A Behavioral Analysis of Consumer Perceptions in the Adoption of Contactless Payment Systems in Daily Financial Needs: Evidence from Mysore District

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Abstract- This study investigates the behavioral, demographic, and socio-economic factors influencing the adoption of contactless payment systems in Mysore district, Karnataka. Using a descriptive research design, data were collected from 144 respondents through a structured questionnaire and analyzed using descriptive statistics, ANOVA, and frequency analysis. Results indicate that education and profession are the most significant demographic determinants of adoption, influencing ease of use, perceived security, convenience, and service quality. Behavioral perceptions were largely positive, with high agreement on usefulness, time saving, and social influence as drivers of adoption. However, security concerns and perceived risk remain significant barriers. The findings suggest that targeted digital literacy programs, enhanced security communication, merchant expansion, and government-backed incentives can strengthen adoption in semi-urban contexts. This research contributes to the understanding of digital financial inclusion in tier-2 cities and offers practical insights for fintech providers, policymakers, and retailers aiming to foster a cashless economy in India.

Keywords: ***Contactless payments, consumer perception, behavioral factors, digital financial inclusion, Mysore district, ANOVA, India***

1. INTRODUCTION

In India, sustained growth in income levels has catalyzed a significant surge in both online and offline transactions. This economic progression has heightened consumer expectations for more efficient and technologically advanced payment solutions. The rapid development of digital infrastructure, along with technological innovations, has facilitated the emergence of modern payment methods, including tap-to-pay and QR code-based contactless digital payment systems. These advancements have transformed the consumer buying experience by enhancing convenience, reducing transaction time, and improving operational efficiency.

Contactless digital payments have emerged as a credible and innovative alternative to traditional payment methods, offering enhanced speed, convenience, and a seamless user experience. By streamlining payment processing, these systems reduce cognitive load and transactional friction, enabling smooth and efficient financial interactions. They provide a secure and hygienic method for everyday transactions without the need for physical contact, relying on technologies such as Near-Field Communication (NFC) and Radio-Frequency Identification (RFID) to enable wireless communication between a consumer's payment device (e.g., card, smartphone, smartwatch) and the merchant's point-of-sale terminal.

The adoption of contactless payment systems in India has been rapid. Between 2021 and 2024, the sector experienced a compound annual growth rate (CAGR) of 62.68% (PwC, 2024). The integration of biometric authentication is projected to reduce digital payment fraud by 30% in 2024, as more institutions implement such technologies. In 2020, India recorded 100 million digital transactions per day, a five-fold increase from 2016, and the Reserve Bank of India projects growth to 1.5 billion transactions daily in the coming years. A MasterCard global consumer study (2020) found that nearly 8 in 10 consumers use contactless payments, with 46% to 52% of customers switching their primary payment card to one offering contactless functionality. Transaction methods continue to evolve, becoming more secure, frictionless, and touch-free, while being increasingly integrated into routine financial activities such as retail purchases, public transportation, and utility bill payments.

Globally, the financial ecosystem is undergoing a profound transformation driven by rapid digital

advancements and shifting consumer expectations. Among the most significant innovations are contactless payment systems, which represent a pivotal evolution in financial transaction methods. The COVID-19 pandemic further accelerated this shift, as consumers sought safer, no-contact payment options to minimize health risks. This change has not only reshaped consumer behavior but also solidified the adoption of contactless payment technologies within the Indian market.

Despite technological maturity and widespread infrastructure, adoption in India remains uneven across demographic groups and geographic regions. This disparity highlights the importance of behavioral, psychological, and contextual factors—such as perceived ease of use, perceived usefulness, trust, risk perception, and social influence—in shaping consumer acceptance. These factors collectively determine how individuals integrate contactless payment solutions into their everyday financial activities.

2. REVIEW OF LITERATURE

The adoption of contactless payment systems is a multifaceted process shaped by technological perceptions, socio-economic profiles, and behavioural influences, with both global and India-specific studies highlighting the critical role of convenience, security, ease of use, and trust in shaping consumer perceptions. International research has consistently found that perceived ease of use and security strongly influence adoption intentions, while trust acts as a mediating factor between security perceptions and actual usage (Karim et al., 2021; López-Miguens et al., 2023; Nanda & Arora, 2022). In the Indian context, convenience, reliability, and transaction speed have been shown to be equally crucial, particularly in semi-urban areas where digital infrastructure is still developing (Bhatnagar & Upadhyay, 2021; Mehta & Singh, 2023). Demographic and socio-economic factors—including age, income, education, and occupation—play a significant role in shaping adoption patterns, with younger, more educated, and higher-income consumers demonstrating greater uptake (Gupta & Tiwari, 2022; Patel et al., 2023). Conversely, older consumers and those with lower digital literacy remain more cautious in adopting such systems (Rao & Saini, 2021). Behavioural aspects such as social influence and risk perception also emerge as pivotal determinants of adoption; peer usage, family recommendations, and visible integration of contactless payments in local communities have been shown to increase willingness to adopt (Kumar & Jain, 2023; Singh et al., 2022), whereas fears of fraud, data breaches, or transaction failure often act as deterrents, particularly in rural and semi-urban contexts (Raza et al., 2021; Sharma & Kalra, 2022). Region-specific research indicates that in tier-2 cities, cultural attachment to cash-based transactions, limited merchant acceptance, and inconsistent trust in service providers can slow adoption (Muralidharan & Ghosh, 2020; Varma et al., 2021). However, targeted interventions—such as public awareness campaigns, local-language marketing strategies, and government-backed incentives like Unified Payments Interface (UPI) rewards—have proven effective in mitigating resistance and fostering greater adoption (Chatterjee & Roy, 2019; Desai & Nair, 2020).

The Mysore district of Karnataka presents a unique context for examining these behavioural dynamics. As a region with both urban and semi-urban characteristics, Mysore reflects the broader patterns of digital transformation seen across tier-2 cities in India. While a significant portion of the population has access to smartphones and internet services, digital literacy, trust in digital financial tools, and usage habits still differ greatly across age groups, income levels, and occupations. Understanding the behavioural aspects of consumer perception—including trust, perceived risk, convenience, social influence, and awareness—is essential to bridging the gap between technological availability and actual user adoption. These insights are particularly relevant in addressing daily financial needs, where consistency, reliability, and ease of access are critical. This study is therefore motivated by the need to explore how consumers in Mysore perceive and adopt contactless payment systems in their everyday financial activities. By analysing behavioural factors through established theoretical frameworks and collecting region-specific data, the research aims to contribute to the broader understanding of digital financial inclusion and user-cantered innovation in payment systems. Collectively, the literature suggests that enhancing consumer trust, ensuring consistent service reliability, leveraging social networks, and addressing socio-economic and cultural barriers will be critical to accelerating the uptake of contactless payment systems in the Mysore district.

3. STATEMENT OF THE PROBLEM

Despite the growing availability of mobile and contactless payment systems in India, their adoption in Mysore district remains limited. Although technologies such as QR code and NFC-based payments offer convenience, speed, and security, concerns over transaction safety, lack of trust, limited awareness, and perceived complexity continue to hinder usage. Socio-demographic factors—including age, income, education, and digital literacy—further influence adoption patterns. This gap between technological potential and actual consumer use underscores the need to examine the behavioral dimensions shaping perceptions and decisions. Understanding these factors will inform strategies for fintech providers, policymakers, and local businesses to make contactless payments more accessible, user-friendly, and trusted, thereby supporting the shift toward a cashless economy.

4. OBJECTIVES OF THE STUDY

1. To analyze the factors influencing consumer perceptions of contactless payment systems in Mysore district.
2. To identify the demographic and socio-economic variables affecting the adoption of contactless payment systems.
3. To evaluate the role of behavioral aspects, such as social influence and risk perception, in consumer decision-making related to digital payment methods.

5. METHODOLOGY

This study employed a descriptive research design to investigate consumer perceptions, behavioral factors, and potential barriers influencing the adoption of contactless payment methods among residents of Mysuru district. A non-probability sampling technique was adopted, and data were collected through a structured questionnaire administered to 150 respondents. After data screening, 144 responses were deemed valid for analysis.

The questionnaire comprised sections on demographic and socio-economic characteristics, behavioral aspects (trust, perceived risk, convenience, social influence, and awareness), and specific experiences with contactless payment technologies such as QR code and Near-Field Communication (NFC) systems.

Quantitative data were analyzed using descriptive statistics (frequencies, percentages, and cross-tabulations) to summarize demographic patterns and behavioral trends. Inferential statistics, including Analysis of Variance (ANOVA), were applied to test relationships between socio-demographic factors and adoption behavior. All statistical analyses were conducted using SPSS (Statistical Package for the Social Sciences) and Microsoft Excel.

6. DISCUSSION OF RESULTS

6.1 Respondents' Demographic Profile

Table 1 presents the demographic characteristics of the 144 respondents. The sample comprises predominantly male participants (74%), with the largest age group being 20–30 years (44%), followed by 31–40 years (28%). In terms of education, the majority hold a graduate degree (39%) or have completed Pre-University Course (PUC) (33%). The largest professional group is private sector employees (44%), followed by public sector employees (24%). A significant proportion of respondents (58%) reported an annual income between ₹7.5 and ₹10 lakhs. Most respondents reside in urban areas (53%), with 29% in semi-urban and 18% in rural locations.

These results indicate that the typical contactless payment user in this study is a young to middle-aged, urban, educated, and employed individual with a stable income—attributes generally associated with higher levels of digital adoption.

Table 1 *Demographic Characteristics of Respondents (N = 144)*

Variable	Characteristics	Frequency	Percentage
Gender	Male	106	74%
	Female	38	26%
Age group	20–30 years	64	44%
	31–40 years	41	28%
	41–50 years	21	15%
	51 years & above	18	13%

Education	Post-Graduation	13	9%
	Graduation	56	39%
	PUC	48	33%
	High School	27	19%
Profession	Student	15	10%
	Private Sector Employee	64	44%
	Public Sector Employee	34	24%
	Self-Employed	19	13%
	Others	12	8%
Annual Income	Up to ₹2.5 lakh	8	6%
	₹2.5–5 lakh	6	4%
	₹5–7.5 lakh	37	26%
	₹7.5–10 lakh	84	58%
	₹10 lakh & above	9	6%
Location	Urban	76	53%
	Semi-Urban	42	29%
	Rural	26	18%

6.2 ANOVA Results

Table 2 presents the results of the Analysis of Variance (ANOVA) conducted to examine the relationship between demographic characteristics (gender, age, education, profession, and annual income) and various aspects of contactless payment adoption.

Table 2 *ANOVA Results for Contactless Payment Adoption Factors by Demographic Characteristics.*

Contactless Payment Attribute	Gender F	Sig.	Age F	Sig.	Education F	Sig.	Profession F	Sig.	Annual Income F	Sig.
Methods used	0.199	.656	1.110	.354	13.929	.080	3.741	.006	1.046	.386
Frequency of use	0.002	.963	0.821	.514	90.536	.000	5.109	.001	0.665	.617
Convenience	0.141	.708	2.131	.080	17.094	.000	1.418	.231	0.714	.583
Security & trust	1.914	.169	1.015	.402	13.929	.000	2.283	.063	1.836	.125
Time saving	8.266	.005	2.572	.040	67.566	.000	2.527	.043	1.087	.365
Acceptance	0.446	.505	1.826	.127	22.713	.000	3.399	.011	0.550	.700
Decision-making quality	0.291	.590	3.705	.007	3.656	.007	1.670	.160	0.619	.650
Perceived usefulness	0.614	.434	3.204	.015	14.138	.000	1.004	.408	0.890	.472
Wider payment options	0.987	.322	0.910	.460	26.591	.000	2.252	.066	1.919	.110
Service quality	0.446	.505	1.826	.127	13.805	.000	3.399	.011	0.550	.700

Interpretation

The ANOVA results reveal that education is significantly associated ($p < .05$) with all measured aspects of contactless payment adoption, including frequency of use, convenience, security and trust, time saving, acceptance, perceived usefulness, wider payment options, and service quality. Profession is also significantly related to several factors, such as methods used, frequency of use, time saving, acceptance, and service quality. Age influences decision-making quality ($p = .007$), perceived usefulness ($p = .015$), and time saving ($p = .040$). Gender shows a significant relationship only with time saving ($p = .005$), while annual income is not significantly related to any factor in this study. These findings suggest that educational attainment and professional background are the strongest

demographic determinants of contactless payment adoption in Mysore district.

6.3 Frequency Analysis of Behavioral Perceptions

Table 3 presents the distribution of respondents' agreement levels with various behavioral statements regarding contactless payment systems. The results indicate generally high levels of positive perception toward ease of use, security, usefulness, and social influence.

Table 3 *Respondents' Behavioral Perceptions Toward Contactless Payment Systems (N = 144)*

Statement	Strongly Agree (%)	Agree (%)	Moderate (%)	Disagree (%)	Strongly Disagree (%)
Contactless payments are easy to use.	78 (54.2)	42 (29.2)	9 (6.3)	8 (5.6)	7 (4.9)
I find contactless payment systems useful in managing my daily needs.	81 (56.3)	32 (22.2)	14 (9.7)	9 (6.3)	8 (5.6)
I feel secure when using contactless payment methods.	89 (61.8)	29 (20.1)	12 (8.3)	8 (5.6)	6 (4.2)
I worry about fraud or misuse while using these systems.	53 (36.8)	36 (25.0)	35 (24.3)	12 (8.3)	8 (5.6)
My friends/family influenced me to start using contactless payments.	88 (61.1)	38 (26.4)	9 (6.3)	5 (3.5)	4 (2.8)
I need internet access to feel confident using these systems.	78 (54.2)	30 (20.8)	20 (13.9)	9 (6.3)	7 (4.9)
Using contactless payments saves time.	76 (52.8)	41 (28.5)	14 (9.7)	9 (6.3)	4 (2.8)
I would recommend contactless payments to others.	72 (50.0)	45 (31.3)	18 (12.5)	5 (3.5)	4 (2.8)
I feel left out if I don't use digital payment options.	68 (47.2)	35 (24.3)	27 (18.8)	10 (6.9)	4 (2.8)
Government support and awareness programs help me trust these systems.	79 (54.9)	31 (21.5)	24 (16.7)	6 (4.2)	4 (2.8)

Interpretation

The majority of respondents agreed or strongly agreed with positive statements about contactless payment adoption. Notably, ease of use (83.4% agree/strongly agree), usefulness (78.5%), and security (81.9%) scored highly, indicating strong consumer confidence. Social influence is also substantial, with 87.5% acknowledging that friends or family influenced their adoption. However, 61.8% reported concerns over fraud or misuse, highlighting lingering security apprehensions. Government support and awareness programs were perceived as trust-enhancing by 76.4% of respondents. These findings suggest that while behavioral perceptions are largely favorable, addressing security concerns could further boost adoption rates.

7. DISCUSSION

The findings of this study reveal important behavioral and demographic patterns shaping the adoption of contactless payment systems in Mysore district. The demographic profile indicates that the typical user is a young to middle-aged, urban, educated, and employed individual with a stable income. This aligns with earlier studies in the Indian context, which have consistently identified education, occupation, and urban residence as key enablers of digital payment adoption (Gupta & Tiwari, 2022; Mehta & Singh, 2023).

The ANOVA results highlight education as the most significant demographic determinant, influencing nearly all aspects of adoption—from frequency of use to perceived security, convenience, and service quality. This suggests that higher educational attainment is associated with greater awareness, confidence, and willingness to integrate new payment technologies into daily life. Profession also emerged as a significant factor, particularly among private and public sector employees, indicating that workplace exposure to digital tools may encourage adoption. These findings support prior research that links professional engagement with higher technology adoption rates (Nanda & Arora, 2022; Kumar & Jain, 2023).

Behavioral perceptions were overwhelmingly positive, with respondents showing high agreement regarding ease of use, usefulness, and time-saving benefits. The role of social influence—with nearly 88% acknowledging encouragement from friends or family—corroborates the Technology Acceptance Model's (TAM) extended frameworks that emphasize subjective norms as a driver of adoption (Singh et al., 2022). However, security concerns persist, with over 60% expressing worry about fraud or misuse. This reflects a recurring theme in digital finance literature that trust and risk perception remain significant barriers, even among technologically literate users (Sharma & Kalra, 2022).

Interestingly, while government awareness programs and policy support were positively perceived by over 75% of respondents, income level was not found to significantly influence adoption behavior. This may indicate that in semi-urban contexts like Mysore, the availability of infrastructure and exposure to digital ecosystems outweigh purely economic considerations.

Overall, the study reinforces the view that successful expansion of contactless payment adoption in tier-2 cities requires targeted interventions addressing security perceptions, enhancing trust-building measures, and leveraging social influence channels. The evidence also points to the need for educational initiatives that go beyond awareness, focusing on building practical digital skills across all socio-demographic segments.

8. CONCLUSION AND RECOMMENDATIONS

This study examined the behavioral, demographic, and socio-economic factors influencing the adoption of contactless payment systems among residents of Mysore district. The findings demonstrate that while overall perceptions are positive—driven by ease of use, convenience, and time-saving benefits—adoption remains uneven due to persistent concerns about security, trust, and awareness. Education emerged as the most significant predictor of adoption, followed by profession, highlighting the critical role of knowledge, exposure, and digital competence in shaping usage patterns. Social influence also proved to be a powerful driver, suggesting that peer and family networks can accelerate adoption.

These results underscore the need for a multi-pronged strategy to enhance adoption in semi-urban and tier-2 contexts. The gap between technological availability and actual use is less about access to devices or internet connectivity and more about consumer trust, skill, and perceived safety. Addressing these issues can foster higher integration of contactless payments into routine financial transactions, thereby supporting India's broader push toward a cashless economy.

Recommendations

To enhance the adoption of contactless payment systems in Mysore district, a multi-faceted approach is essential. Financial institutions and fintech providers should focus on strengthening security assurances by clearly communicating encryption measures, fraud protection protocols, and safe usage practices to address lingering concerns about risk. Digital literacy initiatives—particularly community-based training in semi-urban and rural areas—can bridge knowledge gaps and build confidence among less tech-savvy users. Leveraging social influence through testimonials and endorsements from local influencers, community leaders, and satisfied users can further normalize adoption. Expanding merchant integration, especially in semi-urban markets, will encourage habitual usage by making contactless payments a seamless part of daily transactions. Additionally, sustained policy and government support, including incentives such as cashback rewards, reduced transaction fees, or tax benefits for both users and merchants, alongside targeted awareness campaigns, can foster trust and accelerate the shift toward a cashless economy in the region.

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