful Support for Adapting to Changes	Support from manager	185	29.8	100
	Peer support	213	34.4	
	Training sessions	139	22.4	
	Self-learning or personal effort	79	12.7	
	No support received	4	.6	
Most Difficult Type of Job Change to Adjust to	Changes in tasks	93	15.0	100
	Changes in processes	167	26.9	
	Changes in team members	119	19.2	
	Change in leadership	197	31.8	
	All are manageable	44	7.1	

Source : Primary data

Table 4.4 presents the adaptability levels and related support mechanisms among public sector bank employees which are as follows.

With regard to the frequency of workplace changes in tasks, roles, or teams, most respondents experienced changes occasionally (42.4%) or weekly (30.2%). A smaller portion reported daily changes (10.5%), rarely (14.7%), or never (2.3%).

The most helpful support for adapting to changes was peer support, as reported by 34.4% of respondents, followed by support from managers (29.8%) and training sessions (22.4%). Self-learning or personal effort accounted for 12.7%, while 0.6% stated they received no support.

In terms of the most difficult type of job change to adjust to, the highest percentage of respondents indicated changes in leadership (31.8%) as the most challenging. This was followed by changes in processes (26.9%), team members (19.2%), and tasks (15.0%). A minority (7.1%) felt all types of changes were manageable.

Table No. 4

SEM Model Summary for Job Stress and Employee Performance

Description	Value
Number of distinct sample moments	666
Number of distinct parameters to be estimated	74
Degrees of freedom (666 - 74)	592
Chi-square value (CMIN)	1036.929
Degrees of freedom	592
Probability level (p-value)	0.000

Source : Computed data

The above table provides the SEM model summary for job stress and employee performance. The model reports a Chi-square value of 1036.929 with 592 degrees of freedom and a p-value of 0.000. Although the p-value is statistically significant, such outcomes are frequently observed in large-sample SEM analyses. Considering the model's complexity and sample size, the overall fit is deemed acceptable. The findings confirm the structural adequacy of the proposed model in capturing the relationship between job stress and employee performance among employees of Kottayam district.

SEM Regression Weights for Workplace Stress and Employee Performance

The hypothesis testing results lead to the rejection of Hypothesis as both latent constructs, Task-Induced Psychological Strain (TIPS) and Environmental and Interpersonal Stressors (EIS), exhibit statistically significant effects on employee performance among public sector bank employees in Kottayam district.

Covariances and Variances of SEM Model for Job Stress and Employee Performance

The covariances and variances of the SEM model for Job stress and employee performance. The significant covariance between Task-Induced Psychological Strain (TIPS) and Environmental and Interpersonal Stressors (EIS) (estimate = 0.269, CR = 8.572, $p < 0.001$) indicates a strong interconnection between internal and external stressors. The variances for TIPS (0.249) and EIS (0.322) are also statistically significant, suggesting that both dimensions contribute meaningfully to the model, with EIS having a comparatively greater influence. Furthermore, the residual variances for observed items, including EP6 (works independently), EP7 (solves work problems), and EP17 (volunteers for extra tasks), display consistently high critical ratios and low error terms, affirming the model’s robustness and internal consistency in measuring the impact of stress Kottayam district.

Table No. 5

Comparative Model Fit Indices for Job Stress and Employee Performance

Fit Index	Default Model	Saturated Model	Independence Model	Remarks

CMIN (Chi-Square)	1036.929	0.000	5667.894	Acceptable fit with large sample size
DF	592	0	630	Degrees of freedom are sufficient
p-value	0.000	—	0.000	Significant, expected with large N
CMIN/DF	1.752	—	8.997	Good fit (< 2.0 indicates acceptable fit)
RMR	0.034	0.000	0.208	Within acceptable range (< 0.05)
GFI	0.916	1.000	0.329	Good (above 0.90 indicates strong fit)
AGFI	0.905	—	0.291	Acceptable (above 0.90)
PGFI	0.814	—	0.311	Indicates good model parsimony
NFI	0.817	1.000	0.000	Acceptable (> 0.80)
RFI	0.805	—	0.000	Marginal but acceptable
IFI	0.912	1.000	0.000	Excellent fit (above 0.90)
TLI	0.906	—	0.000	Excellent fit
CFI	0.912	1.000	0.000	Strong fit (above 0.90)
RMSEA	0.035	—	0.114	Excellent (below 0.06 is ideal)
PCLOSE	1.000	—	0.000	Model fit is close to perfect
AIC	1184.929	1332.000	5739.894	Lower than alternatives, supports model
BIC	1512.729	4282.193	5899.363	Lower value indicates better fit
ECVI	1.914	2.152	9.273	Lower ECVI confirms superior model fit
Hoelter (0.05)	388	—	76	Above 200, indicates good sample adequacy
Hoelter (0.01)	403	—	79	Confirms sample adequacy for robust results

Source : Primary data

The comparative model fit indices for the default, saturated, and independence models Job stress and employee performance. The default model reports a Chi-square value of 1036.929 with 592 degrees of freedom, resulting in a CMIN/DF ratio of 1.752, which is well below the acceptable threshold of 2.0, indicating a good overall model fit. The RMSEA value of 0.035 and PCLOSE of 1.000 suggest an excellent approximation of the model to the population, confirming minimal error. Absolute fit indices such as GFI (0.916) and AGFI (0.905) exceed 0.90, reinforcing the structural accuracy of the model. Incremental fit indices including NFI (0.817), IFI (0.912), TLI (0.906), and CFI (0.912) all meet or exceed recommended thresholds, demonstrating that the default model significantly outperforms the independence model in explaining the observed data. The RMR value of 0.034 remains within acceptable limits, and the PGFI value of 0.814 supports model parsimony. The Hoelter critical N values of 388 (at 0.05 level) and 403 (at 0.01 level) further affirm that the sample size is adequate for generating stable model estimates.

Information criteria such as AIC (1184.929), BIC (1512.729), and ECVI (1.914) for the default model are notably lower than those of the independence model, confirming better model efficiency and predictive validity. These results validate the SEM framework as statistically sound and conceptually appropriate for assessing how Job stress impacts employee performance. The structural relationship between task-induced strain and environmental stressors with performance outcomes is clearly supported. Figure No. 4.19 illustrates these standardized pathways, all significant at the 95 percent confidence level.

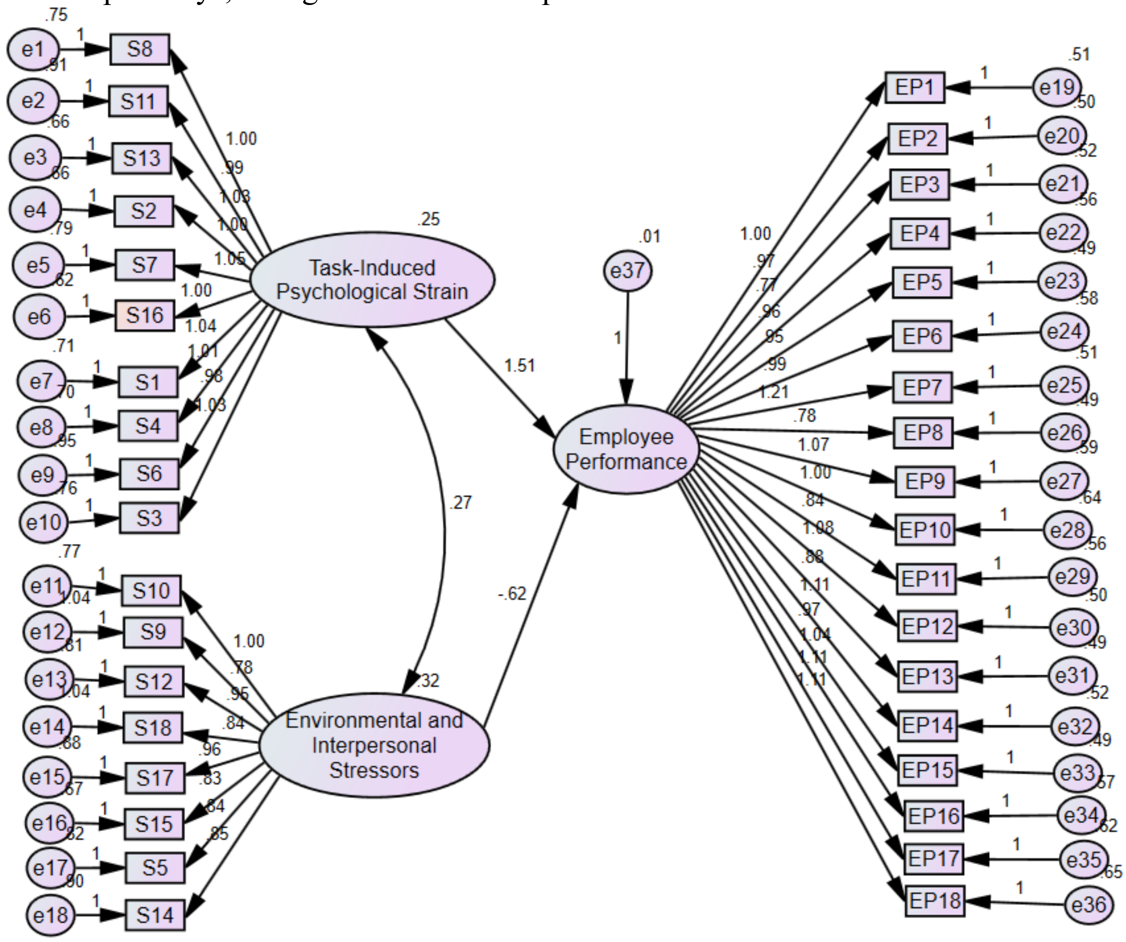

Figure 1: Structural Equation Model (SEM) for Job Stress and Employee Performance

Table No. 6

SEM Model Summary for Workplace Adaptability and Employee Performance

Description	Value
Number of distinct sample moments	666
Number of distinct parameters to be estimated	77
Degrees of freedom (666 - 77)	589
Chi-square value (CMIN)	1108.901
Degrees of freedom	589
Probability level (p-value)	0.000

Source : Primary data

The SEM model summary for workplace adaptability and employee performance. The model reports a Chi-square value of 1108.901 with 589 degrees of freedom and a p-value of 0.000. Although the p-value is statistically significant, such outcomes are commonly observed in large-sample SEM analyses. Considering the model's complexity and adequate sample size, the overall fit is considered acceptable. The results confirm the structural validity of the proposed model in explaining the relationship between workplace adaptability and employee performance among public sector bank employees in Kottayam district.

SEM Regression Weights for Workplace Adapatability and Employee Performance

The SEM regression estimates for assessing the influence of workplace adaptability on employee performance among public sector bank employees hypothesis testing results lead to the rejection of Hypothesis, as the overall model confirms a statistically significant relationship between selected adaptability dimensions and employee performance.

The sub-hypothesis H_{16a} is rejected. The path from Proactive Learning and Innovation Adaptability (F2) to employee performance (F1) shows a strong positive influence, with a path coefficient of 0.549, a critical ratio of 5.355, and a p-value less than 0.001. This indicates that employees who are capable of continuous learning, adapting to fast-changing environments, and contributing innovative ideas tend to demonstrate higher levels of performance. Key indicators such as AD11 (learns new skills), AD8 (works comfortably in dynamic environments), and AD18 (suggests improvements) validate the importance of a growth-oriented mindset in a structured public sector context. These findings suggest that encouraging proactive adaptability can lead to meaningful performance gains in a banking environment.

The sub-hypothesis is not supported by the data, as the path from Situational Flexibility and Recovery Efficiency (F3) to employee performance shows a non-significant estimate of 0.090 with a p-value of 0.399. Although this dimension includes important behavioural traits like continuing to work during disruptions (AD7) or quickly resuming performance after setbacks (AD16), it does not show a direct effect on overall performance in this study. It is possible that situational flexibility acts as a supporting rather than a primary factor in determining employee outcomes.

The performance construct itself is validated through high loadings across numerous observed indicators, including EP7 (solves work problems), EP17 (takes on extra tasks), EP16 (uses resources wisely), and EP14 (ensures quality). These results emphasize that adaptability, especially when it involves proactive and responsive traits, supporting task completion, innovation, and role effectiveness within the structured environment of public sector banking.

Covariances and Variances of SEM Model for Workplace Adaptability and Employee Performance

The covariances and variances for the SEM model on workplace adaptability and employee performance. The results show significant positive covariances among the three adaptability dimensions, namely Proactive Learning (F2), Situational Flexibility (F3), and Role Adjustment (F4), with all critical ratios exceeding 8.000 and p-values below 0.001. This indicates strong interrelationships among the constructs. The variances for each latent variable are also statistically significant, confirming their meaningful contribution to the model. Additionally, the residual variances for observed items show high critical ratios and low error values, supporting the model's internal consistency and reliability in measuring the influence of adaptability Kottayam district.

Table No. 7
Comparative Model Fit Indices for Workplace Adaptability and Employee Performance

Fit Index	Default Model	Saturated Model	Independence Model	Remarks
CMIN (Chi-Square)	1108.901	0.000	6282.893	Acceptable fit given large sample size
DF	589	0	630	Degrees of freedom are sufficient
p-value	0.000	—	0.000	Significant, expected with large N
CMIN/DF	1.883	—	9.973	Good fit (below 2.0 indicates acceptable fit)
RMR	0.031	0.000	0.206	Within acceptable range (below 0.05)
GFI	0.912	1.000	0.293	Good (above 0.90)
AGFI	0.901	—	0.253	Acceptable (above 0.90)

PGFI	0.807	—	0.277	Indicates good model parsimony
NFI	0.824	1.000	0.000	Acceptable (above 0.80)
RFI	0.811	—	0.000	Marginal but within range
IFI	0.909	1.000	0.000	Excellent fit (above 0.90)
TLI	0.902	—	0.000	Strong fit (above 0.90)
CFI	0.908	1.000	0.000	Indicates strong comparative fit
RMSEA	0.038	—	0.120	Excellent (below 0.06 is desirable)
PCLOSE	1.000	—	0.000	Model fit is close to perfect
AIC	1262.901	1332.000	6354.893	Lower AIC supports better model
BIC	1603.990	4282.193	6514.363	Lower value indicates stronger fit
ECVI	2.040	2.152	10.266	Lower ECVI supports superior model replication
Hoelter (0.05)	361	—	68	Above 200, indicates good sample adequacy
Hoelter (0.01)	375	—	71	Confirms robustness of model with current sample

The comparative model fit indices for the default, saturated, and independence models related to workplace adaptability and employee performance. The default model reports a Chi-square value of 1108.901 with 589 degrees of freedom, resulting in a CMIN/DF ratio of 1.883, which indicates a good model fit. The RMSEA value of 0.038, coupled with a PCLOSE of 1.000, suggests an excellent approximation of the model to the population. Goodness-of-fit indices such as GFI (0.912) and AGFI (0.901) exceed the standard threshold of 0.90, confirming strong model structure. Incremental fit measures including NFI (0.824), IFI (0.909), TLI (0.902), and CFI (0.908) also indicate that the default model performs significantly better than the independence model. The RMR value of 0.031 falls within the acceptable range, and PGFI (0.807) supports the model's parsimony. The Hoelter values of 361 at the 0.05 level and 375 at the 0.01 level indicate sufficient sample adequacy for robust estimation.

Furthermore, lower values of AIC (1262.901), BIC (1603.990), and ECVI (2.040) for the default model, compared to the independence model, confirm its superior fit and predictive strength. These findings collectively validate the SEM model as both statistically sound and theoretically aligned for explaining the influence of workplace adaptability on employee performance. Figure No. 4.21 visually supports these results by depicting the standardized structural paths, all of which are statistically significant at the 95 percent confidence level.

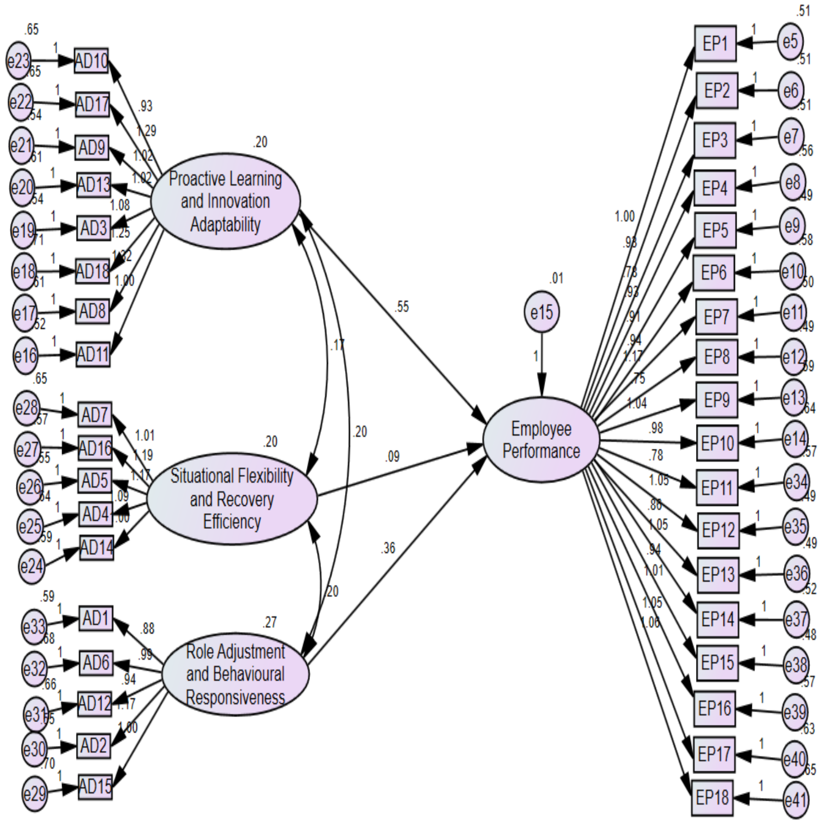

Figure 2 : Structural Equation Model (SEM) for Workplace Adaptability and Employee Performance

SUGGESTIONS

1. Strengthening Workload Management

Banks should adopt scientific workload distribution methods to ensure that employees are not overburdened. Introducing rotational duties, task automation, and support staff allocation during peak hours can reduce pressure. Proper work scheduling helps employees accomplish tasks smoothly and minimises job-related stress.

2. Improving Staffing Levels

Adequate staffing is essential to handle increasing customer traffic and operational demands. Banks may consider filling vacant positions promptly and deploying floating staff to busy branches. This will reduce overload on existing employees and enhance service efficiency.

3. Conducting Regular Stress-Management Programs

Organising stress-relief workshops, yoga sessions, mindfulness training, and counselling support can help employees cope with work pressure. Such wellness initiatives encourage emotional resilience and create a healthier workplace environment. Regular sessions also promote awareness about managing stress effectively.

4. Enhancing Employee Adaptability Training

Banks should introduce periodic training programmes focusing on technology adoption, soft skills, and change management. Hands-on training in digital platforms and new banking applications helps employees acquire confidence and adapt quickly. This reduces technology-induced stress and boosts performance.

5. Improving Communication and Role Clarity

Clear communication of job responsibilities, targets, and organisational expectations can reduce role conflict and ambiguity. Regular staff meetings and feedback sessions help employees understand their roles better. This clarity lowers stress and improves adaptability during changes.

6. Strengthening Support from Supervisors

Supervisors should adopt a supportive leadership style that encourages open communication and problem-solving. Managers must listen to employee concerns, provide timely guidance, and recognise efforts. A supportive work environment increases adaptability and reduces psychological stress.

7. Implementing Flexible Work Practices

Wherever possible, banks may offer flexible work timings, shift adjustments, or short-break allowances. Such flexibility helps employees balance work and personal life effectively. Reduced work–life imbalance leads to better mental health and improved adaptability.

8. Encouraging Team Collaboration

Team-based working promotes mutual support and reduces individual burden. Banks should encourage collaborative practices like knowledge sharing, mutual assistance, and team-based targets. Strong teamwork enhances adaptability and reduces stress during peak workloads.

9. Periodic Review of Branch Targets

Unrealistic or frequently changing targets are a major source of employee stress. Banks should evaluate target-setting procedures, considering branch size, customer base, and local conditions. Reasonable targets motivate employees rather than create anxiety.

10. Improving Technological Infrastructure

Technical issues such as slow servers, system downtime, or outdated software can add significant stress. Banks must ensure updated, user-friendly digital systems to enhance operational speed. Efficient technology reduces frustration and improves employee adaptability.

11. Introducing Recognition and Reward Systems

Acknowledging employees for good performance, adaptability, and customer service boosts morale. Simple appreciation practices certificates, awards, or verbal praise can significantly reduce stress. Recognition enhances motivation and encourages employees to embrace change positively.

12. Promoting a Healthy Work Culture

A positive organisational culture that values respect, cooperation, and employee well-being reduces workplace stress. Banks should discourage unhealthy competition and promote fairness in work allocation. A healthy culture increases adaptability among employees.

CONCLUSION

The study on job stress and adaptability among employees of selected public sector banks in Kottayam reveals that banking employees are experiencing varying levels of stress primarily due to increasing workload, customer expectations, technological changes, and pressure to meet performance targets. The findings indicate that job stress is a common reality across different age groups and positions, though its intensity differs based on job roles, experience, and personal coping mechanisms.

Despite these challenges, the employees demonstrated a considerable ability to adapt to changing work environments, especially in areas such as digital banking operations, regulatory modifications, and customer service processes. Employees with higher adaptability levels reported lower job stress, indicating a significant inverse relationship between adaptability and stress. Training, experience, and supportive work culture were found to play crucial roles in strengthening adaptability.

The study highlights that although public sector bank employees are coping with stress to a reasonable extent, prolonged exposure to job-related pressure without effective support can lead to burnout, reduced job satisfaction, and lower productivity. Therefore, enhancing adaptability through continuous training, psychological support, and better work-life balance initiatives becomes essential.

In conclusion, job stress remains a major concern in the banking sector, but adaptability acts as a key buffer that enables employees to manage challenges more effectively. Strengthening institutional support, improving interpersonal communication, and fostering a positive work environment will help reduce stress and enhance adaptability, leading to better employee wellbeing and improved organizational performance in public sector banks in Kottayam.

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A STUDY ON PRE AND POST FINANCIAL PERFORMANCE (SPREAD RATIOS) OF MERGED BANKS IN INDIA

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ABSTRACT

This paper attempts to analyze the financial growth of merged banks in India. Merged form major part of total banking system in India so there is a need to evaluate the performance of these banks. The study is based upon secondary data covering the period from 1990-2010. The study is selected 10 commercial merged banks in India. For analyzing the Mean, Standard Deviation, Coefficient of Variation, Compound Annual Growth rate and Paired t-test of Interest income to working fund (x1), Ratio of interest expenses to working fund (x2) and Ratio of Spread to Working fund (x3) calculated. It is concluded the CAGR of various variables have shown variation s from bank to bank. In this analytical research paper, an Attempt has been made to evaluate the effectiveness of mergers and acquisitions of the selected merged banks on the basis of selected variables prior and after mergers and acquisitions.

INTRODUCTION

In the changing scenario, every business including service institutions like banks strive hard for survival in this growing era of core competence. Due to intense completion among the banks, every bank is doing something better than others to capture the business. It is necessary for any business firms to analyze its financial health. In this regard, it is necessary to analyze the financial health of merged banks to establish its financial health in the form of profitability, liquidity, solvency etc. This analysis provides a clear picture of the financial soundness of a firm and a road map outlining the directions the business is heading to. So an attempt has been made in this present chapter to have an insight into the examination of financial health of merged banks in India selected for the study.

For measuring the financial performance, ratio analysis is used in the study. Ratio analysis is a tool which attempts to measure and compare financial performance. The use of ratio analysis helps to identify the areas which need further investigation of study. It will also pin point the areas in which a concern may improve its performance. Apart from this, it is one of the reliable and commonly used tools for analyzing or measuring the financial / operational performance of the banks. It is because of its conciseness, comparability and direct relevance of the relationship established to the various earning capabilities of the banks.

REVIEW OF LITERATURE

Naresh Kumar (2007) in his study entitled "Corporate Strategy in Emerging Scenario – Acquisitions and Mergers" has discussed the recent trend in M&A. The study revealed that the Indian corporates have been gearing up to restructuring and repositioning to seize the opportunities and to meet the challenges thrown globalization. The corporates aimed at achieving optimum size as a means for survival and growth in the competitive economy.

Ravi Prakash and Hasneetha Matta (2007) in their study on "Tax Implications and Planning of Mergers and Acquisitions in India" have discussed the importance of tax implications and effective planning of tax in every deal of merger and acquisition.

Amit Ghosh[76] (2007) in his study on "The Mechanics of Merger and Acquisition" has studied the factors contributing to mergers and acquisitions. He just outlined the requirements under the company law, tax law and accounting standards. He also emphasized about the importance of merger financing, valuations and the HR issue in maximizing the gains. The study also revealed the importance of the top management their care and focus after the process of merger.

OBJECTIVE

1. To analyze and compare the financial performance (Spread ratios) Interest income to working fund (x1), Ratio of interest expenses to working fund (x2) and Ratio of Spread to Working fund (x3) of pre and post merged banks.

HYPOTHESIS

1. There is no significant difference between pre merger and post merger spread ratios of Interest income to working fund (x1), Ratio of interest expenses to working fund (x2) and Ratio of Spread to Working fund (x3)

METHODOLOGY

The study is analytical in nature, and it is based on secondary data. The information has been collected from the official directory and data base of Centre for Monitoring Indian Economy (CMIE) namely PROWESS. The published annual reports of the selected banks related websites, magazines and journals on finance have also been used as data source. The scope of the study is limited to the analysis of Interest income to to working fund (x1), Ratio of interest expenses to working fund (x2) and Ratio of Spread to Working fund (x3) merged banks cover the period of 10 years as five years before the date of merger and five years after the date of merger. The data has been analyzed using Mean, Standard Deviation, Coefficient of Variation, Compound Annual Growth rate and Paired t-test.

Table No. 1
Sample Banks

S.No	Name of the Transferor Bank	Name of the Transferee Bank	Date of Merger	Public / Private and Foreign Banks
1	Kashi Nath Seth Bank Ltd	State Bank of India	01/011996	Public Bank
2	Sikkim Bank Ltd	Union Bank of India	22/12/1999	Public Bank
3	Times Bank Ltd	HDFC Bank	26/02/2000	Private Bank
4	Bank of Madura Ltd	ICICI Bank	10/3/2001	Private Bank
5	The British Bank of Middle East	Hong Kong Shangai Banking Corporation	2001	Foreign Bank
6	ANZ- Grinlayas Bank	Standard Chartered Bank	2001	Foreign Bank
7	Benaras State Bank Ltd	Bank of Baroda	20/06/2002	Public Bank

8	Nedungadi Bank Ltd	Punjab National Bank	1/2/2003	Public Bank
9	Global Trust Bank Ltd	Oriental Bank of Commerce	14/08/2004	Public Bank
10	IDBI Bank Ltd	IDBI	2/4/2005	Private Bank

SPREAD RATIOS

Spread is the difference between interest earned (on loan and advances) and interest paid (on deposit and borrowing) by the banks. These ratios play a major role in determining the profitability of the banks. It is the net amount available to the banks for meeting their operating and managerial expenses. In order to analyze the profitability performance, it becomes imperative to study the magnitude of this spread and its components i.e., interest earned and interest paid in relation to working fund of the banks. Hence, the following ratios are calculated for the present study.

1. Ratio of Interest Income to Working fund (X1)
2. Ratio of Interest expenses to Working fund (X2)
3. Ratio of spread to Working fund (X3)

INTEREST INCOME TO WORKING FUND (X1)

Interest earning refers to the return on pure banking business i.e., its traditional business. The interest income includes interest and discount earned on advances, income from investment made by a commercial bank and other interest income. The ratio of interest income as percentage of working fund is an indicator of the rate at which a bank earns income by lending funds.

Table No. 2
Interest Income to Working Fund (X1)

BANKS	PRE MERGER			POST MERGER			MEAN GROWTH RATE
	MEAN	SD	CV (%)	MEAN	SD	CV (%)	
SBI	07.51	00.66	08.90	08.88	00.41	04.68	18.34
UBI	07.56	01.17	15.50	09.63	00.60	06.27	27.35
HDFC	08.28	01.35	16.32	08.16	00.92	11.30	-01.47
ICICI	08.98	00.77	08.65	06.84	02.07	30.34	-23.86
HKSBC	07.56	01.20	13.50	06.88	00.49	07.24	-22.66
SCB	09.11	00.80	08.84	13.51	02.81	20.82	48.32
BOB	09.55	00.49	05.14	09.15	00.59	06.50	-04.18
PNB	09.68	01.19	12.32	07.94	00.94	11.90	-17.98
OBC	06.15	00.45	07.36	10.15	00.29	02.86	64.97
IDBI	09.19	01.76	19.24	06.76	00.35	05.20	-26.35
Over all	**08.42**	**01.15**	**13.74**	**08.27**	**01.27**	**15.37**	**-01.82**

Source: Compiled from Annual Reports of the Banks

The table 2 indicates that the mean ratio for interest income to working fund during pre merger period ranges between 6.15 to 9.68 with an overall mean of 8.42 and CV of 13.74% among the ten banks. For all banks have higher mean ratio whereas the other banks have lower mean ratio compared to overall mean ratio. The mean of post merger period ranges between 6.768 to 13.51 with an overall mean of 8.270 and CV of 15.37%. Regarding the percentage of change in mean SBI, UBI, SCB, and OBC only show increased position by 18.34%, 27.35, 48.32% and 64.97% respectively. In case of the other banks, mean ratio is lesser than the pre merger period ranges from -1.47% to 26.35%. It is concluded from the above table that the interest income of the merged banks during post merger period compared to the pre merger shows a positive trend in case of SBI, OBC and UBI and in other case it is reduced compared to the pre merger period.

TEST OF SIGNIFICANCE OF THE OVERALL MEAN RATIO INTEREST INCOME TO WORKING FUND OF PRE AND POST MERGER PERIOD

PAIRED t- Test

Mean Difference: 0.1553	SE (mean difference): 0.7426	
Calculated t- value: 0.209 (NS)	DF: 9	Table value: 2.306

The t-test shows that there is no significant difference in the mean ratio interest income to working fund between pre and post period of merger.

INTEREST EXPENSES TO WORKING FUND (X2)

The ratio of Interest expenditure to working fund represents relationship of the cost of funds to the working fund for the banks. The major ingredients of interest paid consist of interest paid on deposit, borrowing and other interest expenditure. This ratio is an indicator of the rate at which a bank incurs expenditure on borrowed funds from public as well as other borrowings.

Table No. 3

Interest Expenses to Working Fund

BANKS	PRE MERGER			POST MERGER			MEAN GROWTH RATE
	MEAN	SD	CV (%)	MEAN	SD	CV (%)	
SBI	05.02	00.71	14.32	06.19	00.28	04.67	23.36
UBI	05.92	00.43	07.39	05.90	00.70	12.01	-00.30
HDFC	06.20	01.57	25.34	06.83	00.93	13.64	10.14
ICICI	06.26	00.76	12.13	08.25	00.69	08.36	31.83
HKSBC	07.24	00.71	09.88	06.79	01.40	20.71	-06.15
SCB	05.65	00.35	21.50	02.11	00.41	19.71	29.81
BOB	06.22	00.21	03.39	04.72	00.84	18.00	-24.12
PNB	07.20	00.88	12.29	04.27	00.74	17.33	-40.64
OBC	04.78	01.00	21.00	07.13	00.56	07.89	49.23
IDBI	06.05	01.47	24.31	06.21	00.35	05.70	02.64
Over all	**06.10**	**00.83**	**13.74**	**06.26**	**01.21**	**15.37**	**02.57**

Source: Compiled from Annual Reports of the Banks

The table 3 indicates that the mean ratio interest expenses to working fund during pre merger period ranges between 4.78 to 7.24 with an overall mean of 6.103 and CV of 13.74% among the ten banks. For all banks have higher mean ratio whereas the other banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 2.11 to 8.25 with an overall mean of 6.26 and CV of 15.37%. Two banks namely ICICI and PNB have higher mean ratio whereas the other seven banks have lower mean ratio compared to the overall mean ratio. Regarding the percentage of change in the mean ratio SBI, OBC and ICICI the interest expenditure is increased in the post merger period compared to the pre merger period and in other cases it is reduced during post merger period in relation the pre merger period. It is concluded from the above table that interest expenditure in relation to working fund, a major commitment of the banking concern is increased in case of the SBI, HDFC, ICICI, SCB, OBC and IDBI and in all other cases it is reduced.

TEST OF SIGNIFICANCE OF THE OVERALL MEAN RATIO INTEREST EXPENSES TO WORKING FUND OF PRE AND POST MERGER PERIOD

PAIRED t- Test

Mean Difference: - 0.1578	SE (mean difference): 0.5542	

Calculated t- value: - 0.285 (NS)	DF: 9	Table value: 2.306

The t-test shows that there is no significant difference in the mean ratios interest expenses to working fund between pre and post period of merger.

SPREAD TO WORKING FUND (X3)

The ratio of spread as percentage of working fund is one of the important indicators to determine the profitability of banks. It is calculated as the difference between the first two ratios viz., interest income to working fund and interest paid to working fund. This ratio provides a cushion for meeting the expenses of management and administration.

Table No. 4

Spread to Working Fund

BANKS	PRE MERGER			POST MERGER			MEAN GROWTH RATE
	MEAN	SD	CV (%)	MEAN	SD	CV (%)	
SBI	01.87	00.84	31.49	03.01	00.34	11.26	60.70
UBI	04.14	00.67	16.21	02.76	00.36	13.07	-33.46
HDFC	02.07	00.49	23.70	03.10	00.76	24.80	49.71
ICICI	02.44	00.48	19.92	03.94	00.75	19.08	61.27
HKSBC	02.54	00.15	06.00	02.42	00.22	09.21	-04.64
SCB	01.85	00.64	34.52	02.22	00.36	16.52	19.48
BOB	03.24	00.27	8.517	03.17	01.03	32.73	-02.16
PNB	05.65	00.35	21.50	02.11	00.41	19.71	29.81
OBC	01.68	00.35	20.86	03.16	00.18	05.69	87.87
IDBI	01.87	00.75	41.59	03.01	00.26	09.55	60.70
Over all	**02.41**	**00.81**	**33.49**	**02.89**	**00.49**	**16.61**	**19.61**

Source: Compiled from Annual Reports of the Banks

The table 4 indicates that the mean ratio spread to working fund during pre merger period ranges between 1.682 to 4.148 with an overall mean of 2.416 and CV of 33.49% among the ten banks. Four banks namely BOB, UBI, ICICI and PNB have higher mean ratio whereas the other banks have lower mean ratio compared to the overall mean ratio. The mean ratio of post merger period ranges between 2.220 to 3.498 with an overall mean of 2.890 and CV of 16.61%. The banks namely SBI, OBC, BOB, HDFC, ICICI and IDBI have higher mean ratio whereas the other three banks have lower mean ratio compared to the overall mean ratio. It is observed from the table that the percentage of change in the mean ratio spread to working fund between the pre merger and post merger period in case of SBI, OBC, HDFC, ICICI, AXIS and IDBI is positive and it is ranging from 19.483% to 87.872% and in case of BOB, UBI and PNB it is negative ranges from -33.46% to -2.16%. It is concluded that the spread available during the post merger period compared to pre merger period is better in case of all the banks except BOB, UBI and PNB.

TEST OF SIGNIFICANCE OF THE OVERALL MEAN RATIO SPREAD TO WORKING FUND OF PRE AND POST MERGER PERIOD

PAIRED t- Test

Mean Difference: -0 .5638	SE (mean difference): 0.3186	
Calculated t- value: -1.769 (NS)	DF: 9	Table value: 2.306

The table shows that there is no significant difference in the mean ratio spread to working fund between pre and post period of merger.

Table No. 5
Evaluation of Spread Ratios

Ratios	Banks																			
	SBI		UBI		HDFC		ICICI		HKSBC		SCB		BOB		PNB		OBC		IDBI	
	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS	S	NS
X1																				
X2																				
X3																				
Total	2	1	2	1	1	2	2	1	1	2	1	2	1	2	2	1	1	2	2	1

S – SYNERGYNS – NO SYNERGY Source: Compiled from Relevant tables

FINDINGS

1. It is indicated from the study that the Interest income in relation to working fund of post merger period is increased compared to the pre merger.
2. The study reveals that the interest expenses of SBI, OBC, HDFC, ICICI and IDBI in relation to their working fund is increased.
3. The study concludes that the spread available during the post merger period compared to pre merger period is better in case of all the banks except BOB, UBI and PNB.

SUGGESTIONS

The primary objective of M & As activities is to build new competencies and capabilities, to remain competitive and to grow profitably thereby increase the value of the firm and stand as a leader in the market. There are few suggestions to the banks which are merged and have a plan to merge in future and also to other stakeholders that emanate from the study. The banks may take steps to improve their interest income by maximizing the loan and advances through optimum utilization of the manpower and other facilities and relevant measures. The merger activity leads to no prominent change in the establishment expenses and operating expenses. So the banks could concentrate on this area and take relevant measures to reduce it. The banks should analyze the specific reason for reduction in profitability and aim for higher profit through increased business (traditional and core business activities) The banks may take steps to control NPAs and improve the market price of their shares.

CONCLUSION

The new economic environment of the 1990s has facilitated M&As between banks. The present study indicated average performance of acquiring banks based on all indicators during the study period was relatively better. But it could not be concluded as evidence of improvement in terms of various parameters. With supported relative information a correct position can be identified. The policy makers can use the findings of the study as a base for framing policies relating to M&As in service sector. Also it identifies the areas of improvement for better profitability and performance for the banks. The investors could decide their investments in the service sector and the researchers can base this study for their future research activities in the area of M&As.

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WOMEN IN FISHERIES: EXAMINING THE SOCIO-ECONOMIC AND WASH CHALLENGES FACED BY WIDOWED FISHERWOMEN IN TAMIL NADU

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INTRODUCTION

Tamil Nadu, located on the southeastern coast of India, is home to a significant fishing community. Fisheries play a pivotal role in the state's economy, providing employment to thousands, including women. However, the socio-economic dynamics of this community are complex, especially for widowed fisherwomen. These women, who are already marginalized in society, often face compounded challenges due to their widowhood. Fishing is typically a male-dominated occupation, and while women actively participate in post-harvest activities such as processing, selling, and marketing, their roles are often undervalued and underappreciated. Widowed fisherwomen face even greater adversity due to a lack of economic resources, social security, and access to basic services like water, sanitation, and hygiene (WASH).

This article examines the socio-economic and WASH challenges faced by widowed fisherwomen in Tamil Nadu, drawing from secondary data sources to explore how these women navigate these hardships and what measures can be taken to alleviate their burdens. The study will focus on understanding their socio-economic status, the barriers they face in accessing WASH services, and propose potential interventions. It also highlights how disaster vulnerability, informal employment, and policy gaps intensify their daily struggles, reinforcing the need for gender-sensitive planning and inclusive welfare frameworks that recognize widowed fisherwomen as key contributors to coastal livelihoods.

OBJECTIVES OF THE STUDY

The primary objectives of this study are:

1. To explore the socio-economic challenges faced by widowed fisherwomen in Tamil Nadu.
2. To identify the specific WASH challenges encountered by widowed fisherwomen.
3. To examine the social and cultural factors that exacerbate the difficulties widowed fisherwomen face.
4. To analyze the role of governmental and non-governmental organizations in providing support to these women.
5. To propose recommendations for improving the socio-economic and WASH conditions for widowed fisherwomen in Tamil Nadu.

REVIEW OF LITERATURE

Socio-Economic Challenges Faced by Women in Fisheries:

Several studies have highlighted the precarious socio-economic position of women in fisheries. According to Vasanthi (2015), fisherwomen in Tamil Nadu face significant challenges such as low wages, lack of recognition for their work, and limited access to resources like credit and land. These challenges are amplified for widowed women who often lack the support systems available to married women.

Impact of Widowhood on Socio-Economic Status

Widowhood adds a layer of complexity to the socio-economic condition of women. According to Rajan (2018), widowed women in rural areas of India, including those in coastal communities, face severe financial instability. They have to bear the burden of raising children and managing household responsibilities without adequate support or income. This is particularly true in the fishing industry, where women's roles are often restricted to informal labor without secure compensation.

WASH Challenges for Widowed Women

Access to clean water, sanitation, and hygiene is a fundamental right, but it remains a challenge for many fisherwomen. According to a report by the WaterAid Foundation (2017), rural women, especially widows, face barriers to accessing WASH facilities due to distance, lack of infrastructure, and social stigma. Widowed fisherwomen in Tamil Nadu, as highlighted by Krishnamurthy et al. (2019), often live in fishing hamlets where infrastructure is poor, and access to sanitation facilities is limited.

Interventions and Support Mechanisms

Several organizations have attempted to address these issues, including governmental programs like the National Rural Livelihood Mission (NRLM) and NGO interventions. However, studies by Saravanan (2020) suggest that these programs often fail to adequately address the specific needs of widowed fisherwomen, particularly in terms of access to resources and social security.

METHODOLOGY

This study is based on secondary data collected from various reports, journals, books, and government publications. The secondary data is analyzed to understand the socio-economic and WASH challenges faced by widowed fisherwomen in Tamil Nadu.

DATA SOURCES INCLUDE:

Government reports on fisheries and women's welfare (such as Ministry of Fisheries reports),Research articles and publications on women in fisheries in Tamil Nadu, NGO reports focusing on widowed women's welfare and WASH services in rural Tamil Nadu, Statistical data from regional surveys on water, sanitation, and hygiene access.

The analysis will include a review of key socio-economic indicators, such as income levels, employment types, educational access, and health outcomes. Additionally, WASH-related data will be assessed to understand the availability of clean water, sanitation facilities, and the general health conditions of widowed fisherwomen.

FINDINGS AND ANALYSIS

Socio-Economic Challenges

Poverty and Income Instability: Widowed fisherwomen in Tamil Nadu often have limited access to financial resources, making it difficult for them to support their families. Their income primarily comes from informal, low-paying jobs in the fishing sector, such as fish processing and selling.

Lack of Social Security: Widowed women often do not receive adequate social welfare support. Without a formal income or pension system, they are left vulnerable to poverty.

Limited Education and Skill Development: Many widowed fisherwomen have limited access to education and skill development opportunities, which limits their ability to explore alternative livelihood options.

WASH CHALLENGES

Access to Clean Water: Many coastal villages where fisherwomen reside lack reliable water supply systems. Widowed women, often living alone or with children, struggle to fetch water from distant sources.

Sanitation Facilities: There is a significant lack of sanitation infrastructure in many fishing hamlets. Women, particularly widows, face the challenge of maintaining hygiene under difficult circumstances.

Health Concerns: Poor WASH conditions contribute to health issues such as waterborne diseases, which disproportionately affect women and children in fishing communities.

SUGGESTIONS

Economic Empowerment Programs: Government and NGOs should focus on providing widowed fisherwomen with access to financial literacy programs, microcredit, and self-help groups to enhance their financial independence.

WASH Infrastructure: Immediate efforts should be made to improve the availability of clean water and sanitation facilities in coastal fishing villages. Local governments and international organizations can work together to provide sustainable solutions.

Social Security and Welfare Schemes: Widowed fisherwomen should be included in social security schemes and provided with financial support. Pensions or disability benefits should be extended to widows in rural areas.

Skill Development: Training programs focusing on skill development, such as alternative livelihood options like tailoring or food processing, can help widowed women diversify their income sources.

Awareness and Advocacy: Awareness campaigns to reduce social stigma around widowhood and encourage the inclusion of widowed women in community decision-making processes are essential.

CONCLUSION

The socio-economic and WASH challenges faced by widowed fisherwomen in Tamil Nadu are significant and multifaceted. While efforts have been made by both government and non- governmental organizations to address these issues, much more needs to be done. Targeted interventions that focus on economic empowerment, improving WASH infrastructure, and providing social support can help alleviate some of the burdens faced by these women. Ultimately, a comprehensive approach that integrates economic, social, and infrastructural development is essential to improve the lives of widowed fisherwomen in Tamil Nadu.

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