

Influence of service reliability and transaction transparency on trust formation in UPI payment apps: Evidence from Ahmedabad

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ABSTRACT

This paper explores how service reliability and transaction transparency affect trust establishing in Unified Payments Interface (UPI) payment apps, and empirically observed in Ahmedabad city. UPI has emerged as a leading platform of daily financial transactions because of the rapid growth of digital payment systems in India. It is however determined by the continued use that is heavily influenced by the trust in these applications by users. The primary data were gathered using a structured questionnaire on a survey-based descriptive research design in Ahmedabad on 70 UPI users. Correlation analysis, simple linear regression and one-way ANOVA were used to analyze the composite scores of service reliability, transaction transparency and trust formation. The results indicate that service reliability and transparency, both in the formation of trust, have weak non-significant relationships. Also, there is no significant difference in the level of trust between the age groups. The findings are that the confidence in UPI apps is institutionalized and may be likely to be inspired by wider systemic and regulatory circumstances and not the individual characteristics of services.

Key Words: UPI Payment Apps, Service Reliability, Transaction Transparency, Consumer Trust, Digital Payments, Ahmedabad

INTRODUCTION

The high rate of digital payment systems development has reshaped the manner of conducting financial transactions in India, with Unified Payments Interface (UPI) being one of the most commonly used platforms. UPI payment applications have become extremely popular because of their convenience, speed, and their inclusion with daily financial behaviors. UPI has emerged as a new method of shopping using digital signatures and smart phones, paying utility bills and peer-to-peer transfer of funds, and conducting business transactions in urban centers such as Ahmedabad, where digital literacy and smart phones are relatively high. But, the constant use of UPI payment apps does not entirely rely on the technological availability, it will be significantly affected by the degree of confidence that people have in these systems.

The formation of trust in the system of digital payments is a complex process that is influenced by various aspects of the service. Service reliability and transparency of transactions are among them. Service reliability is defined as a steady operation of UPI apps, such as transaction success, short downtime, fast processing, and error. Continuous transaction errors, delays, or technical glitch may influence user trust in it and lead to further use. Transaction transparency on the other hand involves the clarity and accuracy of transaction information that is availed to the users e.g. real-time notification, transaction history, confirmation, and clear redressing grievance mechanisms. Being transparent eliminates uncertainty and perceived risk, and, as a result, builds user trust.

The UPI apps are not only easier to use but also more prone to reliable and transparent operations when it comes to financial transactions, which is why the users of Ahmedabad, a digitally evolving city, tend to judge the UPI apps based on their perceived reliability and transparency. An insight into the role of these two variables in determining trust is vital to payment service providers, banks, and policymakers who wish to build more trust and encourage cashless transactions. The proposed research will explore how service reliability and transaction transparency impact the process of trust formation in UPI payment apps by presenting the results of empirical research on the topic in Ahmedabad and fitting into the existing discussion on digital financial inclusion.

LITERATURE REVIEW

The available empirical research focuses on the swift growth, adoption and the versatile influence of the Unified Payments Interface (UPI) on the Indian digital payment landscape. There is always evidence that UPI has become a pillar of the cashless economy of India through its ability to integrate convenience, interoperability, real-time settlement, and minimal transaction costs (Lad & Jadhav, 2024; Kumar, 2025). Industry studies, including those of public transport and service industries, show that the application of UPI has led to a massive improvement in operational efficiency, transparency, and user convenience in addition to more general objectives of financial inclusion and sustainability (Mahesh et al., 2025; Anitha and Varun, 2024).

On the consumer side of the market, various survey-based reports suggest the existence of high awareness, satisfaction, and preference towards UPI apps, in particular, Google Pay, PhonePe, and Paytm (Kiran, 2024; Nandhini et al., 2024; Vijaywargi et al., 2025). The key drivers of adoption reportedly include convenience, speed, 24x7 access, and low transaction costs repeatedly, whereas the education level and digital literacy are reported to impact the intensity of use positively (Joshi et al., 2025). Nonetheless, other emerging issues, including impulsive spending by young users and unstopped fears, associated with cybersecurity, fraud, and data privacy, are also laid out by behavioral research (Prajapati and Vidani, 2025; Vasan, 2024).

The literature is further reinforced by theoretical and model based research that adds trust, interoperability and observability as determinants of behavioral intention of UPI to existing adoption models such as UTAUT2 (Kanujiya et al., 2025). In line with it, UX-oriented studies highlight the importance of intuitive interface design, effective navigation, and usability that are to be considered inclusive to maintain trust and adoption among various groups of people (Samson, 2025). Altogether, the combined evidence indicates that UPI has changed significantly digital transactions and financial inclusion in India but its success in the long-term is conditional upon consistent investments in security infrastructure, customer awareness, regulatory control, and user-focused design.

RESEARCH GAP

Available literature on the UPI adoption highly revolves around issues of perceived usefulness, ease of use, security and general satisfaction. Although it is widely recognized that trust is a key precondition of using digital payments, research studies have not performed empirical research

that has isolated particular dimensions of service reliability and transaction transparency on forming trust. Furthermore, Ahmedabad specific evidence on the matter of city-specific evidences is limited, although it experiences a developing digital payment ecosystem. The majority of the previous research is done on a national or generalized level, considering the localized experience and expectations of the users. The paper fills this gap by conducting empirical research to determine the effects of service reliability and transaction transparency on building trust on the users of UPI in Ahmedabad.

OBJECTIVES

- To assess whether service reliability of UPI payment apps is significantly associated with users' trust formation in Ahmedabad.
- To examine whether transaction transparency in UPI payment apps significantly predicts users' trust formation in Ahmedabad.
- To examine whether overall trust in UPI payment apps differs significantly across age groups based on combined perceptions of service reliability and transaction transparency.

RESEARCH METHODOLOGY

Research Design

Descriptive research design was adopted to analyze relationships among variables.

Nature of Study

The study is empirical and quantitative in nature, based on primary survey data.

Study Area

The geographical scope of the study is Ahmedabad city.

Target Population

UPI payment app users residing in Ahmedabad.

Sample Size

A total of 70 respondents were selected for the study.

Sampling Technique

Convenience sampling method was used for selecting respondents.

Data Collection Method

Primary data were collected using a structured questionnaire.

Measurement Scale

Responses were measured using a Likert-scale to compute composite scores.

Variables of the Study

Independent Variables: Service Reliability, Transaction Transparency

Dependent Variable: Trust Formation

Statistical Tools Used

Pearson Correlation Analysis

Simple Linear Regression

One-way ANOVA

DATA ANALYSIS AND INTERPRETATION

H₀₁ (Null Hypothesis):

There is no significant association between service reliability of UPI payment apps and trust formation among users in Ahmedabad.

H₁₁ (Alternative Hypothesis):

There is a significant association between service reliability of UPI payment apps and trust formation among users in Ahmedabad.

Correlations			
		Composite score of Service Reliability	Composite score of Trust Formation
Composite score of Service Reliability	Pearson Correlation	1	-.209
	Sig. (2-tailed)		.083
	N	70	70
Composite score of Trust Formation	Pearson Correlation	-.209	1
	Sig. (2-tailed)	.083	
	N	70	70

The correlation analysis was used by Pearson to observe the effect of the composite score of service reliability on the composite score of trust formation among the UPI users in Ahmedabad. The findings show that there is a weak negative relationship between reliability of the service and formation of trust ($r = -0.209$). Nevertheless, the correlation is statistically unimportant, because the value of significance ($p = 0.083$) is greater than the conventional 0.05. This implies that differences in perceived service reliability do not have a significant impact on the formation of trust among users in the current sample. Thus, the reliability of the services does not seem to be a critical point that influences the establishment of trust towards UPI payment apps among the residents of Ahmedabad.

H₀₂ (Null Hypothesis):

Transaction transparency of UPI payment apps does not significantly predict users' trust formation in Ahmedabad.

H₁₂ (Alternative Hypothesis):

Transaction transparency of UPI payment apps significantly predicts users' trust formation in Ahmedabad.

Model Summary				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.185 ^a	.034	.020	.50680

a. Predictors: (Constant), Composite score of Transaction Transparency

ANOVA ^a						
Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.620	1	.620	2.415	.125 ^b
	Residual	17.466	68	.257		
	Total	18.086	69			
a. Dependent Variable: Composite score of Trust Formation						
b. Predictors: (Constant), Composite score of Transaction Transparency						

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	3.164	.615		5.146	.000
	Composite score of Transaction Transparency	.228	.147	.185	1.554	.125
a. Dependent Variable: Composite score of Trust Formation						

To examine the impact of transaction transparency on the trust-making in users of UPI in Ahmedabad, the simple linear regression analysis was performed. The model suggests that the transaction transparency has a weak positive relationship ($R = 0.185$) with the explanatory power of 0.034 indicating that 3.4 percent of the trust formation can be explained by the transaction transparency. The outcome of ANOVA demonstrates that the regression equation is not seen to be significant ($F = 2.415$, $p = 0.125 > 0.05$) and therefore, no significant effect of transaction transparency is observed in the formation of trust. Also, the regression coefficient of transaction transparency is a positive and non significant value ($B = 0.228$, $t = 1.554$, $p = 0.125$), which confirms the hypothesis that the perceived transaction transparency is not statistically significant in the determination of the trust of users towards UPI payment apps among the sampled population.

H₀₃ (Null Hypothesis):

There is no significant difference among age groups in overall trust formation toward UPI payment apps based on service reliability and transaction transparency.

H₁₃ (Alternative Hypothesis):

There is a significant difference among age groups in overall trust formation toward UPI payment apps based on service reliability and transaction transparency.

ANOVA					
Composite score of Trust Formation					
	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	.663	4	.166	.618	.651
Within Groups	17.423	65	.268		
Total	18.086	69			

The general hypothesis used was whether the joint effect of service reliability and transaction transparency on the formation of trust in different age groups is different in the application of a one-way ANOVA. The findings show that the difference in groups variance is insignificant ($F = 0.618$), and the p-value (0.651) is significantly greater than the 0.05 level, which proves that there are no statistically significant differences in age categories. This implies that the users of varying age brackets have the same trust in the UPI payment applications irrespective of their joint views on the reliability of the service in question and the transparency of the transactions. Therefore, the age effect does not seem to mediate the joint effect of these factors of service on the development of trust in the current study.

CONCLUSION

The current paper analysed how reliability of the services and the transparency of the transaction can influence the formation of trust between the users and the UPI payment apps in Ahmedabad, and the role of age as a moderator. The results provided on the basis of correlation analysis, regression analysis, and one-way ANOVA all suggest that the formation of trust among UPI users depends not significantly on the selected factors associated with service in the conditions of the existing sample.

The correlation analysis showed that service reliability and the formation of trust had a weak negative relationship that was statistically insignificant. This implies that differences in perceptions of users about the reliability of the service, i.e. uptime, reliability, or error-free transactions, do not have meaningful impact on the formation of trust to UPI apps. Reliability is likely to be seen as a standard or basic characteristic in a well-developed digital payment ecosystem, such as UPI, hence, minimizing its differentiated effect on trust.

Also, regression analysis on the relationship between transaction transparency and formation of trust revealed that they have weak positive relationship, which is non-significant. The weak explanatory ability of the model shows that the distinctiveness of the trust among users is attributed to transaction transparency only to a minor degree. It means that the transparency might be a good idea, but it might not be a defining element in the establishment of trust when users get used to standardized confirmations of transactions, warning messages, and records in UPI platforms.

Besides, the results of one-way ANOVA proved that the overall trust in UPI payment apps does not significantly differ between age groups. This underscores the homogenous acceptance and trust of UPI systems among the various age groups and how much UPI use has pervaded and become a matter of norm in Ahmedabad.

On the whole, the results indicate that the level of trust in UPI payment apps would not be affected by the particular service characteristics, including reliability and transparency, but would be determined by more systemic elements, including regulatory assurance, brand recognition, security infrastructure, and previous user experience. The research therefore makes some

contributions to the concept of trust as a fixed and institutionalized structure of the Indian digital payment system.

RECOMMENDATIONS

To ensure that the offered UPI service meets the expected performance and performance, the UPI service providers need to change their strategic orientation to the elevated levels of trust, including cybersecurity assurance, prevention of fraud schemes, efficiency of grievance redress, and customer education. Constant notification of security improvements and control measures can also enhance trust among the users. To maintain institutional trust, policymakers and regulators ought to further strengthen norms and consumer protection frameworks that are standardized. Further research can also examine how other psychological, experiential, and risk-based factors affect trust in the future with larger and more diverse samples to gain a better understanding of how trust is formed in digital payment systems.

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