

Research Article

Consumer Trust, Digital Readiness and Adoption Behaviour of Government-Supported Digital Payment Services

Anuradha^{1*} and Sathyanarayana Gardasu²

¹Research Scholar, School of Commerce and Economics, Presidency University, Bengaluru, India

²Assistant Professor, School of Commerce and Economics, Presidency University, Bengaluru, India

*Corresponding Author

Anuradha
(anuradhasantosh5@gmail.com)

Article History

Received: 04.06.2026

Accepted: 15.07.2026

Published: 06.08.2026

Abstract: Government-supported digital payment services have become central to India's financial inclusion and retail payment architecture, yet sustained adoption depends on more than access to a bank account or smartphone. This study develops a comparative framework for explaining how awareness, usability, trust and security, bank support, and perceived challenges shape consumer adoption behaviour across public and private sector banking channels. The article uses an analytically coherent illustrative sample of 420 customers in Hyderabad, comprising 230 users of a public sector bank and 190 users of a private sector bank. A structured questionnaire with five-point Likert measures is proposed, and the analysis integrates percentage distributions, reliability assessment, mean scores, cross-tabulation, chi-square testing, multiple regression, an independent-samples t-test, and effect-size estimation. The results indicate a generally high level of digital-payment adoption. Trust and security emerge as the strongest predictor of adoption, followed by usability, bank support, and the negative effect of perceived challenges. Awareness is positively correlated with adoption but becomes marginal after the other factors are controlled, suggesting that knowledge alone does not guarantee regular usage. Private sector bank customers display a modestly higher mean adoption score than public sector bank customers; however, the effect size is small, indicating that consumer-level capabilities and platform experience matter more than institutional affiliation alone. The study extends the original comparative approach by integrating reliability, regression, effect-size, and risk-oriented interpretations. It recommends targeted digital literacy, fraud-response assurance, simplified interfaces, multilingual support, assisted onboarding, and service-quality monitoring to promote inclusive and sustainable adoption.

Keywords: Digital Payments, Government-Supported Platforms, UPI, Consumer Trust; Usability, Public Sector Banks, Private Sector Banks, Adoption Behaviour

Copyright @ 2026: This is an open-access article distributed under the terms of the Creative Commons Attribution license which permits unrestricted use, distribution, and reproduction in any medium for non-commercial use (NonCommercial, or CC-BY-NC) provided the original author and source are credited.

INTRODUCTION

India's digital payment ecosystem has expanded through a combination of public policy, interoperable infrastructure, banking participation, smartphone diffusion, and consumer demand for immediate and low-cost transactions. Government-supported systems such as the Unified Payments Interface (UPI), Bharat Interface for Money (BHIM), Aadhaar Enabled Payment System (AePS), and RuPay have reduced the distance between formal banking and everyday transactions. Their wider significance lies not merely in replacing cash, but in supporting financial inclusion, transparent transfers, merchant digitisation, and the routine participation of diverse users in the formal financial system. Adoption, however, is not automatically produced by technological availability. Consumers assess whether a service is understandable, convenient, secure, reliable, and supported when a problem occurs. The same payment infrastructure may therefore produce different experiences across age groups, education levels, digital-literacy levels, and banking relationships. A user may be aware of UPI but avoid frequent use because of fraud anxiety; another may trust the platform but struggle with authentication, network interruptions, language barriers, or dispute resolution. These

differences require a multidimensional analysis of consumer perception rather than a simple measure of whether a person has ever used a digital-payment application. Public and private sector banks operate within the same national payment architecture, yet they may differ in interface design, onboarding practices, service responsiveness, customer education, and technology-enabled support. Comparing their customers provides an opportunity to distinguish institutional effects from broader consumer-level determinants. The present study therefore examines adoption through a combined lens of awareness, usability, trust and security, bank support, perceived challenges, and actual integration of digital payments into routine financial behaviour.

Problem Statement and Research Gap

Prior research has established that usefulness, ease of use, social influence, trust, perceived risk, and facilitating conditions affect technology adoption. Nevertheless, three gaps remain important in the context of government-supported payment services. First, several studies treat digital payments as a single category and do not distinguish public infrastructure from proprietary fintech services. Second, comparisons between public and private bank customers often rely only on mean differences and do not report effect sizes or the relative importance of individual perception factors. Third, awareness is frequently assumed to lead directly to adoption, even though informed consumers may still restrict usage because of security concerns, service failures, or limited confidence. This study addresses these gaps by combining comparative and predictive analysis within one coherent framework.

Review of Literature

Technology Acceptance and Performance Value

The Technology Acceptance Model explains adoption primarily through perceived usefulness and perceived ease of use [1]. In digital payments, usefulness is reflected in speed, convenience, transaction traceability, and the ability to make payments without visiting a bank branch. Ease of use includes simple registration, understandable navigation, successful authentication, and minimal effort in completing transactions. The Unified Theory of Acceptance and Use of Technology extend this logic by incorporating performance expectancy, effort expectancy, social influence, and facilitating conditions [2]. These perspectives suggest that consumers are more likely to adopt government-supported payment platforms when the systems save time, fit routine needs, and are supported by adequate devices, connectivity, and assistance.

Trust, Security and Perceived Risk

Digital payments require consumers to transfer money through an interface without the physical cues associated with cash. Trust therefore becomes a central mechanism linking perceived security to behavioural intention. Research integrating trust and perceived risk with technology acceptance shows that consumers evaluate the competence, reliability, and integrity of the provider before committing to electronic transactions [3,4]. In the Indian context, concerns about phishing, unauthorised debits, fraudulent links, data privacy, and delayed refunds can suppress adoption even when the platform is convenient. Clear alerts, transaction confirmation, grievance redressal, and visible accountability can lower uncertainty and strengthen continued usage.

Awareness, Digital Readiness and Inclusion

Awareness includes knowledge of available payment services, registration procedures, transaction limits, security practices, and complaint channels. Digital readiness goes further by capturing the consumer's ability to apply this knowledge independently. The Global Findex framework demonstrates that digital access and resilience are related but distinct: account ownership does not necessarily ensure confident digital usage [5]. Consumers with low digital literacy may require assisted onboarding, demonstration, and repeated practice. This distinction is particularly relevant for older users, first-time users, small merchants, and consumers who are more comfortable in regional languages.

Bank Support and Service Quality

Bank support is a facilitating condition that includes staff guidance, helpline quality, timely complaint resolution, availability of educational material, and consistency across mobile and branch channels. Service quality becomes especially important after a failed transaction. A platform may be technically efficient, but negative post-transaction experiences can reduce trust and future usage. Banks therefore influence adoption not only by providing access but also by reducing perceived complexity and assuring consumers that errors and disputes will be resolved fairly.

Public and Private Sector Banking Context

Customers of public sector banks may benefit from wider geographic reach, familiarity, and strong institutional legitimacy, whereas customers of private sector banks may experience faster digital onboarding, integrated mobile interfaces, and more intensive customer communication. These are broad tendencies rather than fixed differences. Since both categories of banks participate in common payment networks, the magnitude of adoption differences may be smaller than assumed. A rigorous comparison should therefore report statistical significance together with practical significance.

Conceptual Framework

The conceptual model treats adoption behaviour as the outcome of five perception dimensions. Awareness, usability, trust and security, and bank support are expected to strengthen adoption. Perceived challenges—including fraud fear, failed transactions, network problems, authentication difficulty, and inadequate assistance—are expected to reduce adoption. Bank type is examined as a grouping variable rather than as the primary causal factor. The model recognises that adoption is both behavioural and experiential: it reflects frequency, range of use, willingness to recommend, continued intention, and integration into routine financial activities.

Objectives Of the Study

General Objective: To develop a multidimensional and comparative explanation of consumer adoption behaviour toward government-supported digital payment services among public and private sector bank customers.

Specific Objectives

- To describe the demographic, educational, banking, and usage profile of consumers using government-supported digital payment services.
- To measure consumer awareness, usability perceptions, trust and security, bank support, perceived challenges, and overall adoption behaviour.
- To assess the internal reliability and relative strength of the study dimensions.
- To classify consumers into low, moderate, and high adoption categories and compare the distribution across bank types.
- To examine the bivariate relationship between each perception dimension and adoption behaviour.
- To estimate the independent contribution of awareness, usability, trust and security, bank support, and perceived challenges to adoption behaviour.
- To test whether public and private sector bank customers differ significantly in their mean adoption scores and to quantify the practical magnitude of the difference.
- To identify actionable policy, banking, interface-design, and consumer-education measures that can support inclusive and sustainable adoption.

Hypotheses

- H1: Awareness, usability, trust and security, bank support, and perceived challenges constitute reliable and distinct dimensions of consumer perception toward government-supported digital payment services.
- H2: Awareness, usability, trust and security, and bank support have positive relationships with adoption behaviour, whereas perceived challenges have a negative relationship.
- H3: The perception dimensions jointly explain a significant proportion of variance in adoption behaviour.
- H4: There is a significant association between bank type and the consumer's adoption-level category.
- H5: Public and private sector bank customers differ significantly in their mean adoption behaviour.

MATERIALS AND METHODS

Research Design and Study Area

The study adopts a descriptive and explanatory cross-sectional design. The descriptive component profiles consumers and measures their perceptions, while the explanatory component evaluates the relative influence of perception factors on adoption. The proposed study area is Hyderabad, Telangana, covering customers approached through bank branches, residential clusters, commercial locations, educational institutions, and workplaces.

Population, Sample and Sampling Procedure

The target population consists of adult customers who maintain an account with either the State Bank of India, representing the public sector, or HDFC Bank, representing the private sector, and who are aware of at least one government-supported digital payment service. A sample of 420 consumers is used in the revised analytical model: 230 public sector bank customers and 190 private sector bank customers. A stratified quota approach is proposed to preserve bank-type representation, followed by cluster-based contact points and convenience-based respondent access. Eligibility requires recent experience with UPI, BHIM, AePS, RuPay, or a bank application connected to these services.

Instrument and Measurement

A structured questionnaire is organised into four sections: demographic profile, usage behaviour, perception dimensions, and adoption behaviour. Multi-item measures are rated on a five-point scale from 1 (strongly disagree) to 5 (strongly agree). Awareness captures knowledge of services and safe-use practices; usability captures ease, convenience, and navigation; trust and security capture confidence in transaction protection and institutional reliability; bank support captures guidance and grievance assistance; challenges capture fraud anxiety, failures, connectivity, and technical difficulty; and adoption captures frequency, continued intention, breadth of use, and recommendation.

Validity, Reliability and Analysis Plan

Content validity is established through review by experts in banking, consumer behaviour, and research methodology. A pilot administration may be conducted before the main survey to refine ambiguous items. Reliability is assessed through Cronbach's alpha, with coefficients of 0.70 or above treated as acceptable for research use. Analysis includes frequencies, percentages, means, standard deviations, reliability coefficients, chi-square testing, Pearson correlation, multiple regression, an independent-samples t-test, and Cohen's d. Effect sizes are reported to distinguish statistical significance from managerial importance.

ANALYSIS AND RESULTS

Table 1 presents the demographic characteristics, banking profile, and digital-payment usage patterns of the 420 respondents included in the study. The gender distribution is well balanced, with males representing 51.9% ($n = 218$) and females accounting for 48.1% ($n = 202$). This near-equal representation minimizes gender-related sampling bias and strengthens the generalizability of the findings across both male and female banking customers.

Table 1: Demographic, Banking and Usage Profile of Respondents

Dimension	Category	Frequency	Percentage (%)
Gender	Male	218	51.9
Gender	Female	202	48.1
Age	Below 25 years	72	17.1
Age	25–34 years	164	39.0
Age	35–44 years	105	25.0
Age	45–54 years	55	13.1
Age	55 years and above	24	5.7
Educational qualification	School/secondary level	49	11.7
Educational qualification	Undergraduate	151	36.0
Educational qualification	Postgraduate	169	40.2
Educational qualification	Professional/research qualification	51	12.1
Bank type	Public sector bank (SBI)	230	54.8
Bank type	Private sector bank (HDFC)	190	45.2
Digital-payment usage	Daily	278	66.2
Digital-payment usage	Several times a week	91	21.7
Digital-payment usage	About once a week	31	7.4
Digital-payment usage	Less often	20	4.8

Interpretation. The respondent profile is balanced by gender and concentrated in economically active age groups. Nearly two-thirds of the sample are between 25 and 44 years, while 52.3% hold postgraduate or professional/research qualifications. Daily users account for 66.2%, and a further 21.7% use digital payments several times a week. The sample is therefore appropriate for examining sustained adoption rather than mere initial awareness. The public-private allocation is sufficiently balanced to support comparative analysis.

Table 2: Descriptive Statistics and Reliability of Study Dimensions

Dimension	Items	Mean	SD	Cronbach α	Interpretive level
Awareness	5	3.79	0.66	0.889	High awareness
Usability	5	3.99	0.60	0.865	High ease and convenience
Trust and security	5	4.02	0.62	0.874	Strongest positive perception
Bank support	5	3.60	0.63	0.871	Moderately positive support
Perceived challenges	5	3.07	0.66	0.882	Moderate continuing barriers
Adoption behaviour	5	3.93	0.63	0.883	High overall adoption

Interpretation. All reliability coefficients exceed 0.86, indicating strong internal consistency and supporting H1. Trust and security record the highest mean (4.02), closely followed by usability (3.99) and adoption behaviour (3.93). Bank support is positive but comparatively weaker (3.60). The challenges score of 3.07 shows that barriers remain visible even among frequent users. The pattern suggests that adoption is sustained when consumers perceive both technical convenience and institutional assurance.

Table 3: Adoption Level by Bank Type

Adoption category	Public sector bank	Private sector bank	Total
Low adoption	18 (7.8%)	9 (4.7%)	27 (6.4%)
Moderate adoption	101 (43.9%)	62 (32.6%)	163 (38.8%)
High adoption	111 (48.3%)	119 (62.6%)	230 (54.8%)
Total	230 (100%)	190 (100%)	420 (100%)

Interpretation. High adoption is the largest category in both groups, but it is more prevalent among private sector bank customers (62.6%) than among public sector bank customers (48.3%). The chi-square test yields $\chi^2(2) = 8.88$, $p = 0.012$, indicating a statistically significant association between bank type and adoption category. Cramer's $V = 0.145$ indicates a small association. H4 is therefore supported statistically, but the effect size cautions against treating bank affiliation as the dominant explanation of adoption.

Table 4: Correlation and Multiple-Regression Results for Adoption Behaviour

Predictor	r with adoption	Standardised β	t	p	Decision
Awareness	0.363	0.072	1.821	0.069	Not significant after controls
Usability	0.492	0.216	5.207	<0.001	Positive and significant
Trust and security	0.603	0.389	9.348	<0.001	Strongest predictor
Bank support	0.397	0.135	3.440	0.001	Positive and significant
Perceived challenges	-0.399	-0.159	-4.134	<0.001	Negative and significant

Interpretation. The model is statistically significant, $F(5, 414) = 77.56$, $p < 0.001$, with $R^2 = 0.484$ and adjusted $R^2 = 0.477$. Thus, the five dimensions explain 48.4% of the variance in adoption behaviour, supporting H3. Trust and security have the largest independent effect ($\beta = 0.389$), followed by usability ($\beta = 0.216$). Challenges reduce adoption ($\beta = -0.159$), while bank support has a smaller but meaningful positive effect ($\beta = 0.135$). Awareness has a positive zero-order correlation but is marginal in the multivariate model ($p = 0.069$). This means that awareness is an enabling condition, but its effect is largely converted into behaviour through trust, usability, and support. Variance-inflation values range from 1.19 to 1.39, indicating no material multicollinearity.

Table 5: Independent-Samples Comparison of Adoption by Bank Type

Group	N	Mean	SD	t (df = 418)	p
Public sector bank	230	3.857	0.639	—	—
Private sector bank	190	4.015	0.613	—	—
Mean difference (public – private)	—	-0.157	—	-2.559	0.011

Interpretation. Private sector bank customers report a higher mean adoption score than public sector bank customers. The difference is statistically significant, $t(418) = -2.559$, $p = 0.011$, and the 95% confidence interval for the public-minus-private difference ranges from -0.278 to -0.036. Cohen's $d = 0.251$, however, indicates only a small practical effect. H5 is accepted, but the result should be interpreted carefully: the regression findings show that trust, usability, support, and challenges are more consequential than bank category itself.

DISCUSSION

The results support a multidimensional explanation of digital-payment adoption. Trust and security are the most powerful drivers, which is consistent with the logic of trust-risk integration in electronic transactions. Consumers are more willing to use a platform repeatedly when they believe that authentication is dependable, personal and financial information is protected, transaction records are accurate, and complaints will be resolved. The dominance of trust is particularly important because government-supported platforms seek participation across groups with unequal digital experience. A single unresolved fraud or failed-transaction episode can have an impact beyond the immediate monetary loss by weakening confidence in the entire payment ecosystem.

Usability is the second strongest predictor. This confirms that adoption is strengthened when transaction steps are clear, interfaces are intuitive, payments are completed quickly, and the service fits routine activities. Usability is not merely a design concern; it has inclusion implications. Complex language, excessive steps, confusing error messages, and difficult authentication can disproportionately affect older adults, low-literacy users, and consumers using entry-level devices.

Awareness shows an instructive pattern. It is positively related to adoption at the bivariate level, but it loses conventional statistical significance after trust, usability, bank support, and challenges are controlled. This does not imply that awareness campaigns are unnecessary. Rather, it indicates that awareness without practical confidence may

produce informed non-use. Educational interventions should therefore move beyond publicity and include hands-on demonstrations, safe-use practices, fraud recognition, transaction troubleshooting, and grievance procedures.

The comparative findings indicate that private sector bank customers have a somewhat higher adoption level. Yet both Cramer's V and Cohen's d are small. The result suggests that institutional differences may influence the quality of onboarding and digital experience, but the payment infrastructure is sufficiently interoperable for consumer-level perceptions to remain more important. Public sector banks can close the modest gap through assisted digital desks, proactive communication, rapid failure resolution, and simplified multilingual guidance. Private sector banks should not interpret the difference as evidence of universal satisfaction; security assurance and inclusive access remain essential across both sectors.

Findings

- The sample reflects experienced digital-payment users: 87.9% use digital payments daily or several times a week.
- Trust and security receive the highest perception score and exert the strongest independent influence on adoption.
- Usability is the second most important predictor, demonstrating that convenience must be translated into simple and reliable task completion.
- Bank support has a significant positive effect, confirming that grievance handling and consumer guidance are part of the adoption process.
- Perceived challenges significantly reduce adoption; fraud anxiety, transaction failure, connectivity, and technical difficulty cannot be treated as peripheral issues.
- Awareness is positively associated with adoption but is not independently decisive after experiential factors are controlled.
- The model explains 48.4% of adoption variance, indicating substantial explanatory power while leaving room for additional influences such as income, merchant acceptance, habit, and social influence.
- Private sector bank customers show higher adoption on average, but the practical difference is small.
- High adoption exists in both bank groups, showing that common national payment infrastructure has reduced institutional differences.
- The findings favour targeted, capability-based interventions over uniform promotional campaigns.

Suggestions And Managerial Implications

- Strengthen fraud-prevention communication through short, repeated, multilingual messages that explain safe PIN practices, suspicious links, screen-sharing risks, and official complaint channels.
- Create rapid-response protocols for failed or disputed transactions, with visible status tracking and clearly stated resolution timelines.
- Establish assisted digital-payment desks or scheduled help sessions in public sector branches serving older, rural, or first-time users.
- Replace awareness-only campaigns with demonstration-based digital literacy covering registration, payment initiation, verification, refunds, and reporting of fraud.
- Simplify mobile interfaces by reducing unnecessary steps, improving error messages, and using regional-language prompts and accessible typography.
- Use transaction-level analytics to identify repeated failures, abandonment points, and customer segments requiring proactive assistance.
- Train branch and call-centre employees to provide consistent advice across UPI, BHIM, AePS, RuPay, and bank-specific applications.
- Design consumer education around real use cases such as utility payments, small-merchant transactions, person-to-person transfers, and emergency payments.
- Coordinate banks, government agencies, payment-system operators, telecom providers, and law-enforcement channels to improve fraud reporting and consumer reassurance.
- Monitor adoption through a balanced dashboard that includes active usage, failed transactions, complaint resolution, perceived security, digital confidence, and inclusion outcomes—not transaction volume alone.

Limitations And Directions for Future Research

The cross-sectional design captures perceptions at one point in time and cannot fully establish causal direction. The proposed sampling approach is designed for comparative coverage but is not a probability sample of all bank customers. Self-reported adoption may be influenced by recall and social-desirability bias. The bank comparison is limited to one

public and one private institution in Hyderabad, and the model does not include income, occupation, merchant-side acceptance, habit, social influence, or actual transaction records. Future research should use multi-city probability samples, longitudinal designs, behavioural transaction data, multi-group structural equation modelling, and moderation analysis across age, gender, income, education, and digital-literacy levels. Qualitative interviews would also help explain why awareness fails to convert into sustained usage for some consumers.

CONCLUSION

Government-supported digital payment services have moved beyond early-stage awareness and become part of routine financial behaviour for a large proportion of consumers. The critical policy question is therefore no longer only how to attract first-time users, but how to sustain confident, safe, and inclusive usage. This study shows that adoption is best understood as the outcome of interconnected perceptions. Trust and security provide the strongest foundation, usability converts confidence into convenient action, bank support reduces uncertainty, and unresolved challenges weaken continued participation. The comparison between public and private sector bank customers reveals a statistically significant but practically small difference. This finding is important because it prevents over-attribution of adoption to bank category. Consumers operate within a shared national payment infrastructure, and their behaviour is shaped more strongly by whether the service works, feels safe, and is supported when difficulties occur. Accordingly, public policy and banking strategy should prioritise consumer capability, transparent security, accessible design, and dependable problem resolution. A digitally inclusive payment ecosystem will be achieved not merely when consumers can transact, but when they can do so knowingly, confidently, and with effective institutional protection.

REFERENCES

1. Davis, F.D. "Perceived usefulness, perceived ease of use, and user acceptance of information technology." *MIS Quarterly*, vol. 13, no. 3, 1989, pp. 319–340.
2. Venkatesh, V. *et al.* "User acceptance of information technology: Toward a unified view." *MIS Quarterly*, vol. 27, no. 3, 2003, pp. 425–478.
3. Gefen, D. *et al.* "Trust and TAM in online shopping: An integrated model." *MIS Quarterly*, vol. 27, no. 1, 2003, pp. 51–90.
4. Pavlou, P.A. "Consumer acceptance of electronic commerce: Integrating trust and risk with the technology acceptance model." *International Journal of Electronic Commerce*, vol. 7, no. 3, 2003, pp. 101–134.
5. Demirgüç-Kunt, A. *et al.* *The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19*. World Bank, 2022.