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RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

A DESCRIPTIVE STUDY ON CUSTOMER PREFERENCE TOWARDS SHOPPING IN VR FORUM MALL WITH SPECIAL REFERENCE TO CHENNAI CITY

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Abstract

The wealth of products and services produced in a country make our economy strong. Almost all the products which are available to buyer, have several alternative supplies I.e., substitute products are available to consumers, who plan to buy products. Therefore, a seller, most of his time, seeks buyers and tries to please them. To be successful seller may concern with who is our customer? What does customer buy? Where does customer buy? How does customer buy? Here a study on customer preference in shopping malls with special reference to LULU Mall in Coimbatore city. The purpose of the study is to know the customer preference awareness in buying process. Here the researcher adopt descriptive research design and convenience sampling has been used to carry out the study of the sample size is taken 101 both primary and secondary data were used for the study. The primary data is collected through structured questionnaire. Questionnaire was prepared and calculated customer among after that analysis has been made by using various statistical tools. The researcher used 3 tools namely Simple percentage, Chi-square and ANOVA to know the level of customer preference and after analysis relevant interpretation was given according to base on the result obtained finding, suggestion and conclusion are formed.

Key words: Customer, Preference, Buyers, Sellers

INTRODUCTION OF THE STUDY

Retailing has emerged as one of the most important sectors of Indian economy beyond the 90s. Many retail model retail formats have come in force offering a wide spectrum of merchandise and services retailing as a concept is not new in India. In fact, it dates to the period of hardcore traditional formats of retailing that prevailed in the form of Hats', Weekly Bazaars, and the famous Korana stores or 'Beanie kin Duran'. It is only during recent past that Indian

retail sector is witnessing a process of change and is poised to undergo dynamic transformation. India is now developing into a retail power where both organized and unorganized retail sector compete the hypermarket combines supermarket, discount and warehouse retailing principles. Its product assortment goes beyond routinely purchased goods and includes furniture, large and small appliances, clothing and many items. The basic approach is bulk display and minimum handling by store personnel, with discounts offered to customers who are willing to carry heavy appliances and furniture out of the store. Just a few years back, people had to make a choice among shopping, movies or hanging out on a holiday but thanks to our malls, all these jobs can be performed at the same time, under the same roof and that too with a wonderful experience. And it is basically the experience and not that counts when it comes to malls. The reason why shopping malls are so popular lies in their international appeal.

PROBLEM OF THE STUDY

The changing customer perception because of the availability of variety of products customer preference in shopping malls along with the growing number of competitors had a major impact in the preference of particular brand. The customer decision making process also changes as their buying pattern changes.

OBJECTIVES OF THE STUDY

- To analyze customer satisfaction towards shopping malls.
- To study marketing strategy of shopping malls.
- To study the customer opinion towards shopping malls.

SCOPE OF THE STUDY

- The present study mainly focused on customer preference towards shopping malls.
- This studies the various factors that are to be considered for the influence of customer towards shopping malls.
- This study will help them to understand, how to attract their customer.
- To study here has been limited to analyze strategy of the shopping malls towards the customer and their sales performance.

REVIEW LITERATURE

- ❖ **Ballenger (1977)** found that some consumers placed the greatest value on convenience and economic attributes including convenience to home, accessibility, and the presence of services such as banks and restaurants. Others however, emphasized recreational attributes including atmosphere, fashion ability, variety of stores and merchandise.
- ❖ **Vaughn and Hansotia (1977)** opined that merchandise and convenience seem to be the two underlying dimensions which consistently appear every time. Merchandise

quality, merchandise variety, atmosphere of shopping area, availability of sale items and ease of shopping comparisons are all component parts of this underlying dimension.

- ❖ **McCarthy (1980)** attempted to include transport mode / travel attributes in studying the role of the qualitative characteristics that influence the choice in shopping destination. Using the factor analytical technique, five sets of qualitative generalized attributes were generated. These generalized attributes include trip convenience, trip comfort, trip safety, shopping area attraction and shopping area mobility. He found that these generalized attributes, which were obtained from attitudinal information, are significant in an individual's choice of shopping area.
- ❖ **Kim and Kang (1997)** identified seven factors influencing the patronage of malls, strip malls, power centers and factory outlets, only lower prices, easy product return and convenience – a factor comprising trading hours – were regarded as important by patrons of all four retail formats.

RESEARCH METHODOLOGY

Define Research:

Research in common parlance refers to search for knowledge. One can also define a research as a scientific and systematic search for pertinent information on a specific topic

Research and Methodology :

It is a way to scientific and systematic research for pertinent information on a specific topic and for solving the research problem.

Research and Design:

The study is designed as descriptive based research. The descriptive research study is used for defining analyzing the research problem effectively. A descriptive study may help the researcher to describe various characteristics associated with subset of population.

Sampling Technique :

The sampling technique used in the study is simple random sampling

Sample Size:

The total population of the sample size involves 111 respondents.

Research Questionnaire:

Questionnaire contains demographic profiles and set of standard question related to analyze the brand preferences of the employees.

Method of Data Collection:

The study involves both primary and secondary mode of data collection
Primary Data:

The primary data are those which are collected as fresh and for the first time and thus happen to be original in character. The primary data is collected mainly through questionnaire.

Secondary Data:

The secondary data was collected from periodicals, books and documents of the organization. The secondary data, on the other hand, are those which have already been collected by someone else and which have been passed through statistical process.

Statistical Analysis Method Used:

- Percentage analysis
- Chi square analysis
- ANOVA

Hypothesis

H₀: There is no relationship between Time saving and malls availability of product under one roof.

H₀: There is no relationship between occupation and Frequency of visit

H₀: There is no relationship between regular customer in VR-FORUM Mall and shopping convenience

Table No 1: Showing Relationship Between Times Saving and Malls Availability of Product Under One Roof

Association Between Time Saving and Product Availability			
Pearson Chi-Square	Value	Df	Asymp. Sig. (2-sided)
Chi-Square	12.836 ^a	16	.685
Likelihood Ratio	14.308	16	.576
Linear-by-Linear Association	.070	1	.791
N of Valid Cases	105		
SOURCE: PRIMARY DATA			

a. 16 cells (64.0%) have expected count less than 5. The minimum expected count is .04.

Interpretation:

Chi-square is significance accepts the null hypothesis and shop at malls saves time and a mall provides everything under one roof is independent.

Table No 2: Showing Relationship Between Occupation and Frequency of Visit

Association Between Occupation and Frequency of Visit					
ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	2.009	4	.502	.402	.807
Within Groups	125.038	100	1.250		
Total	127.048	104			
SOURCE: PRIMARY DATA					

Interpretation:

ANOVA is significance accepts the null hypothesis and infers the occupation and visit malls more than once in a week are independent.

Table No 3: Showing Relationship Between Regular Customers in Vr-Forum And Shopping Convivence

Association Between Regular Customer and Shopping Convenance					
ANOVA	Sum of Squares	Df	Mean Square	F	Sig.
Between Groups	1.376	4	.344	1.504	.207
Within Groups	22.871	100	.229		
Total	24.248	105			
SOURCE: PRIMARY DATA					

Interpretation:

ANOVA is significance accepts the null hypothesis regular customer in VR-FORUM and malls are safer than local markets infer they are independent.

Findings Derived from Hypothesis

H1: There is no relationship between Time saving and malls availability of product under one roof.

Here the Chi-square is significance accepts the null hypothesis and shop at malls saves time and a mall provides everything under one roof is independent. (Refer table no: 1)

H2: There is no relationship between occupation and Frequency of visit.

Here the ANOVA is significance accepts the null hypothesis and infers the occupation and visit malls more than once in a week are independent. (Refer table no: 2)

H3: There is no relationship between regular customer in VR-FORUM Mall and shopping convenience.

Here the ANOVA is significance accepts the null hypothesis regular customer in VR-FORUM Mall are safer than local markets infers that are independent. (Refer table no: 3)

SUGGESTIONS

- Customer service offers and discounts are suggested to be improved.
- Advertisements about the dealer should be given frequently in the FM radios and newspaper and television and roads shows and exhibitions to reach the people easily.
- It suggested that the quality of after sales and service can be improved up to expectations of the customer.
- The shopping malls can go for their own exclusive membership cards to encourage the shopping malls.

CONCLUSION

From this study, it is concluded that the most customer preference in shopping malls. Quality environment, convenience, place for celebrations in that order are the factors considered important by the youth. They give least importance to value for money. The mall culture is gaining importance among the youth as it gives them space and at the same time helps them enjoy with their friends and family. Hence, malls have to position themselves as the place for youth and create confidence among them safety and security of the consumer. The future mall is bright as most youth like to visit these places.

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REVEALING THE POWER OF SOCIAL MEDIA: HOW ADVERTISING INFLUENCES CONSUMER PURCHASE INTENTIONS

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ABSTRACT

This research investigates the influence of social media advertising on consumer behavior in the context of online shopping. Social media offers a broader reach, greater visibility, and a more lasting impact. The study surveyed 396 respondents, and the data were analyzed using SPSS and Excel. Reliability was confirmed with a Cronbach's alpha exceeding 0.7, while data adequacy was verified through Exploratory Factor Analysis. The findings indicate that factors such as virtual engagement, consumer trust, brand commitment, and user participation significantly shape a company's online reputation. The study highlights the importance of interpreting online customer feedback especially from younger consumers to better predict purchasing behavior. It concludes that businesses should regularly update their marketing strategies and product offerings to maintain customer loyalty and stay competitive in the digital marketplace. Social media thus emerges as a powerful influence on buying decisions.

Keywords: Consumer Satisfaction, Relative Value, Commitment, Trust.

INTRODUCTION

The phrase "social media" describe a variety of web-based tools that accepts people to interact and have visual and vocal communication. Today's buzzword, social media, is widely used by Individuals from every age group and they seem to be rapidly adapting to this latest technological innovation. Businesses are progressively utilizing social media to shape their marketing strategies. Studies highlight its crucial role in influencing consumer behavior and guiding purchasing decisions Wang & Yu (2015) emphasizing the dual impact of positive and negative reviews and identifying word-of-mouth (WOM) on social media as a vital advertising tool. Harshini (2015) illustrates how engaging social media advertisements effectively drive consumer purchase intentions, while Balakrishnan, Dahnil & Yi (2014) underscore the importance of targeting tech-savvy younger audiences through social media for brand building and enhanced buying intent. Lee (2013) further points out that social media facilitates detailed

product comparisons and provides comprehensive specifications, aiding consumers in making informed decisions. Martinka (2012) compares Facebook and Twitter, revealing Facebook's stronger influence on online buying behavior. Meanwhile, Drell (2011) highlights a generational divide, noting that teenagers actively share and recommend products online, benefitting brands, whereas older consumers favour traditional shopping methods, prioritizing quality over brand. The research being conducted has the potential to reveal how social media advertising affects feedback, content sharing, enjoyment, engagement, and networking. This study paper tries to illustrate the effectiveness of social media advertising on consumer's buying decision. Customer brand engagement, trust, and performance expectations influence purchase intent. This will give you an idea of the options available and the problems you may come across when using social networks as a marketing tool. Hence, the problem is taken for the present study titled, effectiveness of social media advertisements on consumer's buying decision. This research examines the relationship between factors influencing consumers' decisions based on social media marketing and proposes a model. After analyzing the data, the researchers sought to present conclusions based on the data and provide specific recommendations and practical implications for marketers. Social media may be used by companies, entrepreneurs, political parties, organizations, advocacy groups, and governments to strengthen people's sense of belonging to online or offline communities. It may be a useful tool for various kinds of communication. This research aims to evaluate the impact of social media advertisements on consumer purchasing decisions and to serve as a guide for social media advertisers in designing more effective social media ads.

a. Consumer buying process: The Buyer Decision Process is also referred to as the consumer buying process, outlines the steps individuals take when making purchasing decisions. It begins with recognizing and understanding their needs. Following this, consumers gather relevant information to find the best solution to meet these needs. The next step involves evaluating different alternatives before finally deciding on a purchase. Afterward, consumers assess their satisfaction with the purchase. This process provides insight into how individuals make buying decisions, offering valuable knowledge for businesses aiming to connect with and serve their target market effectively.

b. Consumer Decision-Making in the Digital Era: In today's digital-focused world, social media has revolutionized how people connect, share, and engage with content with billions of users active across various platforms, businesses have quickly recognized the value of advertising on these platforms as a means to reach highly targeted audiences. Social media ads not only offer businesses the opportunity to connect with potential customers but also provide a level of personalization and precision in ad delivery that traditional forms of advertising simply can't match. But the real question is: how effective are social media ads in influencing consumer decisions?

c. The Evolution and Growth of Social Media Advertising: Over the past decade, social media advertising has experienced unprecedented growth. With platforms like Facebook, Instagram, YouTube, LinkedIn, and TikTok continually enhancing their advertising capabilities, the volume and sophistication of ads shown to users have escalated. What distinguishes social media ads from traditional advertising is their ability to precisely target audiences based on factors like interests, behaviors, demographics, location, and past interactions. Platforms like Facebook offer advertisers the power to run tailored campaigns

directed at individuals who have expressed interest in specific products or services or even engaged with their website or app. By leveraging data collection, social media ads can be personalized to match individual preferences, making them more relevant and engaging. This targeted approach not only enhances user interaction but also drives higher conversion rates, leading to increased sales and better overall campaign performance.

d. Exploring the Psychology Behind Social Media Ads: The effectiveness of social media advertising stems from its ability to harness consumer psychology, creating personalized, engaging experiences that seamlessly blend with user-generated content. Platforms like Instagram and TikTok have evolved to focus heavily on visual appeal, creating immersive experiences that blur the line between user-generated content and advertisements. Consumers often do not even realize when they're looking at an ad due to the seamless integration of sponsored content into their feeds. One psychological concept that enhances the effectiveness of social media ads is priming. Social media content is highly curated to the user's preferences and past interactions. When an ad resonates with these preferences, it creates a feeling of familiarity and comfort for the user, increasing the likelihood of engagement. For example, when a user sees an ad for a pair of shoes they've already researched or viewed online, the familiarity with the product primes them to consider making a purchase. Another key psychological factor at play is scarcity and urgency. Many advertisements generate a sense of urgency with limited-time offers or countdowns. This taps into a fundamental human tendency to act quickly when we feel we might miss out, a principle known as FOMO (fear of missing out). Such tactics can significantly influence a decision-making behavior of consumers and encouraging them to make quicker purchasing decisions.

e. The Influence of social media on Shaping Consumer Behavior: The influence of social media on consumer behavior cannot be overstated. Research by Nielsen and other marketing firms has shown that users often look to social media for recommendations before making purchase decisions. Whether it's browsing product reviews, discovering new trends, or getting inspired by influencer endorsements, social media has evolved into a powerful tool.

f. Social media as A Research Tool: Consumers no longer solely rely on traditional advertising or in-store browsing when making purchasing decisions. Social media platforms are frequently utilized as research hubs where users can discover new products, read in-depth reviews, and compare different options. Platforms like Instagram and Pinterest, for example, serve as visual search engines where users can find inspiration and evaluate product options directly within the app. Moreover, user-contributed content has evolved into one of the most trusted forms of content, further enhancing the decision-making process. Customers frequently turn to reviews, ratings, and personal experiences shared on social media to guide their decisions. If an influencer or fellow consumer shares an experience that aligns with their values or needs, it can lead to a conversion from interest to purchase.

g. Leveraging Influencer Marketing: A significant trend in social media advertising is the growing prominence of influencer marketing. Influencers, individuals with large followings on social media, have become essential collaborators for brands aiming to boost brand awareness and drive sales. With their ability to cultivate authentic relationships with their followers, influencers can make advertisements feel more like personal recommendations than traditional ads. Influencers impact purchasing decisions due to their trustworthiness and relatability. Studies indicate that consumers are much more likely to trust a recommendation from an influencer than a direct advertisement from a brand. The more organic and aligned the influencer's content is with a brand's message, the more effective the partnership becomes.

This is why many brands now prioritize micro-influencers (those with smaller but highly engaged followings) over mega-influencers, believing that their authenticity can result in better engagement and more meaningful conversions.

h. Data-Driven Results: How Social Media Ads Are Measured: The effectiveness of social media advertising lies in its measurable results. Unlike traditional advertising, digital platforms offer precise tracking and real-time data, allowing marketers to optimize campaigns as they run. Key Performance Indicators (KPIs) like Click-Through Rates (CTR), Conversion Rates (CR), Engagement Rates (ER), and Return on Advertisement Spend (ROAS) are crucial for assessing success. Additionally, conversion attribution helps identify which specific ads lead to purchases, enabling refined targeting and messaging. Social media platforms also provide deep insights into audience behavior, helping brands better understand their consumers. Strategies like A/B testing allow marketers to compare ad variations and identify the most effective approach. This iterative process of analysis and adjustment ensures that campaigns evolve with changing consumer preferences, maximizing their impact and relevance.

i. Challenges of Social Media Advertising: Despite its many advantages, social media advertising comes with its own set of challenges. Ad fatigue is one of the most common issues. As users are exposed to more ads over time, they may become desensitized or irritated, leading to ad-blocking or skipping. Brands must therefore focus on creating ads that are visually captivating and emotionally engaging, rather than intrusive. Privacy concerns are another significant challenge. With increasing attention on user data and privacy laws like GDPR (General Data Protection Regulation) and CCPA (California Consumer Privacy Act), businesses must be transparent about the data they collect and ensure that users' privacy rights are respected. Balancing targeted advertising with privacy protection is crucial for maintaining consumer trust.

LITERATURE REVIEW

Gupta and Kumar (2022) highlight the growing influence of social media in advertising, acknowledging its widespread use while also recognizing the challenges marketers face in effectively promoting products. Their study examines how social media ads impact consumer attitudes and purchase intentions, revealing that factors such as hedonic motivation, interactivity, informativeness, corporate reputation, and social role/image significantly shape consumer perceptions. The study further finds that these attitudes directly influence purchase intentions. The authors conclude that marketers should strategically design social media advertising to positively impact consumer attitudes and drive purchase behavior. The literature review emphasizes key factors influencing purchase intentions, with the exception of materialism, which was found to be insignificant.

Namitha et al. (2021) examine the expanding influence of social media advertising as an emerging marketing strategy, driven by the swift increase in social media users. One key challenge for advertisers has been the low consumer acceptability of ads, making it essential to understand the elements that influence consumer perceptions of social media advertisements. The study aims to identify these factors and their effect on purchase intentions. Through a survey and exploratory factor analysis, the study found that creative features, attention-grabbing details, emotional appeal, and celebrity endorsements play significant roles in how consumers evaluate ads. Structural Equation Modelling further revealed that these elements, particularly attention-grabbing details, celebrity endorsements, and emotional appeal, strongly

impact purchase intentions. The study suggests that focusing on these factors in social media advertisements could improve their effectiveness and boost consumers' intent to purchase.

Cheung et al. (2021) According to the concept of service-dominant logic, major concerns for marketers include the many ways to promote user engagement, consumer-to-consumer involvement, and brand-consumer interactions. The researcher investigates the effect of her customer-to-customer interaction and Customer – brand interaction in managing the cognitive, emotional, and behavioral elements of CBE, as well as their impact on customers' behavioral intents as measured by repurchase intention and continuing search activity. This study illustrates the relevance of two types of CP in increasing the elements of CBE, the cognitive involvement being a significant driver of consumers' sustained search behavior, and affective engagement as well as behavioral engagement are strong indicators of customer repurchase intentions. We give marketers with practical insights to oversee their CP across social media channels.

Fedric & Saumya Singh (2018) highlighted the importance of you tube as an advertising platform and also discussed its strengths and characteristics. A study conducted by the author evaluated the emotional appeals used by popular brands in their YouTube ads. This study only covered ads in India, where he had at least one lakh subscribers and at least ten lakhs' views on you tube in 2016. Using a content analysis approach, we analysed 150 ads and their level of impact of consume involvement. Research has shown that Indian audiences are attracted to emotional stimulation. Positive emotional stimuli, such as those used in you tube ads, Satisfaction, positive emotions like joy and love enhance customer loyalty, whereas negative emotional appeals on YouTube reduce customer loyalty.

Djafarova.et.al. (2017) Academics and business professionals are particularly interested in social media influencers because they have the potential to serve as a brand marketing tool. SMI has transformed the landscape for social media marketing. The growing recognition of SMI has facilitated engagement between businesses with social media influencers. Influencers vary from conventional personalities in that they build their online personas and appeal by providing material for social media channel. Conventional celebrities are recognized through conventional methods and participate in social media as a secondary path to contribute with their supporters.

Saravanan & Sajitha (2016) state that the popularity of the Internet as a medium has increased in recent years, along with significant growth of mass media has declined. Because of this, advertisers have started preferring this medium to get their messages across to their target audience. This study analysed customer attitudes and purchasing patterns. The results of this study showed that online advertising effectively influenced the purchasing behavior of potential customers. Most customers prefer to buy electronic products online and make decisions based on products advertised on the internet. Respondents in this study believe that the Internet is a reliable medium and that messages sent through the medium are reliable and effective. Simple and attractive advertisements in Internet media influence the purchasing decisions of viewers.

Nitin Srivastava et al. (2014) study sought to understand customers' attitudes and perceptions towards online advertising. The study found that the frequency with which people viewed online ads had no effect on their purchasing behaviour. However, online advertising can be highly effective in increasing audience awareness, supporting brand strategy, and

enhancing purchasing decisions. Updating product knowledge, attractive advertising, time savings, and anxiety are the four main characteristics of online advertising tested in the study. Among the four elements tested, respondents considered customer awareness generated through online advertising to be essential. Participants also believed that online advertising can effectively communicate product features, provide up-to-date product information, and persuade. The study authors believed that the effective use of visual elements in online advertising was the reason for its success. Online advertising is attractive and saves customers time when making decisions.

OBJECTIVES

- To determine the positive and negative effects of Social media advertisement.
- To analyze the relationships between relevant factors.
- To explore the connections between four key variables: Customer Satisfaction (CS), Customer Loyalty (CL), Perceived Value (PV) and Trust.

METHODOLOGY

This research employs a combination of descriptive and analytical methods. The descriptive approach reviews consumer buying behavior literature, while the analytical method examines the influence of social media on consumer purchasing intention. A convenience sample of 396 online consumers influenced by social media was selected. Primary data was gathered via a closed-ended questionnaire with multiple-choice questions, enhanced with secondary data from websites and prior studies. The data was analysed using SPSS 26 and Microsoft Excel. Reliability was ensured with a Cronbach's alpha above 0.7. Exploratory Factor Analysis (EFA) was conducted, with the KMO measure confirming data adequacy. We employed Pearson's chi-square test to analyze the relationship between socioeconomic status and its influence on purchase decisions driven by consumer behavior.

RESULTS

Table1: Demographic Profile

Name of the Variable	Demographic	Frequency	Percentage
Gender of the respondents	Male	183	46.2
	Female	213	53.8
Age of the respondents (in years)	20-30	124	31.3
	30-40	134	33.8
	40-50	74	18.7
	above 50	64	16.2
Occupation of the respondents	Employee	83	21.0
	Business	100	25.3
	Professional	97	24.5
	Other	116	29.3
Monthly income (in Rs)	Upto 30000	94	23.7
	30000-40000	146	36.9
	40000-50000	86	21.7
	above 50000	70	17.7
Area of residence	Rural area	137	34.6

	Urban area	259	65.4
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Source: Authors' compilation using SPSS

Most of the participants in the study were female, representing 53.8% of the respondents, primarily aged between 30-40 years (33.8%). In terms of occupation, the largest group fell under the "Other" category (29.3%), followed closely by business professionals (25.3%). Most of the respondents earned a monthly income of Rs. 30,000–40,000 (36.9%) and predominantly resided in urban areas (65%), indicating a sample skewed toward middle-income urban populations with diverse occupational backgrounds.

RELIABILITY ANALYSIS

Data trust depends on accurate and complete information, with the alpha coefficient used to measure internal consistency. A value above 0.7 is regarded as acceptable, while 0.9 or higher indicates excellent consistency. Values below 0.5 are considered unacceptable.

Table 2: Reliability Statistics

Cronbach's Alpha	N of Items
.826	20

Source: Authors' compilation using SPSS

The alpha coefficient value of 0.826 for 20 items demonstrates good internal consistency, indicating that the items are strongly correlated and consistently measure the same underlying concept.

Table 3: KMO and Bartlett's Test

KMO measures Adequacy.,		.770
Bartlett's Test of Sphericity.	Approx. Chi-Square.	7912.578
	Degree of freedom	190
	Sigft,	.000

Source: Authors' compilation using SPSS

The KMO value for Sampling Adequacy indicates 0.770 suggests a moderate to good level of suitability for factor analysis, as values ranging from 0.7 to 0.8 are generally regarded as acceptable. Additionally, the Bartlett's Test of Sphericity shows statistical significance is ($p < 0.05$, Sig. = 0.000), with an approximate chi-square value of 7912.578 and 190 degrees of freedom, confirming that the correlations between variables are adequate for factor analysis.

Table-4: THE COMMUNALITIES

S.No.	Name of the Variables.	Initial	Extraction
1	Influenced by Recommendations	1.000	.824
2	social media has improved my ability to choose products	1.000	.694
3	Customer feedback through social media increases my satisfaction	1.000	.936
4	Satisfied with the overall trustworthiness of online reviews.	1.000	.833
5	social media has encouraged me to try new products	1.000	.809
6	Negative experiences shared through social media have reduced my satisfaction	1.000	.881

7	online reviews improve my shopping experience	1.000	.863
8	I feel more consistently of good online reviews.	1.000	.728
9	I feel confident in my purchase decisions	1.000	.817
10	social media provides better guidance than traditional advertisements.	1.000	.702
11	I see positive reviews about a product or service.	1.000	.724
12	social media helps me to find the right product or service quickly.	1.000	.865
13	Online reviews accurately reflect the quality of the product	1.000	.886
14	My satisfaction decreases when I suspect reviews are fake or paid.	1.000	.830
15	Social media to improve customer satisfaction.	1.000	.377
16	Social media satisfaction ratings care more about their customers.	1.000	.797
17	I believe social media helps me avoid products	1.000	.909
18	Social media to be a reliable source for making purchase decisions.	1.000	.479
19	I tend to leave positive reviews when I'm satisfied with a product	1.000	.882
20	Social media influence meets my expectations for accurate product recommendations.	1.000	.907

Source: Authors' compilation using SPSS

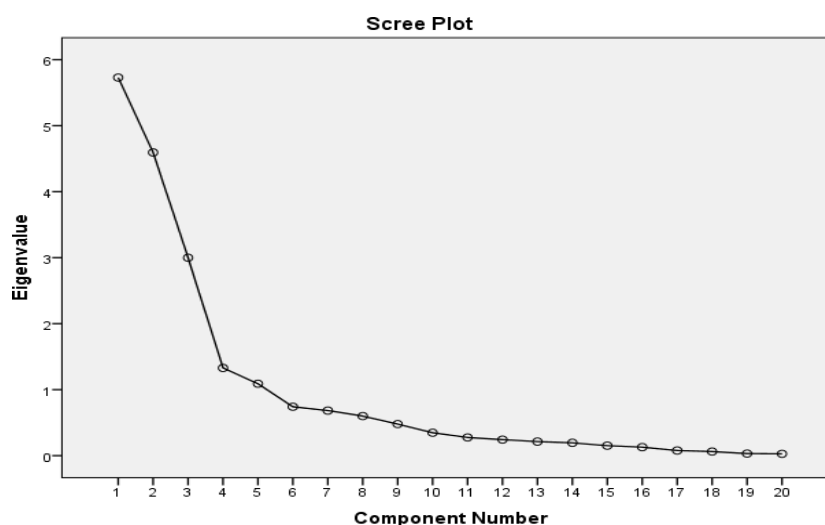
Initially, every variable in the communality is anticipated to share 100% variance. As a result, each item starts with a value of 1.00, indicating that each item shares 100% of the variation. The extraction values range from 0.377 to 0.936, suggesting that the extracted item has a minimum variance share of 37.7% and a maximum variance share of 90.9%.

Table 5: TOTAL EXPLAINED VARIANCE

S.no.	The Eigen values			Extraction Squared Loadings			Rotated Squared Loadings		
	The value s of Eigen	Varian ce percent age	The total percent age	The value s of Eigen	Variance percenta ge	The total perce ntage	Total	Varia nce perce ntage	The total percent age
1	5.730	28.648	28.648	5.730	28.648	28.648	4.065	20.324	20.324
2	4.594	22.971	51.619	4.594	22.971	51.619	3.486	17.428	37.752
3	2.999	14.997	66.615	2.999	14.997	66.615	3.322	16.610	54.362
4	1.329	6.647	73.262	1.329	6.647	73.262	3.252	16.261	70.623
5	1.090	5.449	78.711	1.090	5.449	78.711	1.618	8.088	78.711
6	.741	3.705	82.416						
7	.683	3.416	85.833						
8	.600	2.998	88.830						
9	.479	2.393	91.223						
10	.347	1.737	92.961						
11	.276	1.380	94.340						
12	.243	1.216	95.556						
13	.213	1.066	96.622						
14	.195	.973	97.595						
15	.152	.759	98.354						
16	.129	.646	99.000						
17	.078	.390	99.390						
18	.063	.313	99.703						
19	.031	.156	99.859						
20	.028	.141	100.000						
Principal Component technique is used for the extraction									

Source: Authors' compilation using SPSS

The first component's total variance contribution is (28.648), followed by the second component's (51.619), the third component's (66.615), the fourth component (73.262) and the fifth component (78.711). The Eigen value of a particular factor assesses the variance in all variables that the factor accounts for. It is also obvious that out of the given set of variables, there are a total of four components with Eigen values greater than 1 they are 1, 2, 3,4 and 5 and their Eigen values are (5.730), (4.594), (2.999), (1.329) and (1.090) respectively.

Figure-1: Scree Plot

The components are displayed on the X-axis of the Scree plot along with the corresponding Eigenvalues on the Y-axis. These Eigenvalues are regarded as the first five components: (5.730), (4.594), (2.999), (1.329) and (1.090) Since the highest Eigenvalue is 5.730, this factor is the most significant, followed by all others. These four components are important in this research since they all have Eigenvalues larger than 1 and share the largest variation.

Table 6: ROTATED COMPONENT MATRIX

Factors	Variables	Component					Variance percentage	The values of Eigen
		1	2	3	4	5		
Trust	Influenced by Recommendations	.960					28.648	5.730
	Social media advertisement has improved my ability to choose products	.939						
	Customer feedback through social media advertisement increases my satisfaction	.891						
	Satisfied with the overall trustworthiness of online reviews.	.879						

	Social media advertisement has encouraged me to try new products	.543						
Effectiveness	Negative experiences shared through social media advertisement have reduced my satisfaction		.899				51.619	4.594
	online reviews improve my shopping experience		.878					
	I feel more consistently of good online reviews.		.864					
	I feel confident in my purchase decisions		.845					
	Social media advertisement provides better guidance than traditional advertisements.			.890			66.615	2.999
Behavioral Impact	I see positive reviews about a product or service.			.847				
	Social media helps me to find the right product or service quickly.			.824				
	Online reviews accurately reflect the quality of the product			.810				
	My satisfaction decreases when I suspect reviews are fake or paid.			.652				
	Social media influence to improve customer satisfaction.				.900		73.262	

Perceptions	Social media advertisement satisfaction ratings care more about their customers.				.884		1.329	
	I believe reviews helps me avoid products				.858			
	Social media advertisement to be a reliable source for making purchase decisions.				.730			
	I tend to leave positive reviews when I'm satisfied with a product					.839	78.711	1.090
	Social media influence meets my expectations for accurate product recommendations.					.817		
The principal Component technique is used for the extraction and the Varimax technique is used for the Rotation.								

Source: Authors' compilation using SPSS

The factor analysis identified four key components influencing consumer behavior towards social media advertisements: "Trust," explaining 28.648% of the variance, focuses on the influence of recommendations and customer feedback; "Effectiveness" (51.619%) relates to the function of online reviews in shaping satisfaction and shopping experiences; "Behavioral Impact" (66.615%) highlights the role of positive reviews and quick product discovery; and "Perceptions" (78.711%) emphasizes satisfaction with media influence and its reliability in decision-making. Each component emphasizes the importance of trust, satisfaction, and confidence in social media advertisement.

RESEARCH HYPOTHESIS

- H01: The purchasing decision influenced by social media advertisement is independent of the respondents' gender.
- H02: The purchasing decision influenced by social media advertisement is independent of the respondents' age.
- H03: The purchasing decision influenced by social media advertisement is not dependent on the occupation of the respondents.

Table 7: Cross-tabulation of Gender and the purchasing decision influenced by social media advertisement.

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	10.604 ^a	3	.014
Number of Valid Cases.	396		

Source: Authors' compilation using SPSS

The Chi-Square test indicates a strong association between gender and social media consumer reviews influencing buying intention ($\chi^2 = 10.604$, $p = 0.014$). This suggests that gender differences play a role in how social media consumer reviews affect purchase decisions.

Table 8: Cross-tabulation of age and the purchasing decision influenced by social media reviews

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	17.959 ^a	9	.036
Number of Valid Cases.	396		

Source: Authors' compilation using SPSS

The Chi-Square test shows a significant association between age and social media reviews influencing buying intention ($\chi^2 = 17.959$, $p = 0.036$). This suggests that age differences influence how social media reviews affect purchase decisions.

Table 9: Cross-tabulation of occupation and the purchasing decision influenced by social media advertisement

	The Value.	Degree of freedom	Asytc Sig
Pearson's Chi-Square value	24.030 ^a	9	.004
Number of Valid Cases.	396		

Source: Authors' compilation using SPSS

The Chi-Square analysis demonstrate a significant relationship between occupation and social media reviews influencing buying intention ($\chi^2 = 24.030$, $p = 0.004$). This indicates that occupation significantly impacts how reviews affect purchase decisions.

DISCUSSION

The study validates a theoretical framework for analyzing brand equity in digital retail, emphasizing the critical role of social media influence. The findings highlight the influence of relative importance, trust, and customer experience of social media, while consumer satisfaction, despite its positive association, is less predictable. As consumers grow, their expectations for brand awareness increase, underscoring the need for strong social media advertisement strategies to enhance brand recognition. Trust, perceived value, and commitment significantly impact positive brand equity assessments, even though consumer satisfaction may not directly affect key variables. The study highlights the vital role of social media influence in fostering brand awareness with trust and consumer engagement. These insights enhance our understanding of how social media influence is interconnected with trust, customer loyalty, and brand equity, especially within Trichy's e-shopping and e-payment sectors. Empirical findings reinforce existing theories, providing robust evidence for the proposed model and advancing knowledge in e-retail research.

CONCLUSION

This research looks at the elements that affect the social media influence and how it affects Trichy consumers' online buying habits. The theoretical framework and methodology were built upon previous empirical and statistical research. Following thorough analysis, most assumptions of the study were confirmed and validated, providing robust scientific evidence that the theoretical structure of Trichy Retail Market Research is statistically sound. The conclusions indicate that indicators of consumer satisfaction, perceived value, trust, and customer experience significantly and positively effect on brand awareness. Elements such as CS, PV, trust, and CE serve as crucial metrics for indicating and predicting brand awareness and social media influence. Consequently, to fully comprehend and meet consumer needs and expectations when purchasing products, it is vital to focus on the key characteristics of these variables. The results of this study offer important insights for location managers and marketing firms, enabling them to develop strategies and initiatives aimed at enhancing brand awareness and attracting more potential customers in the forthcoming period.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

ENHANCING FOREIGN TOURISM IN KERALA: THE ROLE OF THE TOURISM PROMOTION COUNCIL

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Abstract

Kerala, has successfully marketed its natural beauty and cultural heritage, establishing itself as a prime destination for both domestic and international tourists. The Kerala Tourism Promotion Council (KTPC) has played a pivotal role in this success by implementing targeted campaigns, which highlight the state's diverse tourism offerings, such as eco-tourism, medical tourism, and cultural tourism. Kerala's tourism sector has seen impressive growth, with a significant increase in foreign tourist arrivals, contributing greatly to the state's economy through revenue generation, employment, and infrastructure development. This study aims to assess the impact of KTPC's initiatives on foreign tourist arrivals, evaluate the economic contributions of foreign tourism, and explore challenges and future strategies for sustainable tourism promotion in Kerala. By analyzing secondary data from government reports, KTPC publications, and tourism industry journals, the study provides a comprehensive overview of the relationship between tourism promotion and foreign tourist inflow. The research also identifies challenges such as seasonal fluctuations and environmental concerns while recommending strategies like off-season tourism and eco-tourism to ensure the state's long-term success in the global tourism market.

Keywords: Kerala Tourism Promotion Council, foreign tourists, eco-tourism, sustainable tourism, economic contribution, tourism infrastructure.

INTRODUCTION

One of the few states that has successfully marketed its natural beauty to the vacation travel sector is Kerala. Renowned for its rich heritage and cultural diversity, the state has become a popular destination for travellers globally. Often referred to as "God's Own Country," Kerala saw remarkable tourism growth in 2022, drawing 18 million domestic visitors

and 345,549 international tourists, marking an impressive year-on-year increase of 152%. Tourism is a vital contributor to Kerala's economy, attracting millions of visitors each year, both domestic and foreign (Kerala Tourism Department, 2023). Kerala's unique cultural heritage, pristine beaches, tranquil backwaters, lush landscapes, and ancient Ayurveda practices have established the state as a prime tourism destination. The state's tourism industry has witnessed significant growth, with foreign tourist arrivals steadily increasing over the years. In 2019, Kerala recorded over 1.2 million foreign tourists, contributing significantly to the state's economy by generating employment and supporting local businesses (Kerala Tourism, 2020). The Kerala Tourism Promotion Council (KTPC) plays a pivotal role in this success by promoting the state's tourism offerings and implementing marketing campaigns that position Kerala as a global tourist hub.

The Kerala Tourism Promotion Council was established to facilitate the growth of the tourism sector by formulating policies, promoting marketing strategies, and coordinating with stakeholders. One of the council's most notable campaigns, "God's Own Country," has significantly contributed to boosting Kerala's international reputation. KTPC's strategies involve promoting diverse forms of tourism, like eco-tourism, medical tourism, and cultural tourism, targeting foreign tourists from key markets such as the U.S., the UK, Southeast Asia and the Middle East, (Kerala Tourism, 2021). These efforts have not only enhanced tourist arrivals but have also fostered sustainable tourism practices by encouraging the responsible development of tourist infrastructure.

In light of these developments, this study aims to assess the impact of KTPC's initiatives on foreign tourist arrivals, evaluate the economic contributions of foreign tourism, and explore the challenges and future strategies for sustainable tourism promotion. By relying on secondary data, the study will provide a comprehensive understanding of the relationship between tourism promotion and foreign tourist inflow, highlighting the key strategies that could shape the future of Kerala's tourism industry.

LITERATURE REVIEW

Tourism has become one of the most significant economic drivers in Kerala, with a growing number of foreign tourists visiting the state each year. Researchers and authors have explored the various factors contributing to the success of Kerala's tourism industry, highlighting the crucial role played by the Kerala Tourism Promotion Council (KTPC).

According to the research by **Arun and Mohanan (2021)**, KTPC's collaboration with local communities and tourism stakeholders has fostered the development of unique tourism products that appeal to a wide range of international tourists. They argue that Kerala's success lies not only in its marketing campaigns but also in its competence to create authentic and culturally rich experiences for visitors.

Kumar and Mohan (2020) who argue that Kerala's emphasis on eco-tourism has allowed the state to differentiate itself from other tourism destinations while maintaining a commitment to sustainable practices. However, there are challenges to Kerala's tourism growth.

Varghese and Thomas (2020) echoed that while foreign tourist arrivals in Kerala have grown, the state's reliance on specific tourist seasons has made it vulnerable to changes in travel patterns and global economic conditions. To address these challenges, the authors propose

strategies like diversifying the tourism offerings and promoting off-season tourism to maintain a steady flow of visitors throughout the year. Despite the challenges, several authors agree that KTPC's strategic initiatives have played a significant role in transforming Kerala into a leading global tourist destination.

Sreenivas (2019) discusses the issue of seasonal fluctuations in tourist arrivals, which impacts businesses that depend on consistent visitor traffic. In a study on the role of KTPC in shaping Kerala's tourism policies. This finding is supported by the report from the Ministry of Tourism (2018), which states that tourism is a major source of revenue for Kerala, accounting for a significant portion of its GDP.

Radhakrishnan (2018) highlights the council's contribution to sustainable tourism development. The author notes that KTPC's initiatives go beyond mere promotion, as the council works closely with local communities, government agencies, and private stakeholders to ensure that tourism growth is balanced with environmental sustainability.

Nair (2017) discusses the impact of Kerala's tourism on the local economy, noting that foreign tourist arrivals have contributed significantly to employment generation, infrastructure development, and the growth of related sectors like hospitality and transportation. According to this report, foreign tourist arrivals have grown at a steady pace over the years, and Kerala has become one of the top destinations for international tourists in India.

According to **Soni and Sharma (2016)**, Kerala's tourism growth is largely attributed to its well-targeted promotional campaigns, such as "God's Own Country," which has successfully located the state as an exclusive destination for both international and domestic tourists. The authors emphasize the importance of marketing strategies in attracting foreign tourists and suggest that KTPC's branding efforts have been instrumental in increasing Kerala's visibility on the global tourism map.

OBJECTIVES OF THE STUDY

- To analyze the impact of Kerala Tourism Promotion Council's initiatives on foreign tourist arrivals.
- To evaluate the contribution of foreign tourism to Kerala's economy.

METHODOLOGY

The methodology for this study primarily relied on secondary data collection, sourcing information from government reports, publications from the Kerala Tourism Promotion Council (KTPC), academic research papers, and tourism industry journals. Key statistics related to foreign tourist arrivals over the past decade were collected from reports by the Ministry of Tourism, Kerala Tourism, and other relevant agencies, allowing for a comprehensive assessment of trends and growth patterns.

KERALA'S TOURISM INDUSTRY

The state's tourism success can be attributed to a variety of factors, including targeted promotional campaigns, government initiatives, and a focus on sustainable tourism. The Kerala Tourism Promotion Council (KTPC) has played a fundamental role in shaping and marketing the state's tourism offerings through campaigns such as the "God's Own Country" initiative, which emphasizes Kerala's natural beauty and rich cultural heritage. Kumar and Mohan (2020) highlight that Kerala's tourism development has embraced eco-tourism and responsible tourism, balancing economic growth with environmental conservation. In addition, the state's

government has invested in infrastructure projects such as improved airports, roadways, and tourism facilities to enhance the overall visitor experience. This commitment to sustainable growth and the diversification of tourism products has helped Kerala maintain its position as one of India's top tourism destinations. Despite the success, Kerala's tourism industry faces challenges, such as seasonal fluctuations and environmental concerns. As Sreenivas (2019) points out, the heavy reliance on peak tourist seasons can create instability for businesses dependent on a steady stream of visitors throughout the year. Additionally, the pressure on the state's natural resources and ecosystems requires careful management to preserve Kerala's appeal to future generations of travellers. In response to these challenges, Kerala is focusing on expanding its tourism offerings beyond traditional peak seasons and promoting initiatives like eco-tourism, digital marketing, and off-season packages to attract tourists year-round.

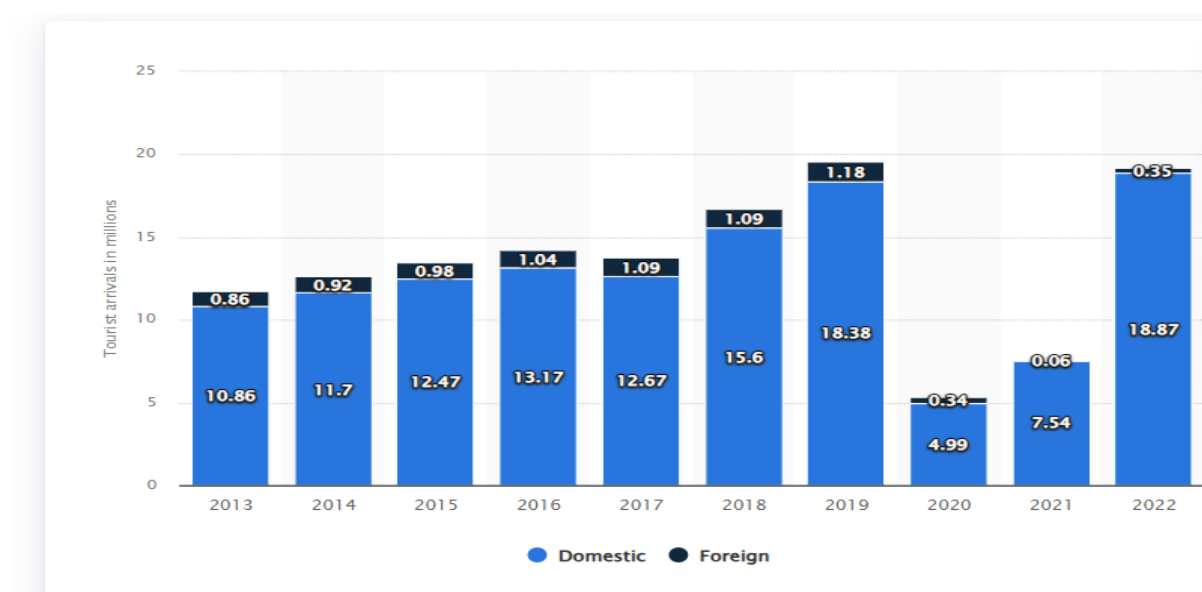


Fig 1: Tourist arrivals, both foreign and domestic, in Kerala, India from 2013 to 2022.(in millions) (Source: <https://www.statista.com>)

ROLE OF KERALA TOURISM PROMOTION COUNCIL (KTPC)

The Kerala Tourism Promotion Council (KTPC) plays a crucial role in shaping the state's tourism industry, both domestically and internationally. Established by the Government of Kerala, KTPC is responsible for formulating and implementing policies, conducting promotional campaigns, and collaborating with various stakeholders in the tourism sector. One of the most successful initiatives of KTPC is the "God's Own Country" campaign, which has significantly contributed to the state's branding and recognition on the global tourism map. According to Nair (2017), KTPC's marketing strategies have been instrumental in positioning Kerala as a unique destination offering a blend of natural beauty, cultural heritage, and wellness tourism. By focusing on targeted campaigns and events, KTPC has helped Kerala attract a steady influx of both domestic and foreign tourists, leading to substantial economic growth in the region.

Additionally, KTPC plays an essential role in development of tourism infrastructure and services in Kerala. By working with the government and private sector, KTPC has been

involved in upgrading infrastructure such as airports, hotels, and transportation systems, which are crucial for attracting international tourists. According to the Kerala Tourism Annual Report (2020), KTPC's strategic collaborations have led to the establishment of world-class facilities and services that cater to the growing demand for high-quality tourism experiences. Moreover, the council's focus on promoting lesser-known destinations within the state has helped distribute tourism benefits to regions outside of the traditional hotspots, thereby reducing overcrowding and promoting inclusive growth.

TRENDS IN FOREIGN TOURIST ARRIVALS IN KERALA

Growth Patterns Over the Years

Foreign tourist visits (FTVs) to Kerala have shown varying trends over the years. The table below outlines the changes in foreign and domestic tourist visits from 2019 to 2022.

Table 1: Foreign Tourist Visits (FTVs) to Kerala from 2019 to 2022

Year	Domestic Tourist Visits (DTV)	Foreign Tourist Visits (FTV)	Annual Growth Rate (DTV)	Annual Growth Rate (FTV)
2019	1,83,84,233	11,89,771	17.81%	8.52%
2020	49,88,972	3,40,755	-72.86%	-71.36%
2021	75,37,617	60,487	51.09%	-82.25%
2022	1,88,67,414	3,45,549	150.31%	471.28%

(Source: <https://www.keralatourism.org>)

The trends in foreign tourist visits (FTVs) to Kerala over the years show significant fluctuations, especially with the impact of the COVID-19 pandemic. In 2019, Kerala recorded a healthy increase in both domestic and foreign tourist visits, with FTVs reaching 1.2 million and an annual growth rate of 8.52%. However, the pandemic's onset in 2020 caused a sharp decline in tourism, with foreign tourist arrivals plummeting by 71.36% due to global travel restrictions and safety concerns. This sharp drop in FTVs, which fell to just 340,755, mirrors the broader decline in global tourism during the pandemic. In 2021, Kerala's foreign tourism continued to be significantly impacted, with a further decline of 82.25% in foreign tourist arrivals. Despite the challenging circumstances, domestic tourism began to show signs of recovery with a 51.09% increase. The recovery in foreign tourism became evident in 2022, when FTVs surged by 471.28%, reaching 345,549, indicating a strong rebound as travel restrictions eased and international tourism gradually resumed. Domestic tourism also saw a remarkable recovery in 2022, with a 150.31% increase, reflecting the growing confidence in travel and the resumption of normal tourism activities in Kerala.

Country-wise Distribution of Foreign Tourists

Most foreign tourists visiting Kerala in 2022 came from the following countries:

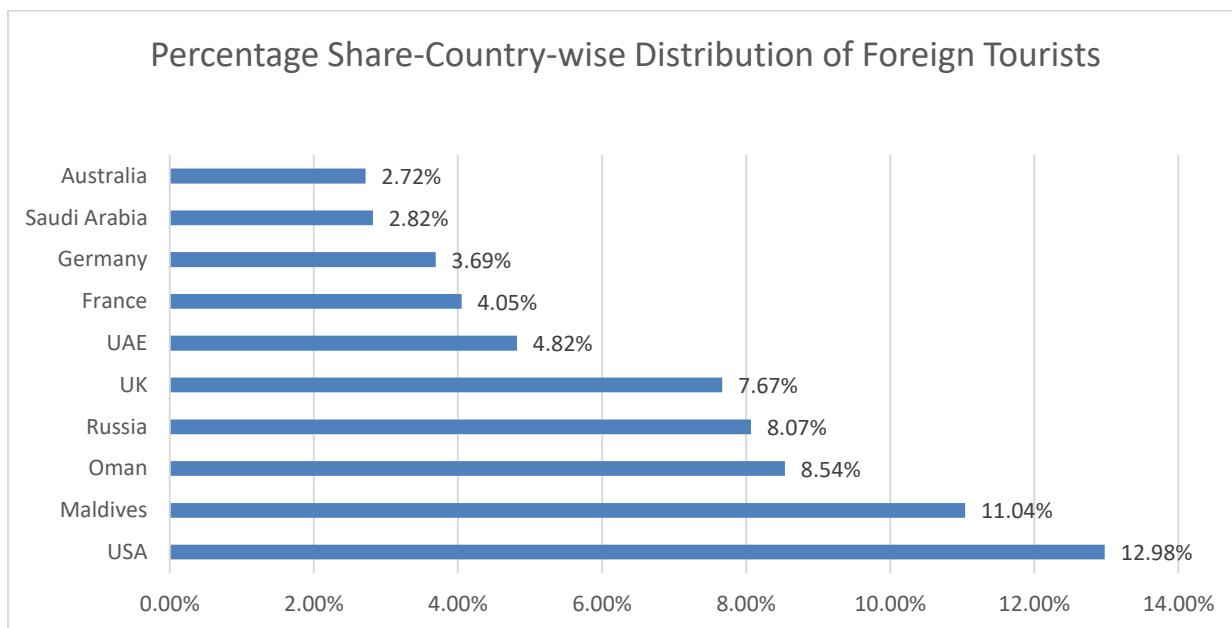


Fig 2: Most Foreign Tourists Visiting Kerala in 2022 (Source: <https://www.keralatourism.org>)

These ten countries accounted for 66.4% of the total foreign tourist visits to Kerala in 2022. In 2022, Kerala saw a significant influx of foreign tourists, with a diverse range of countries contributing to the state's tourism industry. The United States emerged as the top contributor, accounting for 12.98% of foreign tourist arrivals, followed by the Maldives with 11.04%. Other notable countries included Oman (8.54%), Russia (8.07%), and the United Kingdom (7.67%). This diverse demographic underscores Kerala's broad appeal, attracting visitors from both Western countries and neighboring regions in the Middle East and Southeast Asia. These nations represent key markets for Kerala's tourism industry, drawn to its unique offerings such as backwaters, Ayurveda, beaches, and cultural heritage. The data reveals the importance of international markets in shaping Kerala's tourism trends. While countries like the USA and the UK reflect the global appeal of Kerala's unique tourism experiences, regional visitors from countries like the Maldives, Oman, and the UAE also play a critical role. The relatively high percentage of Russian and European tourists, including those from France, Germany, and Australia, further indicates Kerala's growing attraction as an international travel destination. This diverse influx of tourists showcases the effectiveness of Kerala Tourism Promotion Council's (KTPC) marketing efforts, which have been tailored to appeal to a wide spectrum of global travellers.

Destination-wise Foreign Tourist Visits

Kochi City remained the most popular destination among foreign tourists, followed by Thiruvananthapuram and Kovalam.

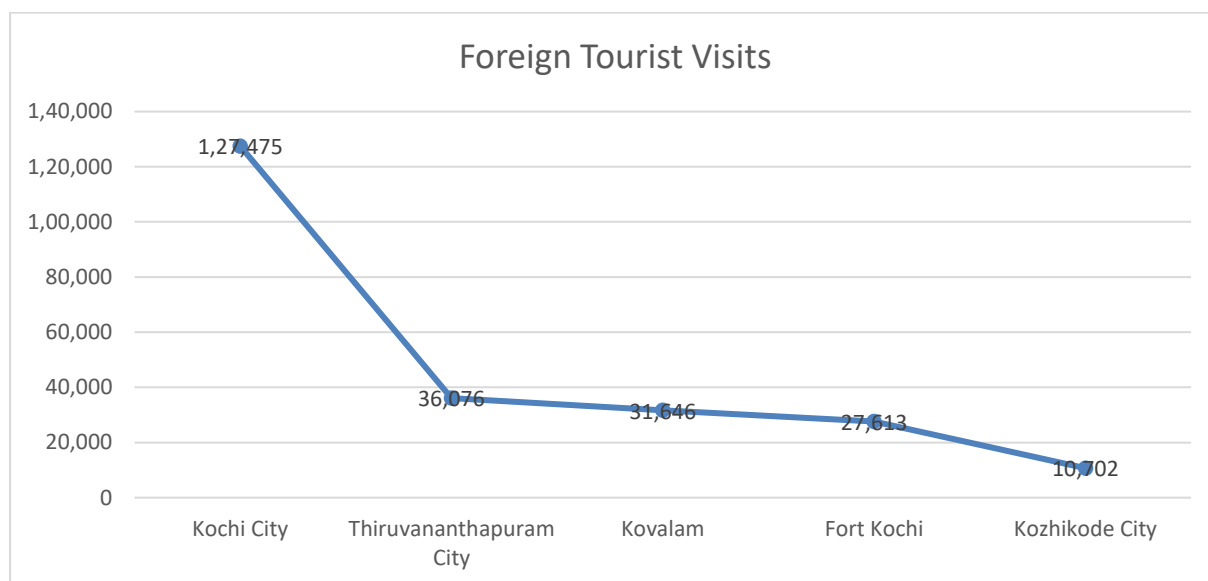


Fig 3: Destination-wise Foreign Tourist Visits (Source: <https://www.keralatourism.org>)

The Kerala Tourism Promotion Council (KTPC) has effectively positioned Kerala as a leading tourism destination by focusing on strategic marketing campaigns, including the well-known "God's Own Country" initiative. By targeting international markets and collaborating with various stakeholders, KTPC has helped Kerala maintain steady growth in foreign tourist arrivals, contributing to the state's economy through job creation and infrastructure development. This targeted promotion has enabled Kerala to emerge as a unique and attractive destination for global travellers. Key tourist destinations in Kerala, such as Kochi, Thiruvananthapuram, and Kovalam, have received a significant share of foreign tourist visits, reflecting the effectiveness of KTPC's promotional efforts. Kochi, in particular, leads with a 36.89% share of the total foreign tourist visits, followed by Thiruvananthapuram and Kovalam, which account for 10.44% and 9.16%, respectively. These destinations offer a combination of cultural heritage, natural beauty, and modern infrastructure, making them popular among international travelers. The table below provides an overview of the foreign tourist visits to key destinations in Kerala, illustrating the distribution of tourists across various cities and regions.

Impact of Tourism Promotion on Kerala's Economy

Tourism has been a significant contributor to Kerala's economy, providing employment to thousands and generating foreign exchange earnings.

Table 2: Foreign Exchange Earnings in Kerala

Year	Foreign Exchange Earnings (Crores)	% Variation
2019	10,271.06	17.19%
2020	2,799.85	-72.74%
2021	461.5	-83.52%
2022	2,792.42	505.07%

Source: www.keralatourism.org

The revenue from tourism in 2022 increased significantly compared to 2021 but had not yet reached pre-pandemic levels. Kerala's tourism industry is a considerable contributor to

the state's economy, particularly in terms of foreign exchange earnings. In 2019, Kerala's foreign exchange earnings were at their peak, amounting to ₹10,271.06 crores, reflecting a growth rate of 17.19%. However, the pandemic severely impacted tourism, leading to a drastic drop in earnings in 2020 and 2021. Foreign exchange earnings in 2020 fell to ₹2,799.85 crores, representing a decline of 72.74%, while 2021 saw an even sharper decline of 83.52%, with earnings dropping to ₹461.5 crores. The tourism sector began to recover in 2022, as evidenced by a remarkable 505.07% increase in foreign exchange earnings, reaching ₹2,792.42 crores. This resurgence can be attributed to the gradual easing of travel restrictions, the implementation of tourism recovery strategies by the Kerala Tourism Promotion Council (KTPC), and the resumption of global travel. Despite the challenges posed by the pandemic, Kerala's tourism sector has demonstrated resilience, with its foreign exchange earnings showing a significant recovery in 2022. The recovery trajectory also highlights the importance of sustainable and diversified tourism offerings, as well as effective promotional campaigns, in bringing back international tourists and boosting Kerala's economic resilience.

CONCLUSION

Kerala's tourism sector has witnessed significant growth despite setbacks from the pandemic. The role of the Kerala Tourism Promotion Council has been instrumental in driving foreign tourist arrivals, improving infrastructure, and contributing to the state's economy. However, future growth will depend on sustainable tourism practices, strategic marketing, and innovative policies to position Kerala as a top global tourist destination. By implementing modern marketing strategies and enhancing infrastructure, Kerala can continue to attract international travellers and maintain its position as one of India's most sought-after tourist destinations. In conclusion, Kerala's tourism industry has been a significant contributor to the state's economy, bolstered by the efforts of the Kerala Tourism Promotion Council (KTPC). Through targeted marketing strategies like the "God's Own Country" campaign and a focus on sustainable tourism, KTPC has effectively promoted Kerala as a premier destination for foreign tourists. However, the industry faces challenges such as seasonal fluctuations, environmental concerns, and increasing competition from other destinations. These challenges require immediate attention and strategic responses to ensure the long-term sustainability of the tourism sector. To address these issues, KTPC must embrace modern strategies such as digital marketing, eco-tourism initiatives, and a stronger focus on Kerala's health and wellness tourism offerings. By diversifying its tourism products and enhancing its online presence, Kerala can maintain its competitive edge and attract a broader, more sustainable influx of international tourists. With continued innovation and collaboration, Kerala's tourism industry has the potential to recover fully and thrive in the years to come, while preserving its unique cultural and environmental heritage.

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RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

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A STUDY ON FINTECH REVOLUTION AND ITS IMPACT ON FINANCIAL INCLUSION IN RURAL AREAS OF PUDUKKOTTAI DISTRICT

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ABSTRACT

Fintech is a combination of Finance and Technology. When we use Smartphones and devices such as Laptops, Computers etc. along with Internet and latest/current/new technologies to carry out monetary operations, then that is known as Fintech. Many studies emphasize the significant impact of fintech in accelerating financial inclusion. Most of the respondents can now have access to various types of financial services such as banking, investing, lending, borrowing and insurance, etc... There has been a rise in the usage of fintech, especially after the spread of covid-19 pandemic. In this descriptive study, the data were obtained from 50 respondents from Pudukkottai Rural and Urban areas using a random sampling method. The findings of the study include the majority of the fintech customers are satisfied with the services as they can transact with simple and fast.

KEYWORDS: Fin Tech, Financial Inclusion, Financial Services, Banking.

INTRODUCTION

FinTech has been a game-changer in the banking industry. Banks are now able to offer banking services to a global reach of customers thanks to fintech, including those who were formally available in rural areas. The delivery of banking services has been critically influenced by fintech, which has increased accessibility, cost-effectiveness, and efficiency. Financial inclusion is increasingly being recognized as a key driver of economic growth and poverty alleviation the world over. Access to formal finance can boost job creation, reduce vulnerability to economic shocks and increase investments in human capital. Without adequate access to formal financial services, individuals and firms need to rely on their own limited resources or rely on costly informal sources of finance to meet their financial needs and pursue growth opportunities. At a macro level, greater financial inclusion can support sustainable and inclusive socio-economic growth for all.

The term "FinTech" in its expanded form refers to Financial Technology. This term was first coined in the year 1972 by a New York banker and has become a buzz word in the 21st century. As per Financial Stability Board, FinTech can be defined as technology enabled financial innovations that could result in new business models, applications, processes or products with an associated

material effect on financial markets and institutions and the provision of financial services. In fact, FinTech's are the startup companies created to disrupt a well-established financial system and the organizations which are not technology savvy. FinTech firms focus on providing innovative products and services to create more value to end users. This is done via partnership of startups focused on technology and startups meant for providing specialized financial services. Beginning with a niche area of business, then creating satisfaction to end users, these FinTech's gradually expand their coverage and market share.

FINTECH IN INDIA

The Indian government began liberalizing its banking sector post before-1990 with the introduction of technology-savvy banks. The government also took legislative action to boost the banking system and pushed new technology such as MICR, Electronic Fund Transfer (EFT) and other electronic payments that revolutionized the banking system and in turn boosted the Indian economy. However, for two decades from 1991, the technological innovation in financial services and banking were government-driven and witnessed slow growth.

According to a report by Ernst & Young (EY), India is one of the largest and fastest-growing FinTech ecosystems in the world. It stands second after China in terms of the FinTech adoption index with an adoption rate of 87%. The overall estimation of the FinTech market in 2021 for India has come out to be \$50 billion as mentioned in a report by FIA Global.

India is amongst the fastest growing FinTech Markets in the world. As of 2024, it is estimated to be around USD 110 billion, and by 2029, it is projected to reach an impressive around USD 420 billion at a CAGR of 31 percent. Boasting over 9000 fintech entities, India ranks third globally in terms of the highest number of Fintech entities and commands 14 percent of startup funding in the country. The adoption rate of Fintech in India is 87 percent, which is well above the global average of 67 percent.

Chart No – 1
Fintech companies in India



Source: Biznext is a state-of-the-art B2B2C Digital Platform

OBJECTIVES:

To know the progress of FinTech and its effects on the global and Indian financial sectors.

To assess the degree of FinTech adoption, including their use of digital wallets, online lending platforms, and mobile banking in rural areas of Pudukkottai District.

To determine the main obstacles and hurdles, including cultural opposition, internet connectivity, and digital literacy in rural areas of Pudukkottai District.

To examine the financial effects of FinTech on financial inclusion by evaluating the ways in which income, savings, and general financial well-being are impacted by access to digital financial services.

RESEARCH METHODOLOGY:

Research methodology refers to the systematic approach and process used to manage research, including the design, collection, analysis, and interpretation of data. It comprises determining research problems, developing research questions, choosing suitable techniques, gathering and evaluating data, and reporting conclusions.

Data Sources

Primary Data is being collected through formal Google form of the respondents.

Collection of Data

Structured Google Forms are conducted for the purpose of data collection from the respondents. The sampling technique used is Random Sampling.

Area of Study

The place where this study focuses is Kulathur Taluk Pudukkottai District Tamil Nadu. The place is semi-rural which constitutes a wide variety of people, from College Students, Employees, those who work in small-scale industries.

LIMITATION OF THE STUDY

- The study is limited to Pudukkottai District.
- The study is limited to its Sample Size
- The data collected is through Google form

REVIEW OF LITERATURE:

Dhananjai E Rao., & et al.. (2024). FinTech has become a disruptive force in the financial sector as a consequence of the quick expansion of technology. This study examines how the use of FinTech solutions has resulted in financial inclusion and banking services in rural areas. The study examines the advantages and difficulties of applying FinTech to rural banking, including better access to financial services, higher effectiveness, and lower costs.

Jayalakshamma. K (2022). Financial inclusion, which aims to provide access to affordable and reliable financial services to underserved populations, is crucial for promoting economic growth and reducing poverty. In recent years, the emergence of financial technology (Fintech) has shown great potential in advancing financial inclusion by offering innovative solutions and leveraging technology to overcome traditional barriers.

Debashree Souvik Jana. (2024). How FinTech has changed financial inclusion in India, focusing on how it has improved access to loans, insurance, savings, and sending money back to family and friends abroad. Even though there have been big steps forward, problems like limited internet access, digital literacy, regulatory hurdles, and a lack of funds are slowing its growth

Paramasivan. C, & Arunkumar. G. (2018). Financial Inclusion is one of the effective and innovative approaches which helps to reach the financial services, assistance and subsidies to the real beneficiaries. Government of India introduced the Scheme on financial inclusion to provide financial services to the unreached people at an affordable or free of cost. RBI instructed all the commercial banks to open No frills accounts to all the people who don't have bank accounts.

Saugat Nayak. (2025). The Fintech subspace is undergoing swift changes now with the aspect of CX that has emerged as a critical way to outcompete others. With customers demanding timely and tailor-made interactions with digital solutions, the management of products in fintech companies has to embrace data.

Ramya V., & et al. (2025). The application of blockchain technology in the field of accounting is essential as it guarantees increased transparency, security and reliability as well as shredding time and expenses of financial reporting. In this paper, the challenges have been discussed concerning the use of blockchain in Thailand's accounting industry, its benefits, and possibilities in the future.

Prafulla Kumar Dwibedi., & et al. (2023). It is the innovative use of technology, digital platforms, and data analytics to provide financial products and services to the unserved and unbanked populations. It also includes a wide range of technologies and applications used in

providing banking and financial services such as mobile banking, digital payments, Unified Payments Interface (UPI), Immediate Payment Service (IMPS), mobile wallets, Prepaid Payment Instruments, Quick Response (QR) codes, crowd funding, peer-to-peer lending, robo-advisory services, block chain, and artificial intelligence.

Bhaskar Mishra., Aadarsh Jain., & Satyajitsinh Gohil (2023). This research paper examines the evolution of fintech companies in rural India and their performance over time. Through an analysis of factors contributing to the success of fintech companies in rural India, such as government support, availability of digital financial services, and access to affordable internet connectivity, this paper provides a comprehensive assessment of the state of fintech in rural India.

Anupam Mehrotra., (2019) Financial Inclusion and inclusive growth is the clarion call given by nations all across the globe as they become increasingly aware that growth is more sustainable when it is inclusive. While the regulated traditional banking channel has been engaged in meeting the challenges of inclusive growth, the emergence of technology is sweeping across the sub-continent marked by stupendous growth in the electronic market, smartphone penetration, cloud based solutions and the emergence of financial technology companies providing services and products similar and parallel to banking.

Thomas Philippon., (2019) The cost of financial intermediation has declined in recent years thanks to technology and increased competition in some parts of the finance industry. I document this fact and I analyze two features of new financial technologies that have stirred controversy: returns to scale and the use of big data and machine learning

Shubham Goswami., Raj Bahadur Sharma., & Vineet Chouhan (2022). Transformation towards Financial technology makes possibilities throughout all areas of the economy for growth. Emerging developing economies have seen a fast expansion of financial technology and mobile money services. FinTech projects, which are regarded as some of the most significant advances in the financial sector, have also obviously been driven by the growth of digital transformation, as FinTech Mobile money and digital wallets address the economic infrastructure vacuum with an innovative technology solution and enable customers to conduct financial transactions affordably and dependably by eliminating spatial barriers, and can be used to bridge the gap of banked and unbanked.

Analysis & Interpretation:

How would you rate the overall financial performance of the fintech company in rural areas of Pudukkottai over the past Five years?

Table No – 1
Overall Financial Performance of the Fintech Company – 2019 - 2024

S. No.	Particulars	No. of respondents	% of Respondents
1	Good	24	48%
2	Excellent	13	26%
3	Average	10	20%
4	Poor	3	6%

Source: Primary Data

Table No – 1 Shows that, Overall Financial Performance of the Fintech Company 2019 – 2024, Most of respondents (48%) rated the three-year financial performance of fintech businesses operating in rural Areas as "Excellent. "An additional 26% of respondents gave it a "Good" rating only 20% of the respondents gave it an "Average" rating, while only 6% gave it a "Bad" rating.

Chart No – 2
Overall Financial Performance of the Fintech Company – 2019 - 2024

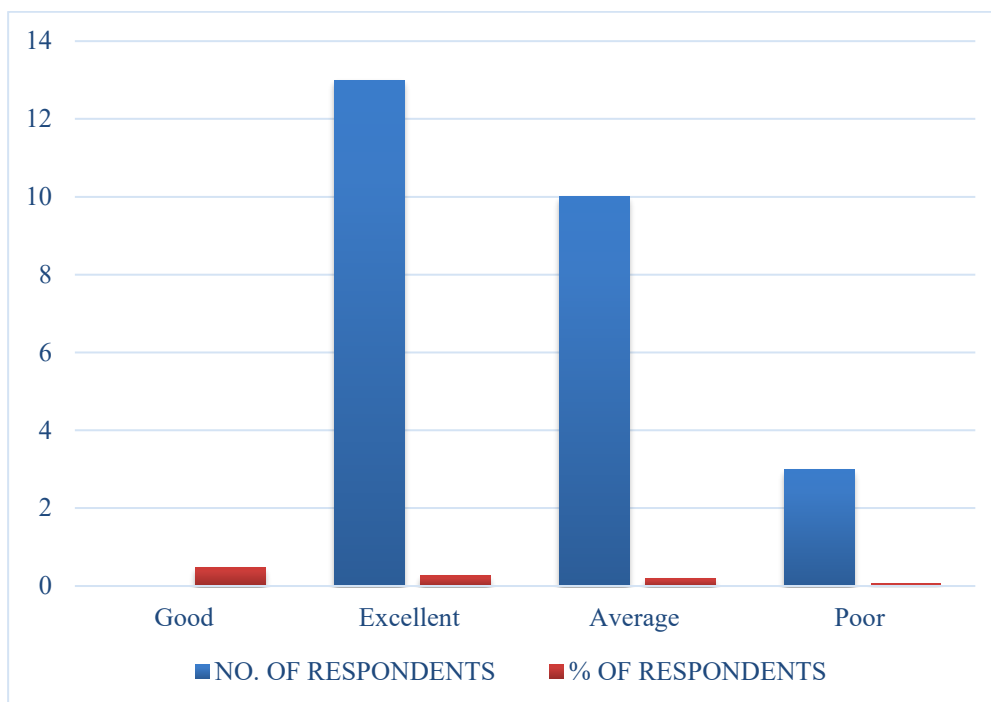


Table No – 2
The Fintech Company's Product Offering in Rural Areas

S. No.	Particulars	No. of Respondents	% of Respondents
1	No	5	10%
2	Minor	10	20%
3	Moderate	20	40%
4	Major	15	30%

Source: Primary Data

Table No – 2 shows that, the fintech company's product offering in rural Areas, 10% of the overall respondents claimed that the fintech company's product line in rural India had not changed over time. In comparison, 40% of respondents indicated moderate changes, while 20% reported only slight ones. The remaining 30% claimed that the product line-up has seen significant alterations.

Chart No – 3
The Fintech Company's Product Offering in Rural Areas

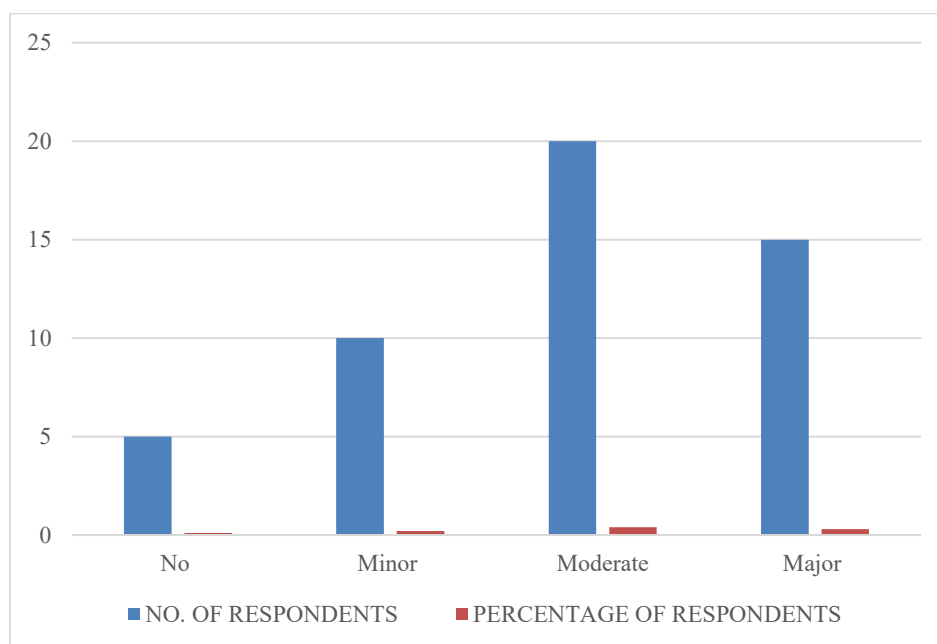


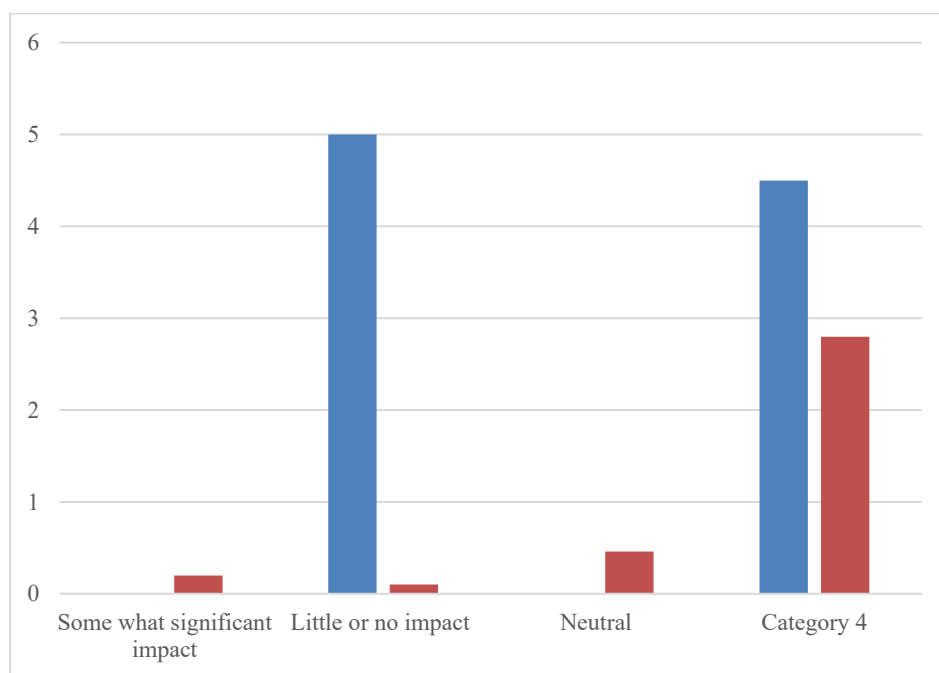
Table No – 3
The Fintech Company Has Had an Impact on Financial Inclusion and Access to Financial Services in Rural Areas of Pudukkottai

S. No.	Particulars	No. of Respondents	Percentage of Respondents
1	Very significant impact	12	24%
2	Somewhat significant impact	10	20%
3	Little or no impact	5	10%
4	Neutral	23	46%

Source: Primary Data

Table No – 3 Shows that, according to the survey respondents, the fintech company has had a significant impact on financial inclusion and access to financial services in rural Pudukkottai. 24% of respondents believe that the impact has been somewhat significant, while 24% believe it has been very significant. Only 10% of respondents reported little or no impact, and 46% expressed neutrality.

Chart No – 4
The Fintech Company Has Had an Impact on Financial Inclusion and Access to Financial Services in Rural Areas of Pudukkottai



MAJOR FINDINGS

- Fintech companies must address the challenges of serving rural customers and effectively utilizing technology in order to improve their performance in rural India.
- The fintech industry in rural India has experienced significant changes and evolution in its product offerings over time.
- Although the target clientele of fintech businesses in rural India has changed somewhat, most of these shifts have been mild.
- People in rural India need to be made more aware of the advantages of fintech solutions, and these solutions need to be improved further to better serve the demands of the populace.
- Fintech businesses in rural India have had success establishing favourable connections with regional financial institutions and banks. This is a good development since these connections might assist fintech businesses in reaching a wider audience and offering rural clients better services.

CONCLUSION / SUGGESSTION

Over the past few years, there has been a major upheaval in the Indian financial services industry. Big banks and other significant financial services companies have controlled the industry for decades, but Fintech companies are becoming more and more well-liked. Fintech companies are not the only ones driving innovation. However, a lot of banks and other financial organizations are also eager to investigate new technologies and are making significant investments in digital channels for service delivery. According to the study, fintech has the ability to revolutionize the under banked population in India by fostering financial inclusion. Advances in financial technology have demonstrated their ability to increase affordability, bridge accessibility barriers, and empower marginalized individuals.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

A STUDY ON FACTORS INFLUENCING CONSUMER SATISFACTION TOWARDS INSTANT FOOD PRODUCTS

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ABSTRACT

With an emphasis on demographics, product preferences, and psychological issues, this study investigates the variables affecting consumer satisfaction with instant food products. The results show that women and people between the ages of 31 and 40 make up the preponderance of the consumer base, and they have strong preferences for brands like Tata Q and items like instant tea. Product quality, packaging, trust, and emotional attachment are important elements that impact customer happiness; these characteristics fluctuate significantly depending on a person's gender, marriage status, and family type. Targeted advertising, better packaging, a wider range of products, more robust digital platforms, and trust-building programs are all suggested by the study. These observations are meant to help companies improve customer retention and happiness in the market for Instant foods.

INTRODUCTION

In the fast-paced world of convenience foods, customer retention stands as a crucial determinant of success. At the heart of this relationship lies consumer satisfaction—a complex interplay where satisfaction drives retention, while a loyal customer base encourages continuous improvement. Instant food products fulfil a specific need for quick and convenient meals, and consumers have certain expectations regarding flavour, convenience, and value. When brands consistently meet or exceed these expectations, customer satisfaction increases. For instance, a well-crafted instant noodle may not be a culinary masterpiece, but if it delivers a satisfying meal in just minutes, customers are likely to feel pleased. This positive experience fosters repeat purchases, as satisfied customers become familiar with the brand, trust its quality, and are more inclined to choose it again. Additionally, a devoted customer base offers businesses the opportunity to innovate and enhance their offerings by gaining insights into customer preferences through surveys, focus groups, and social media engagement. This can lead to new flavours, healthier options, or improved packaging, ultimately delighting customers

and encouraging positive word-of-mouth—further expanding the brand’s reach and attracting new consumers. This chapter explores customer perception and satisfaction with instant food products through various statistical analyses.

STATEMENT OF THE PROBLEM

The demand for instant food products is rising due to busy lifestyles and urbanization, as consumers seek convenience, affordability, and quality. Various factors, including flavour, nutritional content, cost, packaging, brand reputation, and health concerns, influence customer satisfaction with these products. To meet health and quality expectations and address a more discerning consumer base, producers must understand these factors. This study aims to identify key determinants of consumer satisfaction, explore the challenges faced, and offer recommendations for improvement, ultimately bridging the gap between market offerings and consumer needs to enhance satisfaction and support sustainable market growth.

REVIEW OF LITERATURE

The following review of the literature to understand the conceptual background of the study, research was undertaken with results found, and identifies the research gap.

Sharma & Singh. (2022). emphasized the role of convenience as a primary driver of consumer preference for instant food products. Their study highlighted the time-saving aspect and ease of preparation as critical factors, particularly among working professionals and students. These features significantly enhance consumer satisfaction.

Sharma & Singh (2022) emphasized that convenience drives consumer preference for instant food, particularly benefiting working professionals and students due to time-saving and ease of preparation.

Kim et al. (2021) found that brand trust significantly influences consumer satisfaction, with reliable brands earning higher preference.

Gupta (2020) reported that health concerns lead consumers to prioritize low-calorie, nutritious instant food options, impacting their satisfaction.

Chatterjee & Roy (2019) concluded that appealing, eco-friendly packaging helps enhance consumer satisfaction and purchase decisions in instant food.

Bansal & Kaur (2022) identified affordability as a crucial factor for consumer satisfaction, especially in developing economies where price sensitivity is high.

Singh et al. (2021) highlighted that taste and diverse flavor options are essential for enhancing consumer satisfaction in the instant food segment.

Das (2020) showed that clear nutritional labeling boosts trust and satisfaction, particularly among health-conscious consumers.

Reddy & Thomas (2019) indicated that engaging advertisements showcasing benefits positively influence consumer satisfaction.

Pandey (2021) found that culturally relevant flavors and marketing strategies significantly enhance satisfaction with instant food products.

Mehta & Jain (2020) noted that accessibility through retail and online channels is a key factor affecting consumer satisfaction with instant food.

Chopra et al. (2021) revealed that positive social media reviews enhance trust and satisfaction, leading to increased product trials.

Rao & Pillai (2022) established that perceived product quality is closely linked to consumer satisfaction and brand loyalty in instant food.

Banerjee (2019) demonstrated that sustainable practices in the instant food sector significantly influence satisfaction among environmentally conscious buyers.

Thomas & George (2021) emphasized that adherence to food safety standards fosters consumer trust and satisfaction.

Kumar (2020) examined demographic factors, finding that younger, urban consumers prioritize convenience over traditional cooking in their instant food choices.

Bhatia & Sharma (2022) highlighted that in-store experiences, including displays and promotions, enhance satisfaction with instant food products.

Sinha (2021) found that technological innovations, like ready-to-cook products, lead to increased satisfaction due to improved taste and quality.

venkatesh & Rao (2020) stressed that brand loyalty significantly influences satisfaction, with loyal consumers perceiving higher reliability and quality.

Jain & Desai (2022) discovered that introducing innovative regional and exotic flavors attracts consumers and boosts their satisfaction.

Nair (2019) showed that peer recommendations are a significant factor influencing satisfaction in the instant food category.

RESEARCH GAP

Current literature identifies factors affecting consumer satisfaction with quick food products, including taste, price, convenience, packaging, brand trust, and health concerns. However, research often overlooks how these elements interact and the impact of trends like sustainability, technology, and social media on consumer choices and behaviors. Our study aims to address these gaps.

RESEARCH METHODOLOGY

1. Study Purpose: Examine factors influencing consumer satisfaction with instant food products.
2. Research Design: Descriptive research.
3. Data Collection- Primary Data: Structured questionnaire targeting 420 respondents through convenience sampling.
4. Variables Measured: Taste, price, convenience, health concerns, packaging, and brand trust (5-point Likert scale).
5. Secondary Data: Sourced from journals, reports, and online databases.
6. Analysis: Utilization of descriptive statistics, correlation analysis, and regression analysis to identify key satisfaction determinants.
7. Goal: Provide actionable insights for industry stakeholders.

OBJECTIVE OF THE STUDY

To identify and analyze the key factors such as taste, price, convenience, packaging, health concerns, and brand trust that influence consumer satisfaction towards instant food products.

Table 1
Distribution of demographic characteristics of the consumers

Demographic characteristics	Category	Frequency	Percentage
Gender	Male	141	33.6
	Female	279	66.4
	Total	420	100.0
Age group (in years)	Less than 30 years	119	28.3
	31 to 40 years	221	52.6
	41 to 50 years	44	10.5
	Above 51 years	36	8.6

	Total	420	100.0
Marital Status	Married	314	74.8
	Unmarried	106	25.2
	Total	420	100.0
Type of family	Nuclear	257	61.2
	Joint	163	38.8
	Total	420	100.0
Number of family members	Two members	223	53.1
	Three members	149	35.5
	Four members and above	48	11.4
	Total	420	100.0

Source: Survey data

Table 1 summarizes the demographic characteristics of consumers, including gender, age, marital status, family type, and number of family members. Of the respondents, 33.6% were male and 66.4% female. In terms of age, 28.3% were under 30, 52.6% were 31 to 40, 10.5% were 41 to 50, and 8.6% were over 51. Regarding marital status, 74.8% were married and 25.2% unmarried. Family type showed that 61.2% were in nuclear families and 38.8% in joint families. For family size, 53.1% had two members, 35.5% had three, and 11.4% had five or more.

Table 2
Distribution of demographic characteristics of the consumers

Demographic characteristics	Category	Frequency	Percentage
Educational status	Below SSLC	66	15.7
	HSC	74	17.6
	Undergraduate	119	28.3
	Postgraduate	81	19.3
	Professionals	80	19.0
	Total	420	100.0
Annual income	Less than 5 lakhs	187	44.5
	5 to 10 lakhs	159	37.9
	10 to 15 lakhs	34	8.1

	Above 15 lakhs	40	9.5
	Total	420	100.0
Type of Residence	Own House	269	64.0
	Rental House	151	36.0
	Total	420	100.0
Area of residence	Urban	280	66.7
	Semi urban	140	33.3
	Total	420	100.0
Type of employment	Government Service	97	23.1
	Private Service	104	24.8
	Professional	103	24.5
	Business	59	14.0
	Any other	57	13.6
	Total	420	100.0

Source: Survey data

Table 2 summarizes the demographics of consumers of instant food products, focusing on education, income, residence, area, and employment. In education, 15.7% had below secondary education, 17.6% completed higher secondary, 28.3% were undergraduates, 19.3% were postgraduates, and 19.0% held professional qualifications. For annual income, 44.5% earned less than five lakhs, 37.9% earned between five and ten lakhs, 8.1% earned between ten and fifteen lakhs, and 9.5% earned over fifteen lakhs. Regarding residence, 64.0% lived in their own homes while 36.0% rented. In terms of location, 66.7% were from urban areas, and 33.3% were from semi-urban areas. In employment, 23.2% worked in government, 24.8% in private sector, 24.5% in professional roles, 14.0% in business, and 13.6% in other fields.

Table 3
Distribution of product characteristics of the consumers

Product characteristics	Category	Frequency	Percentage
Nature of the product	Individual Meal Pack	72	17.1
	Instant mashed potatoes	65	15.5
	Instant noodles	23	5.5
	Instant pudding	43	10.2
	Instant rice	46	11.0

	Instant sauce	24	5.7
	Instant soup	67	16.0
	Instant tea	80	19.0
	Total	420	100.0
Name of the brand	Haldiram's	60	14.3
	Maggi	84	20.0
	Tata Q	120	28.6
	Aashirvaad	67	16.0
	MTR	24	5.7
	Kitchens of India	65	15.5
	Total	420	100.0
Mode of placing order	Food delivery Apps	188	44.8
	Direct order	199	47.4
	Mall Shopping	33	7.9
	Total	420	100.0
Purpose of usage	Festival	125	29.8
	Get together	225	53.6
	Others	70	16.7
	Total	420	100.0
Frequency of usage	Weekly	71	16.9
	Fortnightly	188	44.8
	Monthly	76	18.1
	Occasionally	85	20.2
	Total	420	100.0

Source: Survey data

Table 3 highlights characteristics of instant food consumers, including product type, brand preference, ordering method, usage purpose, and frequency. Product types preferred included 19% instant tea, 17.1% meal packs, and 16% instant soup. For brands, 28.6% favored Tata Q, 20% Maggi, and 14.3% Haldiram's. Ordering methods showed 44.8% used food delivery apps, 47.4% ordered directly, and 7.9% shopped at malls. In usage, 53.6% consumed

instant foods during gatherings, while 29.8% used them for festivals. Regarding frequency, 44.8% consumed them fortnightly, 20.2% occasionally, and 16.9% weekly.

Null Hypothesis: There is no significant mean difference towards the key factors of consumer satisfaction in instant food products across gender of the consumers

Alternative Hypothesis: There is a significant mean difference towards the key factors of consumer satisfaction in instant food products across gender of the consumers

Table 4
Independent samples test on the key factors of consumer satisfaction of instant food products across gender of the consumers

Key factors of consumer satisfaction	Gender				t-value	p-value
	Male (n= 141)		Female (n= 279)			
	Mean	S.D	Mean	S.D		
Product quality	2.23	0.73	1.99	0.75	2.073	0.044*
Promotion	2.13	0.76	2.00	0.80	2.257	0.036*
Perception	2.22	0.76	1.91	0.76	3.612	0.020*
Packaging	2.12	0.81	1.97	0.78	2.189	0.040*
Service quality	2.19	0.79	2.03	0.81	2.174	0.041*

(* $p < 0.05$ significant at 5 percent level)

Table 4 shows the independent samples t-test for testing the significant mean difference on the key factors of consumer satisfaction of instant food products across two groups of gender viz., male and female. The table also reveals that, there exists a significant mean difference towards product quality ($t=2.073$, $p<0.05$), promotion ($t=2.257$, $p<0.05$), perception ($t=3.612$, $p<0.05$), packaging ($t=2.189$, $p<0.05$) and service quality ($t=2.174$, $p<0.05$) across the gender of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards consumer satisfaction and retention behavior of instant food products across gender of the consumers

Alternative Hypothesis: There is a significant mean difference towards consumer satisfaction and retention behavior of instant food products across genders of the consumers

Table 5
Independent samples test on consumer satisfaction and retention behavior of instant food products across gender of the consumers

Factors	Gender				t-value	p-value
	Male (n= 141)		Female (n= 279)			
	Mean	S.D	Mean	S.D		
Consumer satisfaction	2.07	0.80	2.15	0.82	2.071	0.041 [*]

Retention behavior	2.07	0.79	2.10	0.83	1.975	0.048*
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(* $p < 0.05$ significant at 5 percent level)

Table 5 shows the independent samples t-test for testing the significant mean difference on the consumer satisfaction and consumer retention behaviour of instant food products across two groups of gender viz., male and female. The table also reveals that, there exists a significant mean difference towards consumer satisfaction ($t=2.071$, $p < 0.05$) and retention behavior ($t=1.975$, $p < 0.05$) across the gender of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards mediating factors of consumer satisfaction and retention behavior of instant food products across gender of the consumers

Alternative Hypothesis: There is a significant mean difference towards mediating factors of consumer satisfaction and retention behavior of instant food products across gender of the consumers

Table 6

Independent samples test on mediating factors of consumer satisfaction and retention behavior in instant food products industry across gender of the consumers

Mediating factors of consumer satisfaction and retention	Gender				t-value	p-value
	Male (n= 141)		Female (n= 279)			
	Mean	S.D	Mean	S.D		
Perceived value	2.19	0.81	2.11	0.81	2.142	0.039*
Trust	2.06	0.85	1.99	0.77	4.787	0.008*
Emotional attachment	2.25	0.80	2.12	0.78	2.570	0.034*

(* $p < 0.05$ significant at 5 percent level)

Table 6 shows the independent samples t-test for testing the significant mean difference on mediating factors of consumer satisfaction and consumer retention behaviour of instant food products across two groups of gender viz., male and female. The table also reveals that, there exists a significant mean difference towards perceived value ($t=2.142$, $p < 0.05$), trust ($t=4.787$, $p < 0.05$) and emotional attachment ($t=2.570$, $p < 0.05$) across the gender of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards the key factors of consumer satisfaction of instant food products across marital status of the consumers

Alternative Hypothesis: There is a significant mean difference towards the key factors of consumer satisfaction of instant food products across marital status of the consumers

Table 7

Independent samples test on the key factors of consumer satisfaction of instant food products across marital status of the consumers

	Marital status	t-value	p-value
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Key factors of consumer satisfaction	Married (n= 314)		Unmarried (n= 106)			
	Mean	S.D	Mean	S.D		
Product quality	2.05	0.75	2.13	0.77	2.369	0.039*
Promotion	2.02	0.80	2.12	0.75	2.643	0.036*
Perception	2.00	0.78	2.07	0.76	2.010	0.042*
Packaging	1.97	0.79	2.19	0.79	1.985	0.046*
Service quality	2.02	0.81	2.29	0.78	2.373	0.038*

(* $p < 0.05$ significant at 5 percent level)

Table 7 shows the independent samples t-test for testing the significant mean difference on the key factors of consumer satisfaction of instant food products across two groups of marital status viz., married and unmarried. The table also reveals that, there exists a significant mean difference towards product quality ($t=2.369$, $p < 0.05$), promotion ($t = 2.643$, $p < 0.05$), perception ($t = 2.010$, $p < 0.05$), packaging ($t=1.985$, $p < 0.05$) and service quality ($t = 2.373$, $p < 0.05$) across the two groups of marital status of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards consumer satisfaction and retention behaviour of instant food products across marital status of the consumers

Alternative Hypothesis: There is a significant mean difference towards consumer satisfaction and retention behaviour of instant food products across marital status of the consumers

Table 8
Independent samples test on consumer satisfaction and retention behaviour of instant food products across marital status of the consumers

Factors	Marital status				t-value	p-value
	Married (n= 314)		Unmarried (n= 106)			
	Mean	S.D	Mean	S.D		
Consumer satisfaction	2.16	0.82	2.00	0.80	3.267	0.021*
Retention behavior	2.04	0.81	2.20	0.80	2.498	0.035*

(* $p < 0.05$ significant at 5 percent level)

Table 8 shows the independent samples t-test for testing the significant mean difference on consumer satisfaction and retention behavior of instant food products across two groups of marital status viz., married and unmarried. The table also reveals that, there exists a significant mean difference towards consumer satisfaction ($t=2.326$, $p < 0.05$) and retention behavior ($t = 2.498$, $p < 0.05$) across the two groups of marital status of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards the mediating factors of consumer satisfaction and retention behavior of instant food products across marital status of the consumers

Alternative Hypothesis: There is a significant mean difference towards the mediating factors of consumer satisfaction and retention behavior of instant food products across marital status of the consumers

Table 9

Independent samples test on the mediating factors of consumer satisfaction and retention behavior of instant food products across marital status of the consumers

Mediating mechanisms between consumer satisfaction and retention	Marital status				t-value	p-value
	Married (n= 314)		Unmarried (n= 106)			
	Mean	S.D	Mean	S.D		
Perceived value	2.12	0.81	2.20	0.80	2.004	0.041*
Trust	1.98	0.79	2.11	0.81	3.118	0.022*
Emotional attachment	2.14	0.77	2.23	0.82	2.971	0.028*

(* $p < 0.05$ significant at 5 percent level)

Table 9 shows the independent samples t-test for testing the significant mean difference on the mediating factors of consumer satisfaction and retention behavior of instant food products across two groups of marital status viz., married and unmarried. there exists a significant mean difference towards perceived value ($t=2.004$, $p < 0.05$), trust ($t=3.118$, $p < 0.05$) and emotional attachment ($t = 2.971$, $p < 0.05$) across the two groups of marital status of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards the key factors of consumer satisfaction of instant food products across type of family of the consumers

Alternative Hypothesis: There is a significant mean difference towards the key factors of consumer satisfaction of instant food products across type of family of the consumers

Table 11

Independent samples test on the key factors of consumer satisfaction of instant food products across type of family of the consumers

Key factors of consumer satisfaction	Type of family				t-value	p-value
	Nuclear family (n= 257)		Joint family (n= 163)			
	Mean	S.D	Mean	S.D		
Product quality	2.09	0.75	2.05	0.74	2.673	0.034*
Promotion	2.08	0.79	1.99	0.79	1.975	0.046*

Perception	2.06	0.78	1.95	0.75	3.617	0.022*
Packaging	2.08	0.80	1.92	0.78	2.795	0.032*
Service quality	2.12	0.82	2.04	0.80	2.633	0.035*

(* $p < 0.05$ significant at 5 percent level)

Table 11 shows the independent samples t-test for testing the significant mean difference on the key factors of consumer satisfaction of instant food products across two groups of family type viz., nuclear family and joint family. The table also reveals that, there exists a significant mean difference towards product quality ($t=2.673$, $p < 0.05$), promotion ($t=1.975$, $p < 0.05$), perception ($t=3.617$, $p < 0.05$), packaging ($t=2.795$, $p < 0.05$) and service quality ($t=2.633$, $p < 0.05$) across the two groups of type of family of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards consumer satisfaction and retention of instant food products across type of family of the consumers

Alternative Hypothesis: There is a significant mean difference towards consumer satisfaction and retention of instant food products across type of family of the consumers

Table 12
Independent samples test on consumer satisfaction and retention of instant food products across type of family of the consumers

Factors	Type of family				t-value	p-value
	Nuclear family (n= 257)		Joint family (n= 163)			
	Mean	S.D	Mean	S.D		
Consumer satisfaction	2.11	0.79	2.14	0.86	5.591	0.007*
Retention behavior	2.15	0.82	2.00	0.80	3.564	0.019*

(* $p < 0.05$ significant at 5 percent level)

Table 12 shows the independent samples t-test for testing the significant mean difference on consumer satisfaction and consumer retention behavior of instant food products across two groups of family type viz., nuclear family and joint family. The table also reveals that, there exists a significant mean difference towards consumer satisfaction ($t=5.591$, $p < 0.05$) and retention behavior ($t=3.564$, $p < 0.05$) across the two groups of type of family of consumers of instant food products.

Null Hypothesis: There is no significant mean difference towards mediating factors of consumer satisfaction and retention behavior of instant food products across type of family of the consumers

Alternative Hypothesis: There is a significant mean difference mediating factors of consumer satisfaction and retention behavior of instant food products across type of family of the consumers

Table 13

Independent samples test on mediating factors of consumer satisfaction and retention behavior of instant food products across type of family of the consumers

Mediating factors of consumer satisfaction and retention	Type of family				t-value	p-value
	Nuclear family (n= 257)		Joint family (n= 163)			
	Mean	S.D	Mean	S.D		
Perceived value	2.16	0.79	2.11	0.83	2.399	0.037*
Trust	2.04	0.80	1.96	0.80	3.116	0.022*
Emotional attachment	2.22	0.80	2.06	0.76	5.687	0.007*

(* $p < 0.05$ significant at 5 percent level)

Table 13 shows the independent samples t-test for testing the significant mean difference on the mediating factors of consumer satisfaction and retention behavior of instant food products across two groups of family type viz., nuclear family and joint family. The table also reveals that, there exists a significant mean difference towards perceived value ($t=2.399$, $p < 0.05$), trust ($t=3.116$, $p < 0.05$) and emotional attachment ($t = 5.687$, $p < 0.05$) across the two groups of type of family of consumers of instant food products.

MAJOR FINDINGS

A majority (66.4%) of respondents are female, with the largest age group being 31–40 years (52.6%). Most participants are married (74.8%), belong to nuclear families (61.2%), and have two family members (53.1%). The predominant education level is undergraduate (28.3%), and 44.5% of respondents earn below ₹5 lakhs annually. Most reside in urban areas (66.7%) and own houses (64%). Employment is spread across government (23.2%), private (24.8%), and professional sectors (24.5%). Instant tea (19%) and Tata Q (28.6%) are preferred products. Orders are placed primarily through direct orders (47.4%) and food delivery apps (44.8%), with the highest usage during get-togethers (53.6%) and fortnightly (44.8%).

Significant differences exist between male and female consumers in product quality, promotion, packaging, service quality, and satisfaction. Married and unmarried consumers also show differences in these areas, as do those from nuclear versus joint families. Factors like product quality and service significantly influence consumer satisfaction across demographics.

MAJOR SUGGESTIONS

To effectively reach women aged 31 to 40, marketers should develop campaigns highlighting taste, convenience, and health benefits. Utilizing social media for sharing recipes and health tips can enhance engagement. Investing in eco-friendly packaging that emphasizes freshness is crucial, alongside clear nutritional labels to address health concerns. Exploring untapped markets like sauces and instant rice, and offering organic, low-sodium options will appeal to health-conscious consumers. Additionally, leveraging food delivery services and boosting e-commerce presence will be vital, as many consumers prefer delivery. To build customer loyalty, focus on transparency, sustainable practices, and create engaging content that fosters brand connections.

CONCLUSION

The study identifies factors affecting consumer satisfaction with quick food products, focusing on middle-aged women. Key influences include brand trust, product quality, and packaging.

Most purchases occur via delivery apps, with brands like Tata Q and instant tea being popular. Satisfaction varies by gender, marital status, and family structure.

To enhance customer satisfaction, manufacturers should employ targeted marketing, improve packaging, diversify product offerings, and strengthen digital sales channels. Emphasizing sustainability and health can attract more conscious consumers. In the competitive fast-food sector, aligning products with evolving expectations fosters market share growth, customer retention, and brand loyalty for all involved.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

TRANSFORMING PAYMENT PATTERNS: THE ROLE OF UPI AND IMPS IN MONTHLY TRANSACTIONS IN INDIA

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ABSTRACT

This composition discusses how UPI and IMPS have been revolutionizing how individuals in India are making yearly payments. UPI and IMPS are electronic payment platforms through which individuals can send and receive money instantly via mobile phones, ensuring that payments are quick and accessible. In the last 12 months, both networks have demonstrated sharp growth in value and number of deals, emphasizing their rise in fissionability as a payment tool among businesses as well as guests. According to the statistics, UPI payments have grown continuously, registering a month-to-month Growth Rate of 26.10, and IMPS deals have recorded 12.75 growth. This expansion reflects the speedy embrace of digital payments in India, propelled by high population ownership of smartphones, internet connectivity, and digital mindfulness. As digital payments keep developing, policymakers, businesses, and consumers need to understand their trends and counteraccusations. This composition will try to bring to light this revolutionary trip, pressing the need for innovative results to enable sustainable growth in digital payments in India.

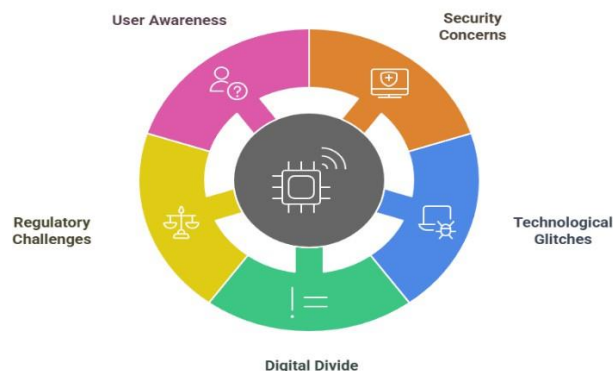
Keywords: Digital Payments, UPI, IMPS, sustainable growth, banking systems, smartphones, internet connectivity, and digital mindfulness.

INTRODUCTION

India has seen a tremendous change in its profitable script over the once many times. The most striking among them is the unforeseen shift towards digital payment modes, particularly UPI and IMPS. These modes enable individuals to send money in real time via their mobile devices, diminishing the use of cash and conventional banking systems. The RBI and the Indian government have both encouraged digital payments in a big way to promote fiscal inclusion, dampen the black market, and simplify and make further transparent deals. Accordingly, millions of Indians use digital means for routine deals, ranging from paying electricity bills to online shopping and transferring money to musketeers and cousins. UPI was rolled out in 2016 and picked up traction as it's simple, presto, and cheap. It enables a stoner to

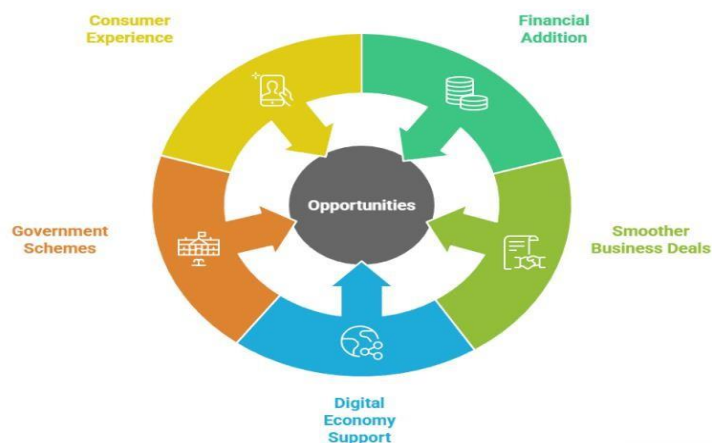
associate several bank accounts with a single app; icing plutocrat transfer becomes hassle-free. IMPS, which was launched in 2010, provides instant plutocrat transfer installations, which are 24x7 functional, so it's good for real-time payments. The two platforms endured exponential growth, particularly during the COVID-19 epidemic, because people steered clear of physical cash transactions and shifted to contactless deals.

Challenges of UPI and IMPS



The numbers demonstrate an apparent rising trend in the volume and value of yearly deals of UPI as well as IMPS. UPI's sale value has registered a steep growth, with a composite periodic growth rate (CAGR) of further than 26, as an indication of its growing ascendance in digital payments. IMPS too has recorded steady growth but at a slower pace as a demonstration of its sustained role in the digital payment ecosystem. Though these encouraging trends are on the rise, problems like cybersecurity pitfalls, technology structure challenges, and digital knowledge enterprises still exist. still, the openings offered by these platforms are vast. They can enable fiscal addition, empower small businesses, and help India in realizing a fully cashless economy. With digital payments increasing day by day, it's essential to know their changing geography for policymakers, merchandisers, and consumers to work to their true potential. This composition tries to dissect these trends, challenges, and openings and gain insight into how UPI and IMPS are reconsidering the future of deals in India.

Opportunities of UPI and IMPS



REVIEW OF LITERATURE

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S. C. Premathilaka. (2024). This study examines the transformative impact of Usage of Digital Payment Systems (UDPS) on Small and Medium Enterprises' (SMEs) credit access, mediated by the traceability of financial data (TFD) and Moderated by Government Intervention (GI) in the evolving financial landscape of Sri Lanka.

RESEARCH PROBLEMS

India is undergoing a rapid transformation in its payment landscape, marked by a steady shift from traditional cash-based transactions to digital modes, particularly through platforms like Unified Payments Interface (UPI) and Immediate Payment Service (IMPS). This evolution is driven by increased internet and mobile penetration, government initiatives such as Digital India, technological innovation, and the growing demand for convenience and security in financial transactions. Studies have highlighted the exponential rise in digital payments, the role of demographic and behavioural factors, and the influence of socio-economic events like the COVID-19 pandemic in accelerating digital adoption. However, despite this growth, there remains a lack of comprehensive understanding regarding how UPI and IMPS are specifically

reshaping monthly transaction patterns, influencing consumer behaviour, and altering the broader economic and financial dynamics. Furthermore, issues such as digital literacy, fraud risk, infrastructure challenges, and the urban-rural digital divide continue to pose significant barriers. This study, therefore, seeks to critically analyse the impact of UPI and IMPS on monthly transactions in India, addressing the gaps in empirical insight and offering data-driven recommendations for policy and financial inclusion.

RESEARCH METHODOLOGY

The research in this study relies on a quantitative approach to examine the development and influence of UPI and IMPS on online payment patterns in India during April 2024 to March 2025. The secondary data are those collected from formal reports released by the Reserve Bank of India (RBI), National Payments Corporation of India (NPCI), and other banking institutions. Descriptive statistical measures such as mean, standard deviation, and month of month Growth Rate are employed to determine growth trends, volatility, and general trends. The research does not entail primary data collection like surveys or interviews; however, future studies could include user surveys to examine consumer attitudes and behaviour. In all, this approach provides a robust framework for determining the growth patterns of UPI and IMPS in furthering our knowledge about their changing role in India's digital economy.

STUDY PERIOD

The period of study is from April 2024 to March 2025.

Table No. 1
UPI MONTHLY PRODUCT STATISTICS TREND
(In Crore)

S.No	Month	Value	MoM Growth (%)
1	Apr-24	19,64,464.52	-
2	May-24	20,44,937.05	4.10%
3	Jun-24	20,07,081.20	-1.85%
4	Jul-24	20,64,292.41	2.85%
5	Aug-24	20,60,735.57	-0.17%
6	Sep-24	20,63,994.71	0.16%
7	Oct-24	23,49,821.46	13.85%
8	Nov-24	21,55,187.41	-8.28%
9	Dec-24	23,24,699.94	7.87%
10	Jan-25	23,48,037.11	1.00%
11	Feb-25	21,96,481.70	-6.45%
12	Mar-25	24,77,221.59	12.78%
	Mean	21,71,412.89	
	Standard Deviation	1,65,700.97	
	CAGR (12 Months)	26.10%	

(Source: NPCI)

Table 1 shows the yearly value of UPI deals from April 2024 to March 2025 in crores of rupees. The statistics depict a steadily increasing trend, the values beginning around 19.64 lakh crore in April 2024 and reaching as high as about 24.77 lakh crore in March 2025. What's noteworthy then is the vault in October 2024 to nearly 23.50 lakh crore, conceivably due to increased spending exertion brought about by jubilee or festive seasons of shopping. Following

a temporary decline in November and December, the values picked up again in January and March, showing uninterrupted growth. The average yearly sale value of UPI is roughly 21.71 lakh crore with a standard deviation of around 1.66 lakh crore, showing some volatility but overall positive trend. The CAGR of 26.10 shows the strong growth in the stoner base and sales volume of UPI.

Chart No 1
UPI MONTHLY PRODUCT STATISTICS TRENDED (In Crore)

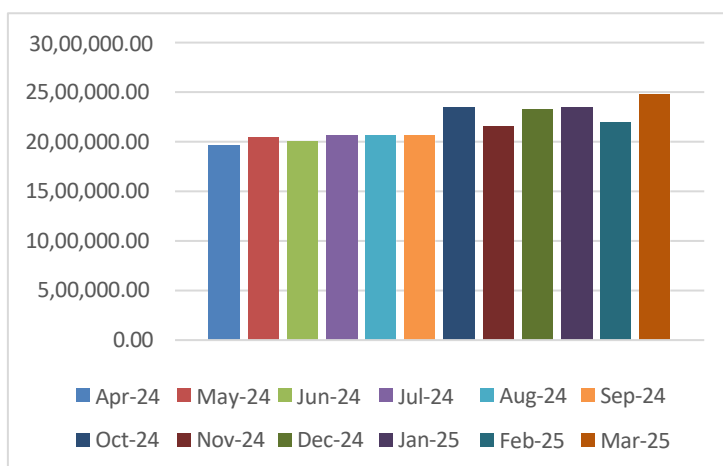


Table No 2
IMPS MONTHLY PRODUCT STATISTICS TRENDED
(In Crore)

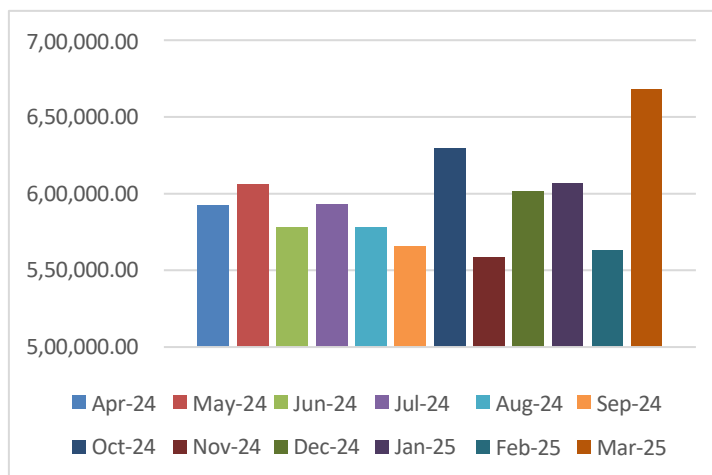
S.No	Month	Value	MoM Growth (%)
1	Apr-24	5,92,278.85	-
2	May-24	6,06,166.78	2.35%
3	Jun-24	5,77,794.24	-4.68%
4	Jul-24	5,93,176.58	2.66%
5	Aug-24	5,77,887.90	-2.58%
6	Sep-24	5,65,232.66	-2.19%
7	Oct-24	6,29,381.52	11.36%
8	Nov-24	5,58,327.60	-11.29%
9	Dec-24	6,01,549.15	7.75%
10	Jan-25	6,06,420.17	0.81%
11	Feb-25	5,63,081.64	-7.15%
12	Mar-25	6,67,812.80	18.60%
	Mean	594925.82	
	Standard Deviation	31,087.95	
	CAGR (12 Months)	12.75%	

(Source: NPCI)

Table 2 illustrates the sale values on IMPS during the period from April 2024 to March 2025, in terms of crores of rupees. The moderate growth is depicted with values beginning around 5.92 lakh crore in April 2024 and adding up to nearly 6.68 lakh crore in March 2025.

March provides the loftiest value, signifying a gradational growth in application. Interestingly, the sale value varies minimally month- on- month, with a dip during June and September but generally with an upward trend overall. The yearly average sale value is about 5.95 lakh crore with a standard deviation of about 31,088 crores, which indicates comparatively stable growth. The CAGR of 12.75 indicates IMPS is growing constantly, but at a lower rate than UPI. The steady growth of IMPS shows that it's still pivotal in delivering secure, immediate fund transfer installations, particularly to guests who stick to traditional banking channels.

Chart No 2
IMPS MONTHLY PRODUCT STATISTICS TRENDED (In Crore)



FINDINGS

The last time analysis of sale data on UPI and IMPS offers tremendous insight into India's dynamic digital payments geography. The value of deals for UPI has increased phenomenally, with a CAGR of 26.10, marking a fast pace towards mobile-grounded, instant payment. The peak deals in March 2025 indicate growing relinquishment due to gleeful ages, digital mindfulness, and government juggernauts. The yearly average value of UPI deals exceeds 21 lakh crores, indicating general acceptance in both civic and pastoral spaces. In contrast, IMPS, growing at a CAGR of 12.75, suggests constant but braking growth while still retaining its position in instant bank transfers. The stability of the IMPS data indicates it remains a fallback or completing system to UPI. Overall, the data underscores a clear trend of rising digital deals, inferring increased fiscal addition and technological relinquishment. The growth of UPI especially highlights its potential to make India a lower cash-dependent economy, fostering convenience, translucency, and profitable effectiveness. still, challenges similar to security pitfalls and infrastructural gaps need addressing to sustain this initiative.

SUGGESTIONS

To continue and further nurture the growth of UPI and IMPS in India, many strategic conducts are needed. First, enhancing cybersecurity protocols is a prerequisite for securing stoner information and establishing trust. Advanced encryption, frequent security checkups, and stronger information safeguards can alleviate fraud pitfalls. Second, adding digital structure, particularly in pastoral and remote regions, will give wider access. Investing in internet access and low-cost smartphones can close the digital divide, allowing more citizens to use digital payments. Third, encouraging digital knowledge training will educate druggies how to operate and use these platforms responsibly, dwindling abuse and miscalculations. Fourth, nonsupervisory authorities should produce unequivocal rules and guidelines to avoid abuse, uphold sequestration, and promote invention, staying current with tech development.

Fifth, incentivizing collaboration between government agencies, banks, and fintech companies can stimulate innovative results suited to stoner conditions, including streamlined apps or localized services. In addition, satisfying digital payments through prices or cashback impulses can encourage druggies to use UPI and IMPS more regularly. Last but not least, ongoing evaluation and data analysis will enable policymakers and companies to identify new challenges and opportunities and adapt strategies accordingly. Relinquishment of these measures will enable India to achieve the maximum possible use of digital payment systems, ensuring all deals come safer, more inclusive, and more effective.

CONCLUSION

The extraordinary growth in UPI and IMPS deals in India points towards the major metamorphosis to a digital, cashless frugality. Exponential growth in UPI, with a CAGR of further than 26, reflects the mass fissionability and growing dependence on mobile-driven payments. While IMPS remains a solid fallback with harmonious growth, the supremacy of UPI is changing the face of day-to-day deals in civic and pastoral India. With this change comes numerous advantages, such as greater convenience, briskly payment, increased fiscal benefits, and lower reliance on cash. Challenges like ensuring the security of deals, further structuring the digital structure, and covering the digital peak accompany these benefits. Addressing these problems calls for collaborative action from fiscal institutions, government authorities, and technology companies. The future of digital payments in India is bright, with inventions and policy changes needed to maintain growth, increase consumer confidence, and ensure inclusive fiscal engagement. As India transitions towards a fully digital frugality, the changing patterns in UPI and IMPS will be crucial to framing a more effective, transparent, and inclusive fiscal system for millions of Indians.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

JUNGLE NAMA: A SHARP FOCUS ON THE PERENNIAL AGE OF CLIMATE CHANGE

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ABSTRACT

Jungle Nama is a captivating and allegorical novel that takes readers to the heart of lush green forest known as Sundarbans. It is a mysterious jungle with so many hidden histories and stories. Written by talented writer the story follows the thrilling adventures mixed with moral thoughts. The novels The Hungry Tide and The Gun Island speak lot about the beautiful islands on Sundarbans and the threats imposed to the eco system by human beings. Readers can view these outstanding literary pieces which pictures a world with teeming dangers, beauty and unrelenting spirit of exploration. Jungle Nama with its unique style and structure will definitely create an impact on readers. Current world is filled with so many ecological threats that leads to slow extinction of human beings. This paper aims to how cruel human beings are than animals. People can deceive and kill anyone without a second thought for their greedy needs. Also it suggests the solutions for all human imposed threats are to control human greed.

Keywords: Myth, Climate Change, Greediness, human borders, Ecology.

Jungle Nama is one of the finest graphic verse novels wrote by Amitav Ghosh. It condemns human greed and its severe impacts. *Jungle Nama* is based on the myth of forest goddess Bonbibi. This novel can be classified as an allegory for human induced climate changes. The story is set in Sundarbans, the largest mangrove forest closely loaded with different species and vegetation. *Jungle Nama* is a contemporary retelling of the ancient Indian epic that is the story of Bonbibi – the forest goddess. This verse novel, blended with Ghosh's imagination and interpretation highlights the ecological issues of current world. Ghosh focuses on two themes in this novel. One is human greed which has no change from past to present. Another one is the ecological imbalance created by human beings which haunts the whole planet.

Throughout the novel Ghosh indirectly means how the natural resources are being exploited by human beings and complexities faced by humans and non-humans. He reminds that the impact will be severe which one cannot even imagine. Sundarbans is harmfully used for

human purposes and Sundarbans acts as a backdrop to the issues such as deforestation and climate change. “This is the Sundarban, where laden waters give birth; to a vast jungle that join ocean and earth” (1 JN). It is understood that water is a protector and creator of several things.

It is believed that long time ago there lived a demon named Dhokkin Rai who hunted humans vastly. He is very powerful and can change to any forms and shapes. Bonbibi and Shah Jangoli were two children sent from heaven to accomplish a divine mission. They were born to Berahim a fakir from mecca and his wife Golabibi. Bonbibi and Shah Jangoli fought with Dhokkin rai and defeated him. Out of mercy Bonbibi returned half of the kingdom to Dhokkin Rai, that is deep forest. The inhabited parts of Sundarbans are under the control of Bonbibi. People who go to collect honey and woods will pray to Bonbibi to save them from wild animals.

No human would dare to go near Dhokkin Rai’s boundary and if anyone enters they will lose their lives. “Thus did Bonbibi create a dispensation, that brought peace to the beings of Sundarbans. Every creature had a place, every want was met, all needs were balanced, like the lines of a couplet” (6 JN). Ghosh asserts that every living being on earth should be satisfied with the basic needs, and not for their greed. Nature itself created a boundary for human beings and animals and the boundary brought peace to all. Ghosh reminds that needs should be balanced like lines of a couplet. Whenever the boundaries are trespassed then peace will vanish.

Currently, Sundarbans lacks this balance because the mangroves are highly cut down for firewood and other purposes. “Rising salinity level in the delta is taking a toll on several mangrove species such as *Sonneratia apetala*, *Nypa fruticans* and *Bruguiera gymnorhiza*. Their growth is becoming stunted as they can’t withstand salinity above 20 psu (practical salinity unit). The average salinity of sea water in Bay of Bengal is 33 psu (which is equal to 33 gram of salt in one litre of water). Because of reduced sweet water flow and intrusion of salt water from the sea these trees are either dying or suffering from stunted growth,” said Abhijit Mitra, former head of the Marine Science Department of Calcutta University” (<https://www.hindustantimes.com/india-news/sunderbans-losing-its-dense-mangrove-cover-govt-report-101642099620808.html>) .The salinity of sea is increasing because of global warming. To be precise every climatic crisis happening in our planet are inter connected.

Ghosh, through his characters highlights two kinds of personalities here. He introduces two characters Dhona and Mona. Dhona was a rich one but a covet and selfish person. Mona was completely opposite to him, he lived a content life with comfort and peace. He worked hard and was happy with whatever he had. Dhona who always wanted more decided to get lot of timber, wax and honey. Dhona knows during spring season mangroves will be filled with hives and he wanted to collect as much as he can. He calls Mona to help him but latter refused to go. Mona advises that already money is plenty with him and it will lasts for a life time. Mona also reminds that whoever enters into forest with greed and selfish thoughts, will be in danger. Advises went futile and Dhona replied that “adding to your income is not a sin”.

Dhona then finds Dukhey a small boy who is his poor relative. He directly went to Dukhey’s house and tempted him. Dhona offered gold coins and a girl to marry only if he accompanies him to an adventurous ride to deep forest. Dukhey felt that it’s a great blessing to become a sailor but his mother refused saying that mangroves are realm of great danger. The young mind is easily exploited with the greedy needs of Dhona. Sundarbans are home to Royal Bengal tigers, estuarine crocodiles and poisonous snakes. No one will dare to enter inside the forest. These animals are actually protecting forest for a long time. As technology develops the

natural world changes.

Ghosh explores the after effects of greed and exploitation. The boundaries are violated and natural world is disrupted which resulted in loss of balance. Through the character Dukhey, Ghosh exposes how young minds are attracted and corrupted easily by the corporate world. The cunningness in the world of business is not familiar for the ambitious young hearts which are easy to corrupt. Dukhey's mother gives a detailed description about the tide land and its dangers. "Oh my son, beware. You are going to the tide land where dangers are legion. In the mangrove forest many strange things happen" (22 JN). Tide lands hides so many dangers and secrets, Dukhey's mother warned him that Dhokkin Rai is a shape shifter hunts humans in the form of tigers. Dhokkin Rai always chooses the irresistible people and he will try to kindle the greedy demon in man. She reminds to call Bonbibi in scary situation.

When Dhona finds the outer forest barren they slowly entered to deep forest that is the abode of the beast. The demon played a many tricks to tempt them. He showed hives but when Dhona touched, everything disappeared at last Dhokkin Rai possessed Dhona and ordered to offer a human in return he promised to give a lot of wealth. The alluring words of the beast made Dhona convinced and he left Dukhey in the middle of the forest. Human greed is very dangerous and blind which destroys so many lives around the world. The world wars happening around are great examples of human greed most of the ecological disasters happening in the corners of world are after effects of human actions.

"The value of wax is greater than that of honey, that's what I give you, you will make much more money. A deal like ours deserves the finest reward, take my offer, let the honey be dumped overboard" (45 JN). These words of Dokkin Rai made Dhona to surrender Dhukhey somehow. When Dhukhey saw the beast's face he called Bonbibi with all his heart and her brother Shah Jangoli came to his rescue. "You must stay within your bounds and never transgress; with what you have you must make do, don't seek excess" (56 JN) These lines spoken by Bonbibi is like a warning to whole mankind. Taking excess resources is actually exploitation of nature which can be easily saved for future. Cutting down so many trees and planting some saplings will not rectify the mistakes. Everyone should learn to quench the fire of greed.

People who easily move according to current situation never cares about any consequences. "According to an analysis by Business Insider, fashion production comprises 10% of total global carbon emissions, as much as the European Union. It dries up water sources and pollutes rivers and streams, while 85% of all textiles go to dumps each year. Even washing clothes releases 500,000 tons of microfibers into the ocean each year, the equivalent of 50 billion plastic bottles." (<https://earth.org/fast-fashions-detrimental-effect-on-the-environment/>) This report is a blow to whole human species. Authorities are acting blind because the common concept is that as Dhona said in *Jungle Nama* 'income is not a sin'. Everyone is only eager about how to fill own pockets instead of caring for Mother Nature.

Story moves like how greed plays unwanted games to avoid trials. Dhona with all his wealth returned to village and lied that Dhukhey was lost in forest. The little boy's mother cried desperately, meanwhile the fortune was better to Dhukhey. "I'll send you one mounted on my own crocodile; your goods will follow behind, you'll go back in style, you'll ride the rivers, with the pomp of a raja" (64 JN) Thus the moral lightens that even nature helps and protects humans if no harm is done to nature. Nature never neglects and hesitates to provide the supplies to living

beings.

Nature not only creates but also destroys sometimes. In his work *The Hungry Tide* Ghosh states that “There are no borders here to divide fresh water from salt, river from sea. The tides reach as far as three hundred kilometres inland and every day thousands of acres of forest disappear underwater, only to re-emerge hours later. The currents are so powerful as to reshape the islands almost daily-some days the water tears away entire promontories and peninsulas; at other times it throws up new shelves and sandbanks where there were none before”. (THT ,7) Nature becomes furious only because of human beings and not of other species.

The concluding lines of *Jungle Nama* remind the readers to live without greed. “All you need do is be content with what you’ve got; to be always craving more, is a demon’s lot. A world of endless appetite is a world possessed, is what your Munshi’s learned, by way of this quest” (70 JN) Ghosh in the ending note clearly states that the immediate urge to protect our planet. Ghosh also examines that the story of Bonbibibi legend is not bound to a single tradition or faith. “The ideas of limiting greed and preserving balance between the needs of humans and those of other beings – do not belong to any one tradition” (77 JN) Ghosh centralizes the idea of eco centrism by claiming that stories like these should be considered seriously by understanding the values. He uses the word planetary crisis to emphasize the prevailing situation.

"Climate change poses a powerful challenge to what is perhaps the single most important political conception of the modern era: the idea of freedom..." (TGD 119) These words in Ghosh’s *The Great Derangement* discloses that while "freedom" in and of itself is not a bad thing, it seriously hinders meaningful action in tackling the climate catastrophe. People do not want to be bound by strong institutions like governments or bureaucracies; they do not want their quality of life to be compromised, nor do they want further restrictions, laws, or mandates. People believe that if they choose to drive recycle compost, or follow a vegan diet, they are doing their part and that should be plenty. Since it infringes upon their sacred right to freedom, they do not want to be told they must take action. This kind of attitude creates most of issues and keeps it alive for long.

This beautiful piece of work discloses that crisis will arise easily but to tackle the issues will not be an easy task. “As the world grapples with rising water use and climate-fuelled drought, countries from the United States to Israel to Australia are building huge desalination plants to bolster their water supplies. These plants can create water for thousands of households by extracting the salt from ocean water, but they have also drawn harsh criticism from many environmental groups: Desalinating water requires a huge amount of energy, and it also produces a toxic brine that many plants discharge right back into the ocean, damaging marine life. Recent desalination plant proposals have drawn furious opposition in Los Angeles and Corpus Christi, Texas.” (<https://grist.org/technology/desalination-carbon-capture-brine/>) This is one of the latest system to the process desalination, but it seems not easy and opens door to another ecological issues. Humans are thus struggling to make their lives safe on this mother earth but they don’t know how far it is possible. So the solutions should be like without creating any more new problems. The *Jungle Nama*, with its style and narration stands unique in the array of eco literature collections.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

A STUDY ON RATING OF E-BANKING FEATURES ON SERVICE QUALITY AMONG THE CUSTOMERS.

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ABSTRACT

E-banking or Electronic Banking refers to all the forms of banking services and transactions performed through electronic means. It allows individuals, institutions and businesses to access their accounts, transact business, or obtain information on various financial products and services via a public or private network, including the internet. Thus, internet banking becomes a part of banking sector which facilitate all banking and financial services through online. With this aspect, the present research made an attempt to discuss e-banking service quality and its impact on customer satisfaction in commercial banks, Tiruchirappalli District.

KEY WORDS : *Financial system, banking services, Electronic Banking, customer opinion, innovative services , customer satisfaction.*

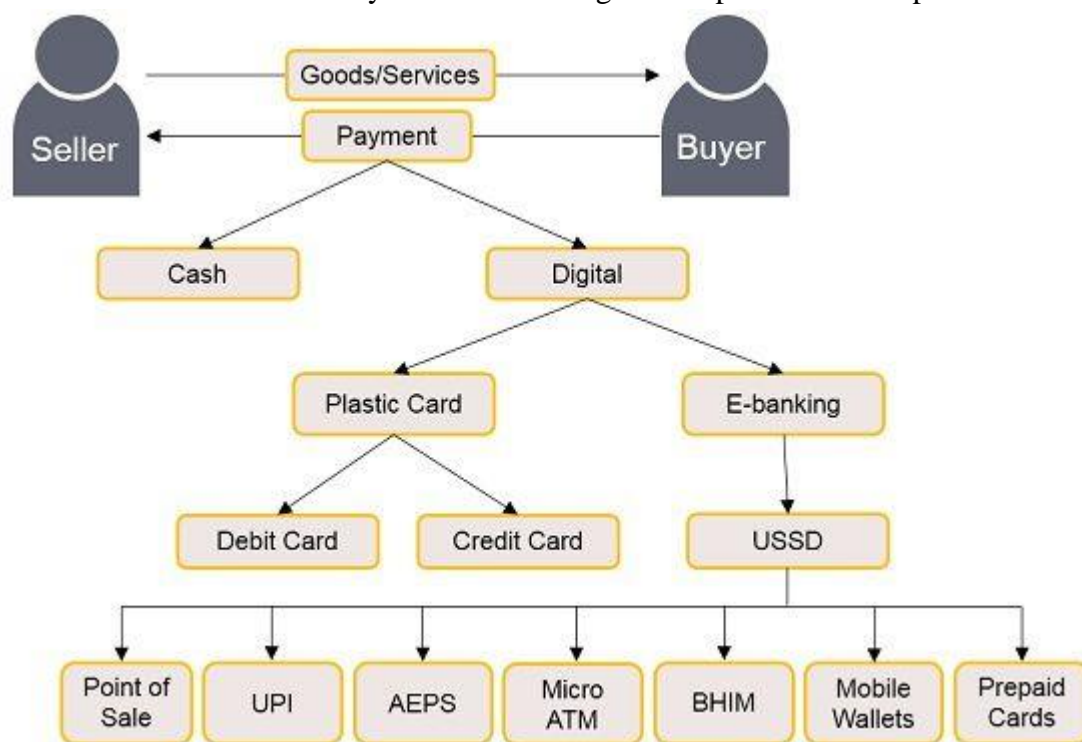
INTRODUCTION

Financial system of the country consists of well-structured banking system which helps to mobilise savings and investments from public and transfer the money to industrial sector. Hence, banking sector consider as a nerve system of economic development. It helps to provide more monetary transaction with financial services and products. The banking industry handles finances in a country including cash and credit. Banks are the institutional bodies that accept deposits and grant credit to the entities and play a major role in maintaining the economic stature of a country. Given their importance in the economy, banks are kept under strict regulation in most of the countries. In India, the Reserve Bank of India (RBI) is the apex banking institution that regulates the monetary policy in the country. Indian Banking sector diversified with various classifications like scheduled and non-schedule, commercial and cooperative sectors, public, private and foreign

sectors, small finance and payment banks etc, with the growth of information and communication technology internet banking become unavoidable. Internet Banking, also known as net-banking or online banking is an electronic payment system that enables the customer of a bank or a financial institution to make financial or non-financial transactions online via the internet. This service gives online access to almost every banking service, traditionally available through a local branch including fund transfers, deposits, and online bill payments to the customers. Now days almost all customers indented to implemented and use internet banking their financial services requirements from banks also encourage people to use internet at their convenience. With this aspect, the present research made an attempt to discuss e-banking service quality and its impact on customer satisfaction in commercial banks, Tiruchirappalli District.

E BANKING

E-banking is the growth of innovations in information and communication technology which enable as easy process. Electronic banking has many names like e banking, virtual banking, online banking, or internet banking. It is simply the use of electronic and telecommunications network for delivering various banking products and services. Through e-banking, a customer can access his account and conduct many transactions using his computer or mobile phone.



Source : <https://businessjargons.com/e-banking.html>

SCOPE OF THE STUDY

Banking sector in India is one of the well organised and systematically regulated sectors with different types of banking and its operation throughout the country. When e-banking practices are popularised, banks become important part of people. Banking is one of the most significant developments for the banking industry in its long history. However, despite the many benefits that online banking provides to customers, there are also a number of major concerns and challenges for marketers in the online banking sector. E-banking after varieties of services to the customer with cost effective and accessible manner. Traditional banking habits, security, technical issues, transaction difficulties, and small marketing budgets are all

major challenges that online banking marketers will have to reconcile if they are to succeed in this field. However, demand for this industry continues to be very strong. So, it is likely that online banks will only grow more advanced and successful as they strive to resolve their marketing challenges. With this view, the present research mainly focuses on services quality features of e-banking of public sectors banks and its impact on customer's satisfaction towards services quality of e-banking perception and retention towards service quality of e-banking of public sector banks in Tiruchirappalli District.

REVIEW OF LITERATURE

Kamakodi. N & Khan B. A. (2008) shows that it is almost 15 years since the Indian banking sector was liberalized and paradigm shift happened in the Indian banking services. All banks have either totally implemented 'core banking systems' or halfway through. The results of a survey were obtained from 292 respondents about their views on electronic banking channels, indicate that the banks are exceeding the expectations in technology based services; and their perceived service level on branch network is below the expected levels of the respondents.

Shobhana (2010) examined "Operational Efficiency of Public Sector Banks in India". The study revealed that out of 27 public sector banks in India, only 9 banks have achieved high level of efficiency in its operations with the oriental bank of commerce at the top. It is found that factors such as size of assets, network of branches and staff strength do not have significant influence over operational efficiency of banks.

Paramasivan. C (2011) Information technology plays a key role in the modern world which meets the day to day activities of the human beings directly or indirectly associated. Commercial activities particularly banking and financial sectors may not function without proper information technology. With rapid development in the Information Technology Commercial and financial sectors performed will and could reach to nook and corner of the world. Common man can enjoy the benefits of the personal, commercial and official activities through information technology.

Ruchi Gupta CA. (2014), written an article entitled "An Analysis of Indian Public Sector Banks Using Camel Approach", In this paper an attempt is made to discuss the progression of an economy is significantly dependent upon deployment as well as optimum utilization of resources and most importantly operational efficiency of the various sectors, of which banking sector plays a very vital role. Banking sector helps in stimulation of capital formation, innovation and monetization in addition to facilitation of monetary policy.

Devanand . H. N. & Rajendra Prasad.T (2015) Thus it has been clearly observed that in the post reform period the focus of banking changed towards increasing the productivity, profitability, improving operational efficiency in the banking sector. The profit planning has become a complex phenomenon under competitive and deregulated environment. In the present scenario, there has been an increased focus on profitability, although other social objectives continue to be important.

GurpreetKaur (2015) written an article entitled "Performance Analysis: A Study Of Public Sector & Private Sector Banks In India", The main objective of this article is to make an evaluation of the financial performance of Indian Banks .The financial performance of a bank is measured by a number of key indicators with reference to Deposits, Advances, Total Income, Investment and Net Profit etc. Recommendations and suggestions have been given for improving the performance of Banks in India.

Parashuramulu. B, Harikanth. D (2018) The operational performance in commercial banks can be evaluated by using a measure, i.e., operating profit, spread, burden, net profit, and average and growth rate is taken for the present study. The information on operational performance is useful to the management for planning, decision making and control. This will enable the management to exercise control over the day to day operations with a view to ensuring maximum efficiency and adherence to the plans of management.

It is the social image ascribed to the self that drives an individual to behave in a certain way (Uddin et al., 2020). Identity theory postulates that both social image and self-image shape one's behavior in a given setting. Hence, students who are characterized as creative by themselves and by society engage more creatively than students with no creative image (Mao and Shen, 2020, Uddin et al., 2020).

Negative peer group evaluation, academic rigidity, and lack of openness to experience make young adults fail to turn their intelligence and self-belief into creative potential. (Alacovska and Kärreman, 2023).

STATEMENT OF THE PROBLEM

Banks play a key role in socio-economic development of the country which helps to transform money from one hand to another flow of capital and industrial development is possible only with the help of well-structured banking sectors. Banking in India is an age old concept with the establishment of banking of Hindustan in 1770. After that lot of changes and reforms in banking structure and ownership with modifications. Commercial banks play a significant role in fulfilling the short-term and medium-term financial requirements of industries. They do not provide, long-term credit, so that liquidity of assets should be maintained. The funds of commercial banks belong to the general public and are withdrawn at a short notice; therefore, commercial banks prefers to provide credit for a short period of time backed by tangible and easily marketable securities. Commercial banks, while providing loans to businesses, consider various factors, such as nature and size of business, financial status and profitability of the business, and its ability to repay loans. And also role of commercial banks in social and agricultural development in the country is very considerable manner. Now it becomes a technology based with innovative and effective.

E-banking channels also developed into various devices with the help of innovation and technology. Modern technology being more devices for performing e-banking services of commercial banks. Though the facility of e-banking is getting popular and spreading very fast, but most of the respondents do not know about the services because farmers are technically illiterate and unable to use this service. This research is an effort to investigate the level of awareness and perception among the Customers using e-banking service particularly with Public Sector Banks and also the factors which influence the usage of e-banking services. This research is an effort to study the technological developments through e-banking services and also tries to find out the technical, administrative and procedural problems faced by the Customers while using E banking facility. Thus, e-banking features of service quality of commercial banks are highly influence the perception of customer towards service quality, customer satisfaction and customer retention. Every bank wants to concentrate these four major factors such as service quality, customer perception towards e-banking, customer satisfaction and customer retention. Public sector banks attempt to achieve the above factors with the help of their existing technology. Whereas among the public sector banks, competition leads and influence these

factors to success in the field. In this view, present study attempt to explore the various factors associate with the e-banking services of commercial banks in Tiruchirappalli District.

OBJECTIVES OF THE STUDY

The primary objectives of the study are to measure the study the rating of E-Banking Features on service quality among the customers.

RESEARCH METHODOLOGY

The study is descriptive in nature. It is descriptive in the logic that it gives a detailed description with regard to labour welfare measures in sugar mills in *Perambalur District* of Tamil Nadu. The study is based on both the primary and secondary data. The primary data were collected from select sugar mills in Perambalur District with the help of a structured questionnaire. The questionnaire was tested with 390 employees in sugar mills in Perambalur District and utmost care was taken to avoid errors in data collection. The secondary data were collected from official and other reliable records and reports.

SAMPLING DESIGN

The Proportionate Stratified Sampling Method was used to select the respondents in sugar mills in Perambalur District. There are 204 employees in sugar mills in Perambalur District of which 2303 employees are working in different categories.

ANALYSIS AND DISCUSSION

Table 1
Distribution of customers' level of opinion on website accessibility
towards service quality of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	87	20.2	20.2	20.2
Moderate	155	36.0	36.0	56.3
High	188	43.7	43.7	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.20 shows the distribution of customers' level of opinion on website accessibility towards service quality of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. Those items below (mean - standard deviation) were categorized as low level, items above (mean + standard deviation) were categorized as high level and the scores between (mean - standard deviation) and (mean + standard deviation) were categorized as moderate level. It also reveals that that 20.2% of the customers have low level of opinion on website accessibility towards service quality, 36% of the customers have moderate level of opinion on website accessibility towards service quality and 43.7% of the customers have high level of opinion on website accessibility towards service quality.

Table 2
Distribution of customers' level of opinion on security towards
service quality of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	112	26.0	26.0	26.0
Moderate	186	43.3	43.3	69.3
High	132	30.7	30.7	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.21 shows the distribution of customers' level of opinion on security towards service quality of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that 26% of the customers have low level of opinion on security towards service quality, 43.3% of the customers have moderate level of opinion on security towards service quality and 30.7% of the customers have high level of opinion on security towards service quality.

Table 3
Distribution of customers' level of opinion on responsiveness
towards service quality of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	87	20.2	20.2	20.2
Moderate	139	32.3	32.3	52.6
High	204	47.4	47.4	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.22 shows the distribution of customers' level of opinion on responsiveness towards service quality of e-banking services. The level of customers opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that 20.2% of the customers have low level of opinion on responsiveness towards service quality, 32.3% of the customers have moderate level of opinion on responsiveness towards service quality and 47.4% of the customers have high level of opinion on responsiveness towards service quality.

Table 4
Distribution of customers' level of opinion on cost effectiveness
towards service quality of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	141	32.8	32.8	32.8
Moderate	151	35.1	35.1	67.9
High	138	32.1	32.1	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.23 shows the distribution of customers' level of opinion on cost effectiveness towards service quality of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that 32.8% of the customers have low level of opinion, 35.1% of the customers have moderate level of opinion and 32.1% of the customers have high level of opinion on cost effectiveness towards service quality.

Table 5
Distribution of customers' level of opinion on safety towards
satisfaction of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	133	30.9	30.9	30.9
Moderate	148	34.4	34.4	65.3
High	149	34.7	34.7	100.0
Total	430	100.0	100.0	

Source: Survey data

INTERPRETATION

The table 4.24 shows the distribution of customers' level of opinion on safety towards satisfaction of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that, 30.9% of the customers have low level of opinion, 34.4% of the customers have moderate level of opinion and 34.7% of the customers have high level of opinion on cost effectiveness towards satisfaction of e-banking services.

Table 6
Distribution of customers' level of opinion on performance
towards satisfaction of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	71	16.5	16.5	16.5
Moderate	211	49.1	49.1	65.6
High	148	34.4	34.4	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.25 shows the distribution of customers' level of opinion on performance towards satisfaction of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that, 16.5% of the customers have low level of opinion, 49.1% of the customers have moderate level of opinion and 34.4% of the customers have high level of opinion on performance towards satisfaction of e-banking services.

Table 7
Distribution of customers' level of opinion on reliability towards
satisfaction of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	87	20.2	20.2	20.2
Moderate	205	47.7	47.7	67.9
High	138	32.1	32.1	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.26 shows the distribution of customers' level of opinion on reliability towards satisfaction of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that, 20.2% of the customers have low level of opinion, 47.7% of the customers have moderate level of opinion and 32.1% of the customers have high level of opinion on reliability towards satisfaction of e-banking services.

Table 8

Distribution of customers' level of opinion on ease of use towards satisfaction of e-banking services

Valid	Frequency	Percent	Valid Percent	Cumulative Percent
Low	118	27.4	27.4	27.4
Moderate	185	43.0	43.0	70.5
High	127	29.5	29.5	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.27 shows the distribution of customers' level of opinion on ease of use towards satisfaction of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. It also reveals that that, 27.4% of the customers have low level of opinion, 43% of the customers have moderate level of opinion and 29.5% of the customers have high level of opinion on ease of use towards satisfaction of e-banking services.

Table 9

Distribution of customers' level of opinion on customer retention of e-banking services

	Frequency	Percent	Valid Percent	Cumulative Percent
Low	135	31.4	31.4	31.4
Moderate	156	36.3	36.3	67.7
High	139	32.3	32.3	100.0
Total	430	100.0	100.0	

Source : Survey data

INTERPRETATION

The table 4.28 shows the distribution of customer's level of opinion on customer retention of e-banking services. The level of customers' opinion were classified as low, moderate and high based on the total scores given by the customers on each item. Those items below (mean - standard deviation) were categorized as low level, items above(mean + standard deviation) were categorized as high level and the scores between (mean - standard deviation) and (mean + standard deviation) were categorized as moderate level. It also reveals that that, 31.4% of the customers have low level of opinion on customer retention, 36.3% of the customers have moderate level of opinion on customer retention and 32.3% of the customers have high level of opinion on customer retention.

FINDINGS

It has noted that majority of the customers 43.7 percent were belongs to high level of opinion on website accessibility for customer's service quality on E- banking service in Tiruchirappalli District. Majority of the customers 43.3 percent were belongs to moderate level of opinion on security for customer's service quality on E- banking service in Tiruchirappalli

District.

It has shows that majority of the customers 47.4 percent were belongs to high level of opinion on responsiveness for customer's service quality on E- banking service in Tiruchirappalli District. Majority of the customers 35.1 percent were belongs to moderate level of opinion on cost effectiveness for customer's service quality on E- banking service in Tiruchirappalli District.

It has explains that majority of the customers 34.7 percent were belongs to high level of opinion on safety for satisfaction on E- banking service in Tiruchirappalli District. Majority of the customers 49.1 percent were belongs to moderate level of opinion on performance for satisfaction on E- banking service in Tiruchirappalli District.

It has reveals that majority of the customers 47.7 percent were belongs to moderate level of opinion on reliability for satisfaction on E- banking service in Tiruchirappalli District. Majority of the customers 43.0 percent were belongs to moderate level of opinion on ease of use for satisfaction on E- banking service in Tiruchirappalli District. It has explains that majority of the customers 36.3 percent were belongs to moderate level of opinion on customers retention for customer's service quality and satisfaction on E- banking service in Tiruchirappalli District.

SUGGESTIONS AND CONCLUSION

Information technology and internet penetration are the major reason for the growth of e banking services in the country particularly in the study area. The dynamic nature of technology and time may lead to change in customer preferences. Customers will be forced to review their preferences with changes in policies and regulations of the ruling elite, which became evident during the recent demonetization regime. Customers today are left with a multitude of offers, options and opportunities when choosing banking services. In this view, website is one of the important gateways to understand the operation and services available in the concerned commercial banks. Website of the commercial banks provides answers to the questions like The bank's web site makes easy to find what the user need, Information at the bank's web site is well organized, The bank's web site is simple to use, The bank's web site enables the user to get on to it quickly and the info on the webpage is easy in understanding. Therefore website accessibility is one of the major factors of service quality of commercial banks in Tiruchirappalli District.

Customers are always proper secured, and safety made of banking transaction. When the banks ensure these features, customers may trust e banking activities of commercial banks. They are rapidly evolving in their use of banking services and technologies. Changing customer preferences and behaviours indicate need for introduction of new strategies and latest technologies to attract and maintain customers. There are good number of customers in every group like student, service class, business class and professionals; it shows that they all are having interest in using the e-banking services e-banking along with a deeper understanding of customer needs. As regards security as a major factors of service quality , bankers should explore these points like The users are satisfied with the security of e-banking systems, The adoption of security mechanism increase the data security on transactions, The bank is listed on list of net banking for online shopping or payment services, online payment is successful every time and Refund of failed transactions credited back to account.

Proper response from banks is the top priority of the customers. Whenever customers approach bankers, they should respond properly. The banking sector plays a vital role in the efficient functioning and smooth operation of the industries in and around this district.

Significant progress in economy is identified after the introduction of technology banking services likee banking services. Therefore, E- banking provides me with quick responses, E-banking website handles customers request quickly, E-banking Quickly resolves online transaction problems, E-banking provides solutions to my problems promptly and E-banking operations are cost effective are the major statements pointed by the customers with respect to responsiveness of e banking service quality of commercial banks in Tiruchirappalli District.

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RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

A STUDY ON EMPLOYEES JOB SATISFACTION OF HARDWARE SHOPS IN TAMIL NADU

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ABSTRACT

This study investigates the factors influencing employee job satisfaction within hardware shops across Tamil Nadu. The primary objective is to identify key determinants that contribute to or detract from the overall satisfaction levels of employees in this specific retail sector. Utilizing a quantitative research approach, data will be collected through structured questionnaires administered to a diverse sample of employees working in various hardware establishments across different districts of Tamil Nadu. The questionnaire will cover aspects such as working conditions, compensation and benefits, opportunities for growth, management style, interpersonal relationships, and work-life balance. The anticipated findings of this research are expected to highlight significant correlations between specific organizational practices and employee satisfaction. The study aims to provide valuable insights for hardware shop owners and managers, enabling them to formulate effective strategies to improve employee morale, reduce turnover rates, and foster a more productive work environment. Ultimately, this research seeks to contribute to the existing literature on job satisfaction within the retail sector, with a specific focus on the unique context of hardware shops in Tamil Nadu.

KEY WORDS: Hardware Shops, organizational practices, Job Satisfaction, Employees, Work environment and Performance

INTRODUCTION

Employee job satisfaction is a crucial aspect of human resource management and organizational success, especially in retail sectors like hardware shops, where daily operations heavily depend on employees' dedication and performance. In Chennai, a city with a robust economic landscape and a rising demand for infrastructure and construction, hardware shops play a vital role in the supply chain. These shops rely on a stable workforce to meet customer expectations, handle product inventory, and sustain business competitiveness. For these

businesses, employee satisfaction not only affects turnover rates but also influences customer service quality, productivity, and overall profitability. Understanding the factors that contribute to employee job satisfaction in hardware shops can provide insights into improving employee retention, reducing training costs, and fostering a positive work environment that benefits both employers and employees.

Employee job satisfaction is influenced by a variety of factors, including work environment, job security, compensation, and opportunities for growth. In Chennai's hardware retail sector, which often involves a mix of small and large businesses, employees face unique challenges such as fluctuating customer demand, limited career advancement opportunities, and variable income. These factors can lead to dissatisfaction if not properly addressed. Employees in hardware shops may also deal with physically demanding tasks and long working hours, which can impact their well-being and overall satisfaction. Exploring these influences helps reveal the specific needs of employees in this sector, allowing business owners to implement changes that improve morale, engagement, and loyalty.

GROWTH OF HARDWARE SECTOR

The growth of the hardware sector in Chennai has a significant impact on the employment landscape, offering numerous job opportunities across a range of roles within hardware shops. As Chennai's economy expands, driven by real estate, construction, and infrastructure development, the demand for hardware supplies has surged, making the hardware retail sector a cornerstone of the city's commercial framework. This growth has led to an increased demand for skilled and semi-skilled labor in hardware shops, creating a vital source of employment for local residents. Consequently, job satisfaction among employees in this sector has become a critical factor, influencing both the stability and success of these businesses.

Employee job satisfaction in Chennai's growing hardware sector is closely tied to work conditions, opportunities for advancement, and compensation. With the rise in the sector's competitive dynamics, hardware shops are striving to attract and retain talented workers by improving workplace conditions and investing in employee well-being. As the industry grows, the pressure to maintain consistent service quality and customer satisfaction increases, often resulting in extended work hours and the need for employees to perform a variety of tasks. While the sector's growth provides job stability, it also brings challenges related to workload and employee expectations, making satisfaction a complex issue that requires careful attention.

Key Trends in Chennai's Hardware Sector

- Growing demand for hardware products due to Chennai's expanding real estate and construction sectors.
- Increase in small and medium-sized hardware shops across the city to meet diverse consumer needs.
- Rising competition among hardware shops, driving improvements in customer service and product variety.
- Adoption of digital payment systems and inventory management software to streamline operations.
- Focus on skill development and training programs to enhance employee performance and retention.
- Emphasis on offering competitive salaries and benefits to retain skilled workers amid rising living costs.

- Shift toward eco-friendly and sustainable hardware products to meet changing consumer preferences.
- Extended work hours and additional workload during peak demand seasons, impacting employee work-life balance.
- Use of social media and online platforms by hardware shops to increase visibility and attract more customers.
- Increased collaboration between hardware shops and large-scale suppliers to secure better prices and product availability.

EMPLOYEE JOB SATISFACTION IN HARDWARE SHOPS

Customer demand and convenience are crucial factors in the success of hardware shops, especially in urban areas where competition is high, and customer expectations are diverse. Satisfied employees play a vital role in meeting these demands, as their motivation and expertise directly influence the quality of customer service and the overall convenience of the shopping experience.

In a hardware shop, employees are often expected to offer knowledgeable recommendations on products, guide customers in finding suitable tools, and provide tailored advice for projects. When employees are satisfied and engaged, they are more likely to deliver this level of support, which not only meets but often exceeds customer expectations. Satisfied employees are also more attentive and patient, creating a more enjoyable and efficient shopping experience, which is essential for retaining loyal customers in a competitive market.

Convenience is another significant aspect, as customers in the city often prioritize shops where they can find quick, effective solutions. When employees are content and well-trained, they can streamline the shopping process by promptly assisting customers, reducing wait times, and ensuring efficient service. Conversely, dissatisfaction can lead to poor engagement, which may translate into slow service and a lack of helpfulness, detracting from the customer experience.

REVIEW OF LITERATURE

Arumugam & Krishna (2013) conducted a study on small retail businesses in Chennai, identifying key factors like employee recognition, fair pay, and work-life balance as primary contributors to job satisfaction. These findings are applicable to hardware stores in Chennai, where similar factors could influence employee satisfaction. Chennai, as a metro city, has a unique workforce that may be influenced by factors such as the cost of living, local culture, and economic conditions. Additionally, the competitive nature of the retail sector in Chennai necessitates that hardware shops invest in employee satisfaction to improve productivity and reduce turnover.

The hardware retail sector in Chennai, like in many cities, faces unique challenges such as intense competition, changing consumer demands, and fluctuating market conditions. Research by **Johnson & Singh (2014)** highlighted that employees in hardware retail stores experience higher stress due to the physical nature of the job and customer service demands. Furthermore, the customer-centric nature of the industry means that employee satisfaction is also dependent on their ability to meet customer expectations.

Choi and Goh (2015) indicates that a positive, safe, and well-organized work environment enhances employee morale. In the hardware retail sector, this extends to the physical conditions of the store, ease of product handling, and organizational culture.

STATEMENT OF THE PROBLEM

The problem of employee job satisfaction in hardware shops across Chennai is a critical issue that impacts the overall productivity and success of businesses in this sector. As Chennai experiences rapid growth in construction, real estate, and retail industries, hardware shops are facing an increased demand for products and services. However, despite the expanding market, many employees in these shops experience dissatisfaction due to various factors such as low wages, lack of career growth opportunities, long working hours, and insufficient recognition for their efforts. This dissatisfaction can lead to high employee turnover, decreased productivity, and a negative impact on customer service, which ultimately affects the shop's bottom line. Therefore, the problem lies in identifying the key factors that influence employee job satisfaction in hardware shops, understanding the specific challenges employees face, and determining how these issues can be mitigated. The study aims to fill this gap by investigating the drivers of job satisfaction in this sector and offering recommendations to enhance employee well-being, retention, and performance, ultimately contributing to the sustained success of hardware shops in Chennai.

OBJECTIVES OF THE STUDY

1. To identify the key factors that contribute to employee job satisfaction in the hardware retail sector.
2. To assess the level of job satisfaction among employees working in hardware shops in Chennai.
3. To examine the relationship between employee satisfaction and job performance in hardware shops.

RESEARCH METHODOLOGY

This study employs both quantitative and qualitative research approaches to gain a comprehensive understanding of employee job satisfaction in hardware shops. Primary data will be gathered via surveys and interviews, while secondary data will be analysed from reports and literature already in existence. The sample size for this study on employee job satisfaction in hardware shops in Chennai will consist of 150 employees from various hardware shops across the city. This sample will be selected using a stratified random sampling method to ensure representation from different shop types, including small independent shops and larger retail chains provided the required information. A one-way ANOVA, correlation coefficient, and percentage analysis are used to examine the collected data.

LIMITATIONS OF THE STUDY

The study focuses only on hardware shops in Chennai, limiting its applicability to other regions or cities with different economic conditions or retail landscapes.

RESULTS AND DISCUSSIONS

Table – 1: Personal Profile of the Employees

Particulars		Employees	Percentage
Gender	Male	96	64.00%
	Female	54	36.00%
	Total	150	100.00%
Age	Upto 25 Years	49	32.67%
	25 – 35	54	36.00%

	35 – 45	34	22.67%
	Above 45 Years	13	8.67%
	Total	150	100.00%
Marital Status	Married	58	38.67%
	Un married	87	58.00%
	Single parent	5	3.33%
	Total	150	100.00%
Education Level	Up to School Level	57	38.00%
	UG Degree	43	28.67%
	PG Degree	12	8.00%
	ITI / Diploma	23	15.33%
	Others	15	10.00%
	Total	150	100.00%
Monthly Income	Up to Rs.15,000	69	46.00%
	Rs. 15,001-25,000	41	27.33%
	Rs.25,001-35,000	21	14.00%
	Rs.35,001-45,000	14	9.33%
	Above Rs. 45,000	5	3.33%
	Total	150	100.00%
Types of Family	Nuclear family	118	78.67%
	Joint family	32	21.33%
	Total	150	100.00%

The above table 1 shows that, out of 150 respondents, Majority 64% of the respondents are male and least 36% of the respondents are female based on their gender. Majority 36% of the respondents belongs to the age group between 25-35 years and least 8.67% of the respondents belongs to the age group above 45 years. Majority 58% of the respondents are unmarried and least 3.3% of the respondents are single parent based on their current marital status. Maximum 38% of the respondents educational qualification are up to School level and least 8% of the respondents are PG degree holders according to their educational qualification. Majority 46% of the respondent's monthly income are up to Rs. 15,000 and least 3.3% of the respondent's monthly income are above Rs.45,000. Majority 78.67% of the respondents is belongs to nuclear family and least 21.33% of the respondents are belongs to joint family.

H₀: There is no significant difference between educational qualification of the employees with respect to job satisfaction of hardware shop employee in Chennai.

Table -2 One-way ANOVA on educational qualification of the employees with respect to job satisfaction of hardware shop employee in Chennai.

Educational Qualification of the Employees	Mean	SD	f Value	p Value
Up to School Level	3.32	1.093	4.631	0.000
UG Degree	3.42	1.351		
PG Degree	4.31	0.795		
ITI / Diploma	4.12	1.165		
Others	4.14	0.922		

Table 2 indicates that, Since P value is less than 0.05, the null hypothesis is rejected at 5 percent level of significance with regard to job satisfaction of hardware shop employee in Chennai. Hence it is concluded that there is a significant difference between educational qualification of the employees with respect to job satisfaction of hardware shop employee in Chennai.

H₀: There is no correlation among working hours, wage system, Career growth opportunities, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai.

Table – 3: Correlation among the factors influencing job satisfaction of Hardware Shop Employees in Chennai.

		Working hours	Wage System	Career growth opportunities	Performance	Rewards
Working hours	Pearson correlation	1	.515**	.421**	.515**	.526**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	150	150	150	150	150
Wage System	Pearson correlation	.515**	1	.539**	.415**	.557**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	150	150	150	150	150
Career growth opportunities	Pearson correlation	.421**	.539**	1	.541**	.539**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	150	150	150	150	150
Performance	Pearson correlation	.515**	.415**	.541**	1	.615**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	150	150	150	150	150
Rewards	Pearson correlation	.526**	.557**	.539**	.615**	1

	Sig. (2-tailed)	.000	.000	.000	.000	
	N	150	150	150	150	150

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

Table 3 shows that, the Hypotheses is rejected in the case of

1. Working hours of Hardware Shop Employees is correlated with wage system, Career growth opportunities, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai.
2. Wage system of Hardware Shop Employees is correlated with working hours, Career growth opportunities, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai.
3. Career growth opportunities of Hardware Shop Employees is correlated with working hours, wage system, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai.
4. Performance of Hardware Shop Employees is correlated with working hours, wage system, Career growth opportunities and rewards of job satisfaction of Hardware Shop Employees in Chennai.
5. Rewards of Hardware Shop Employees is correlated with working hours, wage system, Career growth opportunities and Performance of job satisfaction of Hardware Shop Employees in Chennai.

MAJOR FINDING:

- Out of 150 respondents, Majority 64% of the respondents are male and least 36% of the respondents are female based on their gender. Majority 36% of the respondents belongs to the age group between 25-35 years and least 8.67% of the respondents belongs to the age group above 45 years. Majority 58% of the respondents are unmarried and least 3.3% of the respondents are single parent based on their current marital status. Maximum 38% of the respondent's educational qualification are up to School level and least 8% of the respondents are PG degree holders according to their educational qualification. Majority 46% of the respondent's monthly income are up to Rs. 15,000 and least 3.3% of the respondent's monthly income are above Rs.45,000. Majority 78.67% of the respondents is belonging to nuclear family and least 21.33% of the respondents are belongs to joint family.
- Since P value is less than 0.05, the null hypothesis is rejected at 5 percent level of significance with regard to job satisfaction of hardware shop employee in Chennai. Hence it is concluded that there is a significant difference between educational qualification of the employees with respect to job satisfaction of hardware shop employee in Chennai.
- Working hours of Hardware Shop Employees is correlated with wage system, Career growth opportunities, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai because the P value is less than 0.01.
- Wage system of Hardware Shop Employees is correlated with working hours, Career growth opportunities, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai because the P value is less than 0.01.
- Career growth opportunities of Hardware Shop Employees is correlated with working hours, wage system, performance and rewards of job satisfaction of Hardware Shop Employees in Chennai because the P value is less than 0.01.

- Performance of Hardware Shop Employees is correlated with working hours, wage system, Career growth opportunities and rewards of job satisfaction of Hardware Shop Employees in Chennai because the P value is less than 0.01.
- Rewards of Hardware Shop Employees is correlated with working hours, wage system, Career growth opportunities and Performance of job satisfaction of Hardware Shop Employees in Chennai because the P value is less than 0.01.

CONCLUSION

This study aimed to explore and analyze the factors influencing employee job satisfaction in hardware shops in Chennai city. Through an in-depth examination of various determinants such as compensation, work environment, career development opportunities, and management practices, the study highlighted the significant factors contributing to employees' overall satisfaction in the retail hardware sector. The findings suggest that job satisfaction among employees in hardware shops in Chennai is strongly influenced by factors such as fair compensation, positive work relationships, recognition, and career advancement opportunities. Employees who felt supported by management and experienced a safe, inclusive, and positive work environment reported higher levels of job satisfaction. Additionally, the role of leadership and effective communication emerged as a key driver in enhancing job satisfaction levels, demonstrating the importance of management's involvement in employee welfare. This research offers valuable insights for business owners and managers in the hardware retail sector, highlighting the need for a focused approach to improving employee satisfaction as a means of ensuring sustainable growth and success in a highly competitive industry.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

A STUDY ON JOB SATISFACTION OF SHIPPING EMPLOYEES IN CHENNAI, TAMILNADU

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ABSTRACT

Job satisfaction is closely related with many organizational phenomena such as motivation, performance, leadership, attitude, conflict, etc. The factors include salary, working environment, autonomy, communication and organizational commitment. The main objective of the study is to measure the satisfaction level of employees working in shipping company. Both primary and secondary data are extensively used in this study. In this study, the secondary data was collected from various journals, books, websites and newspaper in various topics. Then, the primary data was collected through the questionnaire method from the employees. For this study 96 respondents were selected positively. For collecting necessary data, 96 respondents have been collected in Chennai by using simple random sampling method. The study also tries to find out the factors influencing employee job satisfaction.

KEY WORDS: Job satisfaction, Employees, leadership, organizational commitment.

INTRODUCTION

The act of satisfying a need, desire, or appetite or the feeling resulting from such fulfillment is referred to as satisfaction. When you are satisfied, you have had enough. It is a complex construct with numerous definitions and associated ideas, and it has been investigated for many years in a variety of fields up to this point. Numerous theories, Management, social psychology, and academic writings concentrate on because most people spend their entire lives working, contentment comes from a knowledge of the things that boost satisfaction are crucial to enhancing one's wellbeing people who live in this aspect of the world. The role of employees and their commitment to the work has been one of the essential issues of concern for the business organizations in the current business environment, when company organizations

are experiencing tremendous competition and challenges. The level of employee satisfaction ultimately determines how successful they are. Job satisfaction is now one of the most important topics to investigate. Job satisfaction, employee satisfaction or work satisfaction is a measure of workers' contentedness with their job, whether they like the job or individual aspects or facets of jobs, such as nature of work or supervision.

STATEMENT OF THE PROBLEM

The aim of this study is to determine the most important factors that affect the job satisfaction of employees working in a shipping company and to investigate to what extent the shipping company satisfies its employees about these prominent factors. In this study, both general job satisfaction and segmented job satisfaction factors are being investigated in terms of demographic factors.

REVIEW OF LITERATURE

Vohra, Ozyesil & Esin (2023) conducted research on the impact of the working environment on job satisfaction of individuals. A sample of 210 staff members were selected through a simple random sample procedure and a self-administered investigation form was developed for gathering data. The data was interpreted by making use of regression analysis and Cronbach's Alpha. Correlation among the working environment and job happiness was seen to be significant and positive. The authors suggested that the employees must be encouraged to work together in order to accomplish the company's aims and aspirations.

Basalamah, & As'ad (2024) aimed to research the role of work motivation and work environment in improving job satisfaction. The authors selected a sample of 105 individuals by random sampling from the management lecturers at private universities in Makassar city. Multiple regression analysis was used to analyse the data collected. This study proved that both theoretically and previous empirical studies explain that increasing work motivation will increase the job satisfaction of lecturers at private universities in the city of Makassar.

OBJECTIVES OF THE STUDY

- To study the demographic profile of the respondents.
- To measure the satisfaction level of employees working in shipping company.
- To find out the factors influencing employee job satisfaction.

RESEARCH METHODOLOGY

Both primary and secondary data are extensively used in this study

COLLECTION OF DATA:

In special science there are two outstanding research methods

PRIMARY DATA

The primary data was collected through the questionnaire method from the employees.

SECONDARY DATA

The secondary data was collected from various journals, books, websites and newspaper in various topics.

SAMPLE SIZE:

As far as the study concerned, the researcher selected 96 respondents for this research.

SAMPLING TECHNIQUE:

Simple random sampling method is used while selecting the samples.

ANALYSIS AND INTERPRETATION OF DATA

DEMOGRAPHIC PROFILE OF THE RESPONDENTS

The following table shows the demographic profile of the employees who are working in the shipping company.

Table 1 Demographic Profile of the Consumers

Category	Options	No of respondents	Percentage
Age	Below 25	15	16
	25-40	27	28
	40-55	24	25
	Above 55	30	31
	Total	96	100
Gender	Male	62	64.6
	Female	34	35.4
	Total	96	100
Marital Status	Married	77	80.20
	Unmarried	19	19.8
	Total	96	100
Size of family	Below 3 members	16	17
	3-5 members	31	32
	Above 5 members	49	51
Type of family	Nuclear	55	57.3
	Joint	41	42.7
	Total	96	100
Monthly income	Below 10,000	17	18
	10,000-20,000	47	49
	Above 20,000	32	33
	Total	96	100

Source: primary data

From the above table, it shows that 31 per cent respondents were from the age group of above 55 years. Gender of the weavers indicates 64.6 per cents are females. Majority of the respondents were married which constitute 80.2 per cent. Most of the respondents family size is above 3-5 members which constitutes 51 per cent. 55 per cent were belongs to nuclear family. The income of majority (49 per cent) of the respondent's range between 10,000-20,000 per month.

Table 2 Job Satisfaction Measures

Job satisfaction measures	Mean Score	Rank
The way company policies are put into practice	38.2	VIII
The praise I get for doing a good job	84.3	I

The competence of my supervisor in making decisions	79.6	II
The chances of advancement on this job	45.1	VII
The chance to do something that makes use of my own ability	64.9	IV
The freedom to use my own judgment	60.1	V
The chance to try my own methods of doing the job	72.2	III
The way my co-workers get along with each other	49.3	VI
The feeling of accomplishment I get from the job	37.5	IX

Source: Primary Data

The table 2 shows that Job satisfaction measures. In that–The praise I get for doing a good job with the mean score of 84.3 contributed first rank,–The competence of my supervisor in making decisions with the mean score of 79.6 contributed second rank, The chance to try my own methods of doing the job with the mean score of 72.2 contributed third rank. .Fourth rank is for–the chance to do something that makes use of my own ability with a mean score of 64.9. Fifth rank is for–The freedom to use my own judgment with a mean score if 60.1. Sixth rank is for–The way my co-workers get along with each other with a mean score of 49.3. Seventh rank is –The chances of advancement on this job with a mean score of 45.1. Eighth rank is for –The way company policies are put into practice with a mean score of 38.2 and least rank is for–The feeling of accomplishment I get from the job with a mean score of 37.5 respectively.

Table 3 Factors Influencing Employee Job Satisfaction

Factors influencing employee jobsatisfaction	Meanscore	SD	Rank
Work-life balance	4.88	.478	I
Health and safety	4.50	.895	VII
work itself	4.49	1.078	VIII
Recognition	4.57	.779	V
Supervisor	4.86	.429	II
Pay scale	4.81	.617	III

Working conditions	4.64	1.011	IV
promotional opportunities	4.51	1.004	V1

Source: Computed Data

From the above table 3 reveals the Factors influencing employee job satisfaction. Work-life balance (4.88) has the highest mean followed by supervisor (4.86), Pay scale (4.81), Working conditions (4.64), Recognition (4.57), Promotional opportunities (4.51), Health and safety (4.50) and work itself (4.49).

FINDINGS

- It shows that 31 per cent respondents were from the age group of above 55 years.
- It is revealed that gender of the weavers indicates 64.6 per cents are females.
- Majority of the respondents were married which constitute 80.2 per cent.
- Most of the respondent's family size is above 3-5 members which constitutes 51 percent.
- Majority of the respondents were belongs to nuclear family which constitutes 55 per cent.
- Most of the respondents have an income level between 10,000-20,000.
- Job satisfaction measures. In that –The praise I get for doing a good job with the mean score of 84.3 contributed first rank and least rank is for –The feeling of accomplishment I get from the job with a mean score of 37.5 respectively.
- Factors influencing employee job satisfaction. Work-life balance (4.88) has the highest mean followed by supervisor (4.86), Pay scale (4.81), Working conditions (4.64), Recognition (4.57), Promotional opportunities (4.51), Health and safety (4.50) and work itself (4.49).

SUGGESTIONS

The researchers have given the following suggestions for further improvement in the study area.

- In order to fulfill its vision, goal, and objectives and keep its financial stability, the shipping company needs to put more effort into raising employee job satisfaction levels.
- It is assumed that there is a substantial positive association between job satisfaction and performance. As a result, the shipping company must use job satisfaction as a powerful instrument to enhance both organizational and personnel performance wide spread.
- In order to succeed in the workplace, it is crucial to make consistent growth in the competitive field of shipping industry. This mostly depends on how well its employees perform. The organization needs to be more careful and cautious to the extent possible to ensure strong job performance. So that they are happy in their positions with the company.

CONCLUSION

The purpose of this study was to assess the job satisfaction on shipping employee in Chennai, a total of 96 employees with different sex, experience, job position and from different processes and regional offices of the shipping company were surveyed. In this study some variables like (pay, promotional opportunities, co-workers, supervisor and work itself, etc..) that affect job satisfaction were analysed. To analyse the data descriptive statistics like,

percentages, mean score were used. Over all in this study, the research revealed that the respondents are satisfied with their pay, relation with co-workers, with promotional opportunities, with their supervisor and the work itself.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

PROMOTING WOMEN-LED SUSTAINABLE BUSINESS MODELS THROUGH WATERSHED INNOVATIONS IN RURAL TIRUCHIRAPPALLI

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INTRODUCTION

Agriculture continues to be the backbone of the Indian rural economy, employing over half the population directly or indirectly. Within this landscape, rural women play a pivotal role, not only as agricultural labourers but also as knowledge holders, seed savers, livestock managers, and custodians of traditional farming wisdom. Despite their substantial contribution, they are often excluded from decision-making, and their access to resources such as land, water, credit, and technology remains significantly lower than that of men. This gender gap becomes even more critical when we examine the increasing environmental and climatic challenges facing rural India today.

The Tiruchirappalli district in the southern Indian state of Tamil Nadu exemplifies this dual challenge. The region experiences semi-arid climatic conditions, erratic rainfall, and frequent droughts, particularly in blocks like Musiri, Thottiyam, and Lalgudi. Agricultural productivity is often threatened due to water scarcity, land degradation, and poor irrigation infrastructure. Farmers in these areas largely depend on seasonal rainfall, making agriculture a risky and less profitable endeavor. Simultaneously, traditional water bodies such as tanks and ponds, once critical to the region's agrarian sustainability, have suffered from years of neglect and encroachment.

However, over the past two decades, innovations in watershed management have emerged as practical solutions to reverse this degradation. Watershed development involves a holistic approach to conserving soil and water in a defined drainage basin or micro-watershed.

Techniques such as rainwater harvesting, construction of check dams, percolation ponds, bonding, and soil moisture conservation practices have significantly improved water availability and land productivity in rain fed regions. These interventions have been further supported by government schemes such as the Integrated Watershed Management Programme (IWMP) and Pradhan Mantri Krishi Sinchayee Yojana (PMKSY).

WOMEN'S ROLE IN SUSTAINABLE DEVELOPMENT

Despite their invisibility in formal statistics, women form the invisible backbone of Indian agriculture. In rural Tamil Nadu, especially in Tiruchirappalli, women are actively engaged in sowing, weeding, harvesting, composting, fodder collection, and post-harvest management. They are also primary users of domestic and farm water, making them inherently aware of the importance of conserving water resources. Yet, watershed development projects and agricultural modernization efforts have often been gender-neutral in design but gender-biased in impact largely ignoring women's specific needs, perspectives, and contributions.

This oversight results in the underutilization of women's potential in achieving long-term agricultural sustainability. Research by institutions such as the Indian Council of Agricultural Research (ICAR) and M.S. Swaminathan Research Foundation (MSSRF) has repeatedly shown that when women are actively involved in natural resource management, project outcomes tend to be more effective and sustainable. Women's participation leads to better maintenance of water structures, equitable distribution of benefits, and stronger community ownership.

INTEGRATING WOMEN IN WATERSHED-BASED MICRO-ENTERPRISES

One promising avenue for ensuring both ecological sustainability and gender empowerment lies in linking watershed innovations with women-led micro-enterprises. The improved water availability resulting from watershed projects opens up new livelihood opportunities that women can harness. These include:

- **Organic Farming:** Women's traditional expertise in natural composting, seed selection, and pest control can be combined with organic certification and value chain integration to create viable agribusinesses.
- **Nursery Development:** Watershed zones often support reforestation or agro-forestry components. Women-led nurseries for fruit trees, timber species, or medicinal plants can supply these programs while generating income.
- **Dairy Units and Fodder Cultivation:** With improved irrigation and increased fodder availability, women can engage in small-scale dairy units, which are traditionally managed by them in many parts of Tamil Nadu.
- **Agro-processing:** Post-harvest value addition such as drying, grinding, and packaging can be built around crops grown in revitalized watershed areas, offering women group-based entrepreneurial opportunities.

Such micro-enterprises do not require significant capital investments but do need support in terms of training, credit, market linkages, and access to technology. Women's self-help groups (SHGs), already active in many parts of Tiruchirappalli under the Tamil Nadu Corporation for Development of Women (TNCDW) and National Rural Livelihoods Mission (NRLM), can act as institutional anchors for these business models.

ROLE OF TECHNOLOGY AND INNOVATION

To scale up these models, there is a pressing need to blend traditional agricultural

wisdom with modern technology. Smart technologies such as drip irrigation, sprinkler systems, and soil moisture sensors can significantly enhance water efficiency and crop yields in semi-arid zones. Simple mobile-based tools that offer weather forecasts, pest alerts, and market prices can empower women to make informed decisions. When these are made accessible in local languages and through community networks, women's uptake of such innovations increases. Moreover, by involving women in training programs for climate-smart agriculture, GIS mapping, and resource planning, we enable them to actively participate in decisions related to land and water management. This shifts their role from passive recipients to co-creators of sustainable development.

POLICY AND INSTITUTIONAL SUPPORT

The Government of India's push towards sustainable agriculture through innovation and technology, as articulated in programs like the Digital Agriculture Mission and Atma Nirbhar Bharat, provides a policy window to formalize such integrative approaches. However, it is crucial that these frameworks explicitly address gender dimensions and ensure that women farmers are not left behind in the transition to modern agricultural systems.

Local governance institutions such as Panchayati Raj bodies must also be sensitized and equipped to recognize women's leadership in watershed committees, farmer producer organizations (FPOs), and village-level agricultural planning. Public-private partnerships, too, can play a catalytic role by offering technology, inputs, and value chain access tailored for women-led enterprises.

The integration of traditional ecological knowledge with modern agricultural technologies, when done through a gender-inclusive approach, offers a powerful pathway toward sustainable and equitable rural development. In regions like Tiruchirappalli, where water stress intersects with economic vulnerability, watershed innovations can act as a foundation for both ecological regeneration and livelihood diversification. When women are empowered to lead this transformation through training, technology, and institutional support they become not just beneficiaries but change agents in their communities.

Harnessing their potential is not only a matter of social justice but also a strategic imperative for achieving India's broader goals of climate resilience, food security, and inclusive economic growth. The challenge lies in bridging the gap between policy intent and grassroots implementation a challenge that calls for coordinated action across sectors, institutions, and communities.

REVIEW OF LITERATURE

Several studies underscore the role of watershed management in improving rural livelihoods. According to the **National Bank for Agriculture and Rural Development** (NABARD, 2021), watershed projects have led to increased groundwater recharge, enhanced crop productivity, and reduced migration in rural areas. A report by the Indian Council of Agricultural Research (ICAR, 2022) found that gender-inclusive watershed programs yielded better outcomes in community participation and sustainability.

Further, the **Ministry of Rural Development (MoRD, 2019)** highlighted that women's self-help groups (SHGs) trained in soil and water conservation developed successful micro-enterprises, particularly in regions like Karnataka and Maharashtra. However, limited evidence exists for similar integration in Tiruchirappalli, despite its conducive geography and active women's SHGs.

International Water Management Institute (IWMI, 2020): A study by IWMI on gender and water resource management in South Asia found that women's participation in water user associations significantly improved the outcomes of watershed and irrigation projects. The study emphasized that where women had decision-making roles, there was:

- Better prioritization of domestic and agricultural water use.
- More equitable distribution of resources.
- Enhanced adoption of soil moisture conservation and drip irrigation techniques.

The report stressed that capacity-building for women, combined with gender-sensitive planning, leads to more sustainable and equitable watershed outcomes. This has direct implications for regions like Tiruchirappalli, where women's SHGs are already active and can be further engaged in formal watershed governance structures.

Planning Commission of India (2014) – Evaluation of IWMP (Integrated Watershed Management Programme): An evaluation conducted across multiple states under the Integrated Watershed Management Programme found that projects which mainstreamed gender concerns such as allocating funds specifically for women-led activities, and including women in watershed committees experienced:

- Higher livelihood diversification, including agro-processing and livestock-based microenterprises.
- Better natural resource management outcomes, such as reduced soil erosion and increased vegetation cover.
- Greater community ownership and reduced project dependence on external agencies.
- The study concluded that gender mainstreaming in watershed projects is not optional but essential for maximizing socio-economic and ecological benefits.

OBJECTIVES

- Examine existing secondary data on watershed development and women's entrepreneurship in Tiruchirappalli.
- Identify potential micro-enterprise models that align with watershed innovations.
- Explore how these models can promote women-led sustainable business development.
- Provide policy suggestions for scaling such models.

METHODOLOGY

This study uses secondary data from:

Government Reports: Ministry of Jal Shakti, MoRD, and Tamil Nadu Department of Rural Development and Panchayat Raj.

Research Publications: ICAR journals, NABARD working papers, and academic articles.

Case Studies: Documented practices from NGOs like DHAN Foundation and MSSRF (M.S. Swaminathan Research Foundation), which operate in Tamil Nadu.

SHG Data: Reports from Tamil Nadu Corporation for Development of Women (TNCDW) and National Rural Livelihoods Mission (NRLM).

The analysis involves qualitative synthesis and cross-comparison of program outcomes, women participation rates, and enterprise performance in watershed-managed zones.

FINDINGS

Watershed Development in Tiruchirappalli- Secondary sources confirm that areas like Musiri, Thuraiyur, and Thottiyam blocks have undergone watershed treatment under IWMP (Integrated

Watershed Management Programme). Key outcomes include:

- 20–30% increase in groundwater levels.
- Improved irrigation coverage.
- Diversification from single-crop to multi-crop systems.

ROLE OF WOMEN

Women participated in SHG activities and soil conservation work but were mostly in unpaid roles. However, some NGOs facilitated SHG-linked enterprises:

- **Organic vegetable farming** using bio-compost from watershed zones.
- **Nurseries** for drought-resistant saplings linked to afforestation schemes.
- **Dairy units** supported by improved fodder cultivation due to enhanced water availability.
- **Barriers Identified**
 - Lack of technical training in watershed technologies.
 - Inadequate access to credit for enterprise development.
 - Low representation of women in local watershed committees.

SUGGESTIONS

1. **Capacity Building**-Training women in sustainable farming, water budgeting, and post-harvest technologies can increase enterprise viability.
2. **SHG Integration with Watershed Committees**-Including SHGs in decision-making can ensure that women's needs are reflected in watershed planning.
3. **Financial Inclusion**- Linking women entrepreneurs to micro-finance and government schemes like PMEGP and NRLM will ease credit access.
4. **Promotion of Convergence Models**-Integrating watershed projects with rural enterprise schemes can yield better results (e.g., convergence of IWMP with DAY-NRLM).
5. **Technology Use**- Mobile-based apps for water resource tracking and market information can empower women to make informed decisions.

CONCLUSION

Women in rural Tiruchirappalli possess immense potential to emerge as key drivers of sustainable development, particularly through the effective use of watershed innovations. While physical infrastructure such as check dams, farm ponds, and rainwater harvesting systems has been developed under various government and community-led programs, these efforts often fall short without the active and empowered involvement of women. **To truly unlock their potential, there is a critical need for institutional support, ongoing capacity building, access to finance, and gender-inclusive planning frameworks.**

Currently, many women in these communities contribute significantly to agricultural labour and resource management but remain confined to subordinate roles. **Transforming them from passive labourers into active leaders of green micro-enterprises** such as organic farming, plant nurseries, dairy cooperatives, or herbal product ventures requires deliberate efforts in skill development, technology training, and market linkage facilitation.

By integrating women's participation into every stage of watershed project planning and execution, and by linking these interventions with income-generating opportunities, rural Tiruchirappalli can serve as a **model for inclusive and sustainable rural development.** This approach not only promotes environmental conservation and climate resilience but also fosters

economic independence and social empowerment for women. **When ecological sustainability and women's entrepreneurship are aligned, the result is a transformative pathway toward holistic and equitable rural progress.**

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

INTEGRATING TRADITIONAL WISDOM AND MODERN TECHNOLOGY FOR SUSTAINABLE AGRICULTURE: A GENDER- INCLUSIVE APPROACH

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INTRODUCTION

Agriculture in India has always been deeply rooted in indigenous knowledge systems, particularly in regions that experience erratic rainfall and resource scarcity. In **semi-arid and rain-fed areas**, such as those found in **Tiruchirappalli district** of Tamil Nadu, farmers have historically relied on time-tested traditional methods to cope with climate variability and resource limitations. These include **organic composting using farmyard manure or “panchagavya”**, **seed preservation through natural methods**, and **water harvesting systems** such as **ooranis** (village ponds) and **stone bunds** for conserving runoff. These techniques reflect an intimate understanding of local ecosystems and are inherently low-cost, decentralized, and sustainable.

However, with increasing **climate unpredictability**, depletion of groundwater, soil erosion, and the pressures of a growing population, these traditional methods are no longer sufficient on their own. The **fragmentation of landholdings**, especially in rain-fed regions like Tiruchirappalli, has also made agriculture more vulnerable to climatic and economic shocks. These challenges necessitate a more resilient and efficient farming model that enhances both productivity and sustainability.

Enter **smart agriculture technologies** a suite of tools and practices designed to optimize resource use and increase efficiency. **Drip and sprinkler irrigation systems** minimize water wastage, particularly important in water-stressed regions. **Soil moisture sensors** and **weather-monitoring apps** help farmers make informed decisions about irrigation and crop scheduling. Additionally, **GIS mapping** allows for better land use planning, while **climate-resilient seeds** offer protection against extreme weather conditions. Together, these technologies have the potential to transform semi-arid agriculture by making it more **data-driven, resource-efficient, and climate-adaptive**.

Yet, the adoption of these technologies remains uneven especially when viewed through a **gender lens**. In many parts of rural India, including Tiruchirappalli, **women play a crucial but under recognized role** in agriculture. They are involved in nearly every phase of the farming

cycle—from land preparation and sowing to weeding, harvesting, and post-harvest processing. Despite this, they are often **excluded from training programs**, lack **direct access to digital tools**, and are **rarely part of decision-making bodies** like farmer producer organizations (FPOs) or watershed committees.

This exclusion not only undermines gender equity but also weakens the impact of agricultural development initiatives. A growing body of research, including studies by **M.S. Swaminathan Research Foundation (MSSRF)** and the **International Water Management Institute (IWMI)**, confirms that when women are actively involved in agricultural planning and technology use, **farm productivity and ecological sustainability improve significantly**.

Therefore, a **gender-inclusive approach that integrates traditional knowledge with modern agricultural technologies** is both a strategic and ethical imperative. Such integration involves more than just combining methods—it requires **capacity building, institutional inclusion**, and **tailored technological solutions** that consider the socio-cultural context of women farmers. By acknowledging women not just as laborers but as **innovators and decision-makers**, the agriculture sector in regions like Tiruchirappalli can become more **resilient, equitable, and sustainable** in the face of ongoing environmental and economic challenges.

REVIEW OF LITERATURE

Traditional Knowledge Systems in Agriculture

Traditional farming practices have been the backbone of India's agrarian culture for centuries. Rajasekaran et al. (1991) highlight that indigenous technical knowledge (ITK) systems such as seed treatment with neem, natural pest control using cow urine and turmeric, and mixed cropping—are low-cost, eco-friendly, and region-specific. These practices are not only sustainable but also resilient in the face of climatic uncertainties.

In Tamil Nadu, the practice of tank irrigation, bunding, and ooranis (village ponds) for water conservation has played a critical role in sustaining agriculture in semi-arid zones like Tiruchirappalli. However, with the advent of the Green Revolution, much of this traditional wisdom was marginalized in favor of chemical-intensive practices.

Smart Agriculture Technologies

Smart agriculture, also known as precision or digital farming, leverages technologies like drip and sprinkler irrigation, soil moisture sensors, remote sensing, and mobile-based advisory services. According to the Indian Agricultural Research Institute (IARI, 2021), farmers using soil moisture sensors and drip irrigation saw yield increases of 20–40% in pilot studies. Government schemes such as PMKSY, eNAM, and Digital Agriculture Mission have encouraged the dissemination of smart technologies, though adoption among smallholder and women farmers remains limited due to cost, digital literacy, and infrastructure gaps.

Gender Dynamics in Agriculture

The Food and Agriculture Organization (FAO, 2019) estimates that closing the gender gap in agriculture could increase global food production by 2.5–4%. In India, women account for 33% of cultivators and 47% of agricultural labourers (Census, 2011), yet they own only 13% of agricultural land.

Studies by MSSRF and the International Water Management Institute (IWMI) show that when women are included in water governance and farm planning, outcomes improve significantly in terms of productivity, conservation, and equity.

Watershed Development and Women's Participation

Watershed programs implemented under IWMP and NABARD's Watershed Development Fund have improved irrigation efficiency and enhanced livelihoods. Case studies from Andhra Pradesh and Karnataka demonstrate that when women's self-help groups (SHGs) were involved in watershed committees, there was better maintenance of water structures and greater ownership of natural resource assets.

However, most programs have not fully tapped into the potential of combining gender-inclusive planning, traditional practices, and modern tech, especially in regions like Tiruchirappalli.

OBJECTIVES

This study is guided by the following objectives:

Main Objective

To explore how the integration of traditional ecological knowledge and smart agriculture technologies in watershed areas can enhance agricultural sustainability and women's participation in rural Tamil Nadu, with a focus on Tiruchirappalli.

Specific Objectives

1. To identify traditional agricultural and water management practices used in Tiruchirappalli.
2. To review the adoption and impact of modern smart farming technologies in watershed zones.
3. To assess the extent of women's participation in technology-driven watershed and farming interventions.
4. To recommend strategies for creating gender-inclusive and ecologically sound farming models.

METHODOLOGY

Research Design

This study adopts a qualitative and exploratory design, utilizing **secondary data** sources for thematic analysis.

Data Sources

Government Reports: Ministry of Agriculture & Farmers Welfare, Ministry of Jal Shakti, Tamil Nadu State Agricultural Department Reports (2020–2023), NABARD's Watershed Development Evaluation Reports

Academic Journals: Indian Journal of Agricultural Economics, Journal of Rural Development, Current Science, Research reports from ICAR and IARI

NGO and Development Organization Reports: MSSRF: Women and Water Management Programs, DHAN Foundation: Community Watershed Interventions, FAO and IFPRI on women in agriculture

National Programs & Evaluations: PMKSY (Pradhan Mantri Krishi Sinchayee Yojana), MKSP (Mahila Kisan Sashaktikaran Pariyojana), NRLM and TNCDW Reports

Data Analysis

Collected data was categorized and analyzed under the following themes:

1. Traditional practices
2. Technological interventions
3. Gender involvement
4. Impact on productivity and sustainability

FINDINGS

i. Promote Hybrid Agricultural Models

Creating demonstration farms that blend indigenous agricultural wisdom with cutting-edge technologies is vital. These model farms should serve as living laboratories where farmers can witness first-hand the effectiveness of integrating practices such as organic composting, multi-cropping, and water-efficient irrigation with modern innovations like precision agriculture, remote sensing, and soil health monitoring.

Such initiatives can:

1. Encourage peer-to-peer learning, especially in rural communities where trust in local experiences often outweighs top-down advice.
2. Foster farmer-led experimentation, allowing adaptation to local agro-ecological conditions.
3. Create training hubs for extension officers and community resource persons to scale best practices.

ii. Build Women's Technical Capacity

To ensure meaningful participation of women in climate-resilient agriculture, targeted and exclusive capacity-building programs are essential. Leveraging the grassroots networks of Self-Help Groups (SHGs) and Farmer Producer Organizations (FPOs), training modules should include:

- **Smart farming tools:** Sensors, mobile-based farm management apps, and climate forecasting tools.
- **Water budgeting:** Skills to calculate household and community-level water needs and usage.
- **Digital literacy:** Basic smartphone use, accessing government schemes, online marketplaces, and e-extension services.

This approach recognizes that empowerment begins with knowledge and that women farmers, once technically enabled, can become catalysts of change in their communities.

iii. Integrate Watershed Planning with Gender Equity

Watershed development offers an entry point for addressing both environmental and gender challenges. A gender-sensitive watershed approach should include:

- **Gender audits** to identify gaps in women's participation and benefit-sharing.
- **Representation of women** in watershed user groups, management committees, and planning processes.
- **Gendered resource mapping** to ensure women's access to critical natural resources like water bodies, grazing lands, and forest products.
- This ensures that the design and implementation of watershed activities do not reinforce existing inequalities but instead promote inclusive and equitable access to resources.

iv. Enable Technology Access through Policy

Technology uptake in rural areas is often constrained by cost, lack of awareness, and gender bias in dissemination. Government support should include:

- **Subsidized, women-friendly technology kits**, including solar-powered irrigation pumps, moisture sensors, and small-scale processing units.
- Collaboration with NABARD, Tamil Nadu Corporation for Development of Women (TNCDW), and agricultural universities to design, promote, and deliver these kits through women-led cooperatives and SHGs.

- Introducing technology fairs, exposure visits, and mobile technology vans specifically tailored for women farmers.
- Such policy interventions ensure that women are not left behind in the digital and mechanized transformation of agriculture.

v.Strengthen Institutional Convergence

Many rural development programs operate in silos, leading to inefficiencies and duplication of efforts. For greater impact, promote convergence among:

- **Agriculture Department** (for technical knowledge and inputs)
- **Rural Development Department** (for infrastructure and livelihood support)
- **Women's Development Department** (for empowerment and gender mainstreaming)

Programs like Pradhan Mantri Krishi Sinchayee Yojana (PMKSY), National Rural Livelihood Mission (NRLM), and Mahila Kisan Sashaktikaran Pariyojana (MKSP) must be jointly planned and implemented, with a district-level convergence forum to oversee alignment, monitor outcomes, and address implementation challenges.

CONCLUSION: A Path toward Equitable and Resilient Agriculture

In climate-sensitive districts like Tiruchirappalli, where the health of agriculture is directly tied to rural livelihoods, a business-as-usual approach is inadequate. The growing unpredictability of rainfall, depleting groundwater, and soil degradation pose existential threats to small and marginal farmers.

The solution lies in redefining agriculture not merely as crop production, but as a resilient and inclusive ecosystem, blending:

- Traditional wisdom with modern science
- Gender inclusion with technological advancement
- Policy frameworks with community participation

Women, often perceived as secondary stakeholders in agriculture, are in fact central actors. They are knowledge holders, resource managers, and entrepreneurs-in-waiting. By empowering them with access to technology, participation in decision-making, and recognition of their contributions, we lay the foundation for a farming system that is not only productive, but equitable, sustainable, and future-ready.

The way forward requires:

- **Policy innovation** that is gender-intentional and climate-smart
- **Institutional coordination** across sectors and levels of governance
- **Community engagement** that respects local voices and encourages ownership

Ultimately, agricultural sustainability in regions like Tiruchirappalli will emerge not from isolated interventions, but from integrated, inclusive, and informed actions where women are seen not as beneficiaries, but as co-creators of a resilient rural future.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

CONSUMER PERCEPTION AND AWARENESS TOWARDS ELECTRIC BIKES IN MADURAI DISTRICT

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ABSTRACT

The rising environmental concerns and surging fuel prices have accelerated the global transition to electric vehicles (EVs), with electric two-wheelers emerging as a viable solution for sustainable urban mobility. In India, the adoption of electric bikes is growing, particularly in urban centers such as Madurai. This article explores consumer perception and awareness towards electric bikes in Madurai district. The study analyzes key factors influencing consumer behavior, assesses levels of awareness, and examines socio-economic influences on the decision to adopt e-bikes. Data collected from 100 respondents through primary surveys was analyzed using percentage analysis and chi-square tests. The findings provide valuable insights for manufacturers, policymakers, and urban planners in promoting electric mobility in Tier-2 cities like Madurai.

INTRODUCTION

India ranks as the second-largest producer and seller of two-wheelers globally, following Japan and China. The Indian two-wheeler industry has witnessed remarkable expansion in recent years, driven by increasing demand, improved technology, and rising fuel efficiency. However, with growing environmental degradation and surging fuel costs, the industry is undergoing a significant shift—towards electric mobility.

Electric bikes and scooters, which have already gained popularity in developed nations such as the United States, Japan, and China, are now making inroads into the Indian market. The advantages of electric two-wheelers—lower running costs, reduced pollution, and greater energy efficiency—make them an attractive alternative to conventional petrol-driven vehicles, especially in congested urban settings.

Historically, the concept of electric engines can be traced back to the 17th century, but their relevance has only gained momentum in the 21st century amid increasing environmental awareness. Today, consumer preferences are gradually shifting towards electric vehicles. This shift is not only environmentally beneficial but also creates new opportunities for manufacturers prepared to innovate and adapt.

SCOPE OF THE STUDY

This study focuses on understanding consumer perception and awareness regarding electric bikes

in the Madurai district of Tamil Nadu. The primary objective is to assess consumer buying behavior and the various factors influencing the decision to purchase electric two-wheelers. The study further explores consumer attitudes, awareness levels, and the motivations that lead individuals to opt for electric over conventional vehicles.

Given the environmental impact of petrol-powered vehicles, especially in urban areas, electric bikes offer a sustainable alternative. This study also seeks to identify the driving forces behind the growing use of e-bikes and the challenges hindering broader adoption.

STATEMENT OF THE PROBLEM

Electric bikes are gaining prominence worldwide as a sustainable, cost-effective, and eco-friendly mode of transportation. In Madurai, a city known for its cultural richness and bustling urban life, e-bikes are emerging as a favorable option for daily commuting. However, despite their growing popularity, limited data exists on consumer perception, awareness, user satisfaction, and adoption challenges in the local context.

This study seeks to fill this knowledge gap by examining the motivations, preferences, and concerns of electric bike users in Madurai. By analyzing user experiences, the research identifies key barriers to adoption and proposes actionable insights for policymakers, urban planners, and manufacturers to improve e-bike infrastructure and promote sustainable transportation in the region.

OBJECTIVES OF THE STUDY

- To understand consumer perceptions of electric bikes.
- To assess the awareness levels and the factors influencing buying behavior toward electric bikes.

METHODOLOGY

The study employed a **quantitative research methodology** to collect and analyze primary data from respondents in Madurai city. A **non-probability convenience sampling technique** was used to ensure easy and efficient data collection from individuals with knowledge or interest in electric bikes.

SAMPLING DESIGN

- **Sample Size:** 100 respondents
- **Sampling Area:** Various localities across Madurai district
- **Sampling Method:** Non-probability convenience sampling

DATA COLLECTION

- **Primary Data:** Gathered through structured interview schedules with selected respondents.
- **Secondary Data:** Sourced from published reports, academic articles, and online resources relevant to the electric vehicle industry.

TOOLS FOR ANALYSIS

The collected data was analyzed using:

- **Percentage Analysis:** To understand the distribution and trends across demographic variables.
- **Chi-Square Test:** To examine the association between socio-economic factors and consumer preferences or awareness levels.

The findings were tabulated and interpreted to derive conclusions about market trends and consumer behavior.

REVIEW OF LITERATURE

Bhupendra kumar verma [2011] in his paper states that on the basis of this study, the following suggestions can be made to help in sales of electric bike more effectively. There is a need to bring more awareness of various other features of electric bike to a consumer's mind by providing them vouchers and literature in different regional languages. There should be free, fair, justified and honest competition among the various electric bike companies.

Hatwar, N; Bisen, A; Dodke, H; Junghare, A; Khanapurkar, M. [2013] Projected a new approach in the design of e-bike which consists of a hybrid system of battery and super capacitor for

increasing speed, and avoid the complaints of long charging time and short lifespan of battery.

Abdullah et al.[2013] has confirmed that the customer preference and their order of importance, price, quality of service, branding are considered to be the important customer dimensions in automobile industry. Knowing these dimensions relative influence may result in better allocation of resources for effective vehicle industry.

Fishman and Cherry[2016] Discovered numerous findings on different subjects. It was found that core motivation for the use of e-bikes is now the ability to maintain speed is achieved with minimum efforts while using e-bikes in chilly areas and in hot conditions. In addition, veterans were attracted to e-bikes, as they find a standard bike too physically taxing to minimize sedentary lifestyle illnesses, e-bikes have been used. Since e-bike users tend to ride more often and for longer durations than normal bicycle riders, e-bikes may contribute to increasing the overall levels of physical activities of riders. E-bike users were found to have higher perceived safety levels in most of the Chinese and north American studies.

ANALYSIS AND INTERPRETATION

SPECIFIC BENEFITS OF ELECTRIC BIKE AWARENESS

Awareness of the specific benefits of electric bikes can play a major role in shaping consumer preferences. Respondents may be aware of various benefits such as cost savings, environmental friendliness, health benefits, and convenience. The classification of respondents based on the specific benefits they are aware of is shown in Table

Table No:1

Specific Benefits of Electric Bike Awareness

S. No	Specific benefits	No .of. Respondents	Percentage
1	Eco friendly	50	50
2	Cost effective	26	26
3	Easy to use	14	14
4	Healthy benefits	10	10
	Total	100	100

The above Table shows that 50 per cent consider e-bikes eco friendly, 26 per cent are cost effective, while 14 per cent consider easy to use and 10 per cent believe healthy benefits. It is inferred that majority of respondents suggest that eco friendly is the specific benefits of e-bikes.

AGE AND LEVEL OF OPINION ON E-BIKES

Age is one of the important socio-economic variables in determining the opinion and their level of opinion on e-bikes in the study area. The age and their level of opinion on e-bikes shown in Table .

Table No:2

Age and Level of Opinion on E-bikes

Sl. No	Age	Level of Opinion			Total
		Low	Medium	High	
1	Below 35 Years	8 (8%)	40 (40%)	12 (12%)	60 (60%)
2	Above 35 Years	10 (10%)	24 (24%)	6 (6%)	40 (40%)
	Total	18 (18%)	64 (64%)	18 (18%)	100 (100%)

It is observed from the above Table that out of 100 respondents with medium level opinion 64 individuals, 40 percentages of the respondents belong to the age group below 35 years, 24 percentages of the respondents belong to the age group above 35 years. Out of 18 individuals having low level opinion, 8 percentages of the respondents belong to the age group below 35 years, 10 percentages of the respondents belong to the age group above 35 years. Further, with high level opinion, out of 18 respondents, 12 percentages of the respondents belong to the age group below 35 years, 6 percentages of the respondents belong to the age group above 35 years.

To test the relationship between the Age and the opinion of the respondents towards the level of opinion on family e-bikes, the following null hypothesis is formulated.

“There is no significant difference between the age of the respondents and the level of opinion on e-bikes”.

The Chi-Square test was applied and the computed results are given in Table

Table No:3

Age and Level of Opinion on E-bikes – Chi-Square Test

S.NO	CELL	O	E	O-E	(O-E) ²	(O-E) ² /E
1.	R1C1	8	5.4	-1.4	1.96	0.36
2.	R2C1	10	3.6	1.4	1.96	0.54
3.	R1C2	40	19.2	0.8	0.64	0.03
4.	R2C2	24	12.8	-0.8	0.64	0.05
5.	R1C3	12	5.4	0.6	0.36	0.06
6.	R2C3	6	3.6	-0.6	0.36	0.1
					Total	1.14

Degrees of Freedom = (c-1) (r-1)

= (3-1) (2-1)

= 2

Calculated Value of X^2 = 1.14 Table Value of X^2 0.05 = 5.99

Since the calculated value of 1.14 is less than the table value both at five per cent of significance, the null hypotheses is accepted. Hence, it is concluded that there is no significant difference between the age of the respondents and their level of opinion of factors influencing E-bikes in the study area.

CONCLUSION

Electric bikes represent a promising alternative to conventional vehicles, offering economic and environmental benefits to urban commuters. This study in Madurai district highlights that consumer awareness and perception are steadily evolving, driven by concerns over pollution, cost savings, and technological advancements. However, barriers such as lack of infrastructure, limited product knowledge, and performance concerns still need to be addressed.

The insights derived from this study can serve as a valuable resource for electric bike manufacturers, city planners, and policymakers. By improving infrastructure, enhancing product offerings, and conducting awareness campaigns, stakeholders can accelerate the adoption of electric bikes in Madurai and similar urban centers across India. Hence the researcher is concluded the profile of the respondents and their perception and awareness towards e-bikes with the help of the tables and charts, this is details are analysis with the help of percentage analysis, Chi-Square Methods.

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Available in online @ www.iaraindia.com

RESEARCH EXPLORER-International Journal on Economics and Business Management

ISSN: 2250-1940 (P) 2349-1647 (O)

Impact Factor: 3.655(CIF), 2.78(IRJIF), 2.77(NAAS)

Volume XIV, Issue 47

April - June 2025

Formally UGC Approved Journal (63185), © Author

TECHNOLOGICAL ASPECTS OF INDO-AFRICAN COUNTRIES

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ABSTRACT

This abstract examines the various technological aspects of Indo-African relations, emphasizing key areas like digital infrastructure development, innovation partnerships, and knowledge exchange. India, with its expanding tech industry, offers solutions in areas like tele communications, IT, fintech, and health technologies, which are highly relevant to Africa's development needs. The growing emphasis on collaborative initiatives like the India-Africa Forum Summit (IAFS) has further strengthened these ties, especially in fostering sustainable development through tech-driven solutions. Africa can accelerate its digital transformation while creating opportunities for shared economic growth by utilising India's expertise in areas like mobile technology, e-commerce, and renewable energy. the scope of India co-operation with African countries was limited. With the rapid growth of the Indian economy in the last two decades, an increase in the role of information technology in India's growth story and given that Africa is now the fastest growing region in the world and rapidly innovating in its own right, the scope of technology co-operation between India and Africa has now widened. This study also looks at the potential and problems associated with these technical partnerships, such as resource availability, capacity building, and incorporating innovation into Africa's varied economies. The paper's ultimate goal is to shed light on how technology may promote mutual prosperity and act as a bridge for closer Indo-African ties.

Keywords: Capacity Building, Collaborative Initiatives, Digital Transformation

INDIA'S TECHNOLOGICAL LANDSCAPE

Over the past few decades, India has transformed into a global technology hub. The country's technology industry is projected to surpass \$245 billion in 2023, reflecting an annual growth rate of 8.4%. This sector contributes over 13% to India's GDP, underscoring its pivotal role in the national economy. Key drivers of this growth include a vast pool of skilled professionals, with India's universities producing the second-largest number of STEM graduates globally, and strategic government initiatives aimed at enhancing the research and development. Emerging technologies such as artificial intelligence, the Internet of Things, 5G, and big data analytics are at the forefront of India's digital transformation. These advancements are poised to reshape various sectors, including agriculture, healthcare, and education, propelling the nation towards its goal of becoming a leader in the intelligent age.

TECHNOLOGICAL DEVELOPMENTS IN AFRICAN COUNTRIES

Africa's engagement with technology is multifaceted, with innovations tailored to address the

continent's unique challenges and opportunities. The proliferation of digital technologies has led to improvements in government services, economic activities, and social interactions. For instance, the adoption of mobile banking has significantly enhanced financial inclusion, while e-health initiatives are expanding access to medical services across remote regions.

Despite these advancements, Africa accounts for less than 1% of global research and development spending, and only 0.5% of the world's scientific researchers are based in sub-Saharan Africa. This disparity highlights the need for increased investment in education and infrastructure to fully harness the continent's technological potential.

Regional collaborations and embracing technological diversity are viewed as essential strategies for driving industrialization and sustainable development across African nations. Initiatives aimed at enhancing digital literacy and expanding internet access are pivotal in bridging the technological gap and fostering inclusive growth. In summary, both India and African countries are actively integrating technology into their development agendas. India focus on advancing its digital infrastructure and innovation ecosystem positions it as a key player in the global technology arena. Meanwhile, African nations are leveraging technology to address local challenges and stimulate economic growth, with an increasing emphasis on regional cooperation and capacity building to enhance their technological capabilities

REVIEW OF LITERATURE

Arun Mohan Sukumar's "Midnight's Machines: A Political History of Technology in India" Arvind Sivaramakrishnan's review of Arun Mohan Sukumar's book delves into India's complex relationship with technology, tracing its evolution from the post-independence era to modern times. The book categorizes India's technological journey into distinct phases—Innocence, Doubt, Struggle, and Rediscovery—each reflecting the nation's shifting attitudes and policies towards technological adoption and innovation. Sukumar examines various technological endeavors, including the ambitious nuclear program and the embrace of computer technology, providing a nuanced perspective on how political and social factors have influenced technological progress in India.

Rajiv Bhatia's "India-Africa Relations: Changing Horizons" In her review, Shrabana Barua highlights Rajiv Bhatia's comprehensive analysis of the multifaceted relationship between India and African countries, with a particular focus on technological collaborations. Bhatia discusses initiatives like the Pan-African e-Network, which aims to enhance connectivity and knowledge sharing between India and African nations. The book also addresses the importance of aligning technological partnerships with Africa's development goals, emphasizing the need for India to engage thoughtfully and strategically to foster sustainable growth and mutual benefit.

Binyavanga Wainaina's Perspectives on African Technological Narratives Binyavanga Wainaina, though not directly focused on technology, offers critical insights into the portrayal of African societies, which can influence perceptions of technological development. His essay "How to Write About Africa" deconstructs stereotypes and encourages a more nuanced understanding of the continent's complexities, including its technological aspirations and challenges. Wainaina's work calls for authentic storytelling that acknowledges Africa's diverse experiences, which is essential for framing its technological narratives accurately.

Nandan Nilekani's Initiatives in India's Technological Sphere, Nandan Nilekani's efforts, such as the launch of Adbhut India, reflect a strategic approach to leveraging technology for national development. His focus on creating public infrastructure for artificial intelligence (AI) tailored to India's linguistic and cultural contexts aims to ensure equitable access and address unique challenges. Nilekani's initiatives underscore the importance of aligning technological advancements with the socio-cultural fabric of the nation to maximize their impact. These reviews collectively shed light on the intricate interplay between technology, politics, and societal development in India and African countries, emphasizing the need for contextually relevant and culturally sensitive technological strategies.

Rajaram and Pasupathi (2025) India and Africa trade has been growing faster than world output indicating that the international market is expanding faster than the domestic markets. There are indeed many Indian firms too whose India and Africa business is growing rapidly then the domestic business. This article examine changes in the pattern of India-Africa trade visible import and export from 2017-18 to 2022-23.

Muthukumar and Surya (2025) In conclusion, the bilateral trade relationship between India and Sub-Saharan Africa has evolved significantly over the past five years, with India's exports demonstrating remarkable growth, particularly surging to \$42.85 billion in 2022-2023. This indicates India's commitment to strengthening its economic ties and tapping into the diverse markets of Sub-Saharan Africa. The shift to a positive trade balance suggests an effective strategy in sourcing and exporting, allowing for a more favorable economic landscape. To sustain this momentum, strategic initiatives such as enhancing trade agreements, focusing on value-added products, and fostering capacity-building initiatives are essential. By leveraging these strategies, both India and Sub-Saharan Africa can unlock further potential, ensuring a balanced and mutually beneficial relationship.

Jeeva and Ravichandiran (2025) The trade relationship between India and Africa has witnessed substantial growth and diversification over the past few decades, driven by a shared vision of economic development, sustainable growth, and regional cooperation. As one of the largest emerging economies, India has become a key trading partner for Africa, offering a range of goods and services, from pharmaceuticals and machinery to technology and agricultural products. In return, Africa has provided India with vital resources, including mineral fuels, precious metals, and agricultural commodities. India's exports to Africa primarily include mineral fuels, pharmaceutical products, vehicles, and machinery, while imports from Africa are dominated by mineral fuels, precious metals, and copper. This paper is mainly focus on Region wise imports and Exports and top ten imports and exports of Africa.

Priyadharshini (2025) In recent times, African economics have been severely affected by the aftermath of the COVID-19 Pandemic and geopolitical uncertainties which have impacted global economies through various direct and indirect channels. African economic outlook 2024, average real GDP growth is estimated to have slowed from 4.1% in 2022 to 3.1% in 2023. The decline is attributed to a variety of factors. Including persistently high food and energy prices on account of the Russia-Ukraine war, weak global demand weighing down export performance, climate change and extreme weather events impacting agricultural productivity and power generation, and pockets of political instability and conflict in some African countries. India-Africa trade relations have immense potential for overcoming obstacles and sustainable growth. This initiative seeks to promote India-Africa trade, investment and economic cooperation in order to develop economic growth and development in both countries.

Remesh and Shanmugam (2025) The rising significance of Indo-African relations in the contemporary global context has drawn considerable attention from policymakers, academics, and business leaders alike. This paper explores the economic dimensions of cooperation between India and Africa, examining historical ties, trade relations, and investment patterns. With India's ambitious 'Act East' policy and Africa's burgeoning markets, the potential for economic collaboration has expanded significantly. This study analyzes the bilateral trade growth, focusing on key sectors, including agriculture, technology, and pharmaceuticals. The paper also addresses the challenges that hinder deeper economic integration, such as infrastructure deficits, policy inconsistencies, and the need for capacity building.

OBJECTIVES OF THE STUDY

- To Assess the Impact of Technology on Socio-Economic Development
- To Analyze Collaborative Initiatives between India and African nations.
- To Identify Challenges and Barriers in technological progress

- To Explore Policy and Institutional Frameworks in fostering technological development and innovation ecosystems.

HISTORICAL AND INSTITUTIONAL FOUNDATIONS

Since the 1960s, India has actively engaged in technological cooperation with African nations through initiatives like the Indian Technical and Economic Cooperation (ITEC) Programme. ITEC focuses on manpower development, with African countries being prominent beneficiaries. Additionally, the establishment of the Pan-African e-Network in 2009 exemplifies India's commitment to bridging the digital divide by providing tele-education and telemedicine service.

Sectoral Collaborations

The technological collaboration between India and African countries has significantly evolved, fostering mutual growth and development. This partnership emphasizes the exchange of knowledge, infrastructure development, and capacity building across various sectors.

Information and Communication Technology (ICT):

India's expertise in ICT has been pivotal in enhancing digital infrastructure in Africa. The Pan-African e-Network project, for instance, connects all 55 African Union member states, facilitating access to tele-education and telemedicine.

Renewable Energy:

Recognizing Africa's vast renewable energy potential, India has extended credit lines for constructing solar power plants in countries like Niger and hydroelectric projects in nations such as Burundi and the Democratic Republic of Congo. These initiatives aim to provide sustainable energy solutions and improve quality of life.

Agriculture:

Given the agro-climatic similarities between India and Africa, agricultural technology transfer has been a focal point. Institutions like the International Crops Research Institute for the Semi-Arid Tropics (ICRISAT) have established agribusiness incubators in several African countries, promoting agricultural innovation and productivity.

Capacity Building and Skill Development

India's provision of scholarships and training programs has significantly contributed to capacity building in African nations. The CV Raman Fellowship, initiated in 2010, allows African researchers to engage in collaborative research in Indian institutions, fostering knowledge exchange and skill development.

Infrastructure Development

The Asia-Africa Growth Corridor (AAGC), launched in 2017, is a strategic initiative aimed at enhancing connectivity and economic cooperation between Asia and Africa. This project focuses on developing quality infrastructure

Issues and Challenges in Technological Collaborations:

India and African nations have encountered several challenges in their technological collaborations, impacting the effectiveness and sustainability of their partnerships.

Key issues include:

1. Funding Constraints

Securing adequate financing remains a significant hurdle for many African tech startups. Approximately 90% of these startups struggle to obtain necessary capital, with only about 9% of total funding directed to early-stage companies. In 2019, African startups attracted merely \$1.43 billion in funding, a stark contrast to the higher investments seen in regions like North America and Asia. This funding gap hampers innovation and the growth potential of emerging businesses.

2. Infrastructure Deficiencies

The lack of reliable infrastructure poses significant challenges. Issues such as inconsistent energy supply, with companies facing high operational costs due to frequent outages, and unreliable internet connectivity, hinder the growth of tech enterprises. At the end of 2021, only

22% of Africa's population engaged with mobile internet services, despite the availability of modern 3G and 4G networks. These infrastructure gaps limit the scalability and efficiency of technological initiatives.

3. Regulatory Fragmentation

Navigating a complex web of regulations across different African countries can be daunting for tech entrepreneurs. The absence of a common currency and single market adds to the complexity, making cross-border operations challenging. This fragmentation can impede the growth of startups aiming for regional expansion and reduce the overall competitiveness of African tech enterprises.

4. Limited Access to Venture Capital

Access to venture capital is restricted, with only 8% of fintech startups reaching the Series B funding stage. This scarcity of funding options, coupled with a competitive market environment, often leads to the closure of startups that cannot secure necessary capital. The concentration of tech investments in countries like Nigeria, Egypt, Kenya, and South Africa further limits opportunities for startups in other regions.

5. Competition from Other Nations

India faces stiff competition from other emerging powers, notably China, in Africa. China's substantial investments in infrastructure, financial assistance, and resource extraction have significantly increased its influence across the continent. This competition challenges India's efforts to strengthen its technological partnerships in Africa.

6. Delayed Project Implementation

Timely execution of projects has been a concern, with instances of delayed completion affecting the impact of technological collaborations. Such delays can strain resources and diminish the intended benefits of these initiatives.

7. Political Instability

Political instability in certain African regions poses risks to technological collaborations. Recent events, such as coups in countries like Mali, Chad, Guinea, Sudan, and Burkina Faso, coupled with prevalent corruption, can disrupt ongoing projects and deter future investment.

8. Perception and Acceptance

Despite the potential benefits, there have been instances of resistance to foreign involvement. For example, the decision to jointly develop naval facilities in Assumption Island faced opposition within Seychelles, highlighting challenges in aligning interests and gaining local support for collaborative projects.

9. Instances of Xenophobia

Occurrences of violence against African nationals in India, particularly students, have raised concerns. Such incidents, rooted in xenophobia and racism, threaten to strain diplomatic relations and tarnish India's image as a partner in African development.

Addressing these challenges requires a comprehensive approach, including:

- **Enhanced Financing:** Developing innovative funding mechanisms and increasing investment in early-stage startups.
- **Infrastructure Development:** Investing in reliable energy and internet services to support tech growth.
- **Regulatory Harmonization:** Working towards unified regulations to facilitate cross-border tech initiatives.
- **Strategic Partnerships:** Collaborating with various international stakeholders to bolster technological capabilities.
- **Political Engagement:** Promoting political stability and addressing governance challenges to create a conducive environment for technological advancement.

By tackling these issues collaboratively, India and African nations can strengthen their

technological partnerships, driving sustainable development and economic growth across the continent.

CONCLUSION

In conclusion, the technological collaboration between India and African nations presents promising avenue for mutual growth and development. While significant strides have been made in sectors like ICT, renewable energy, and agriculture, challenges such as funding constraints, infrastructure deficiencies, and regulatory complexities continue to impede optimal progress. Addressing these issues necessitates a collaborative approach, emphasizing strategic investments, infrastructural enhancements, and policy harmonization. By leveraging their respective strengths and fostering deeper partnerships, India and African countries can unlock vast potential, paving the way for a prosperous and technologically advanced future.

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