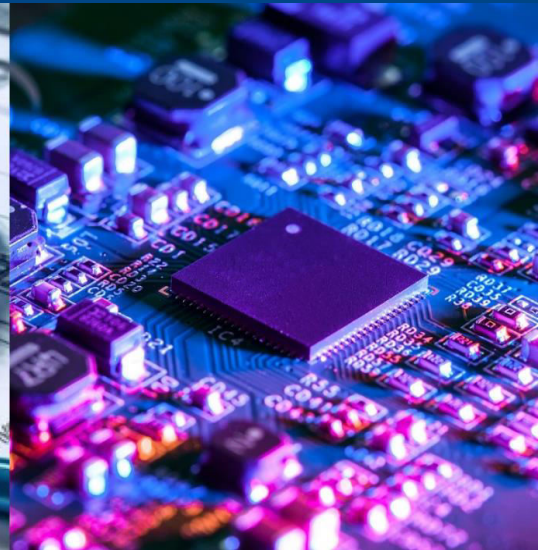
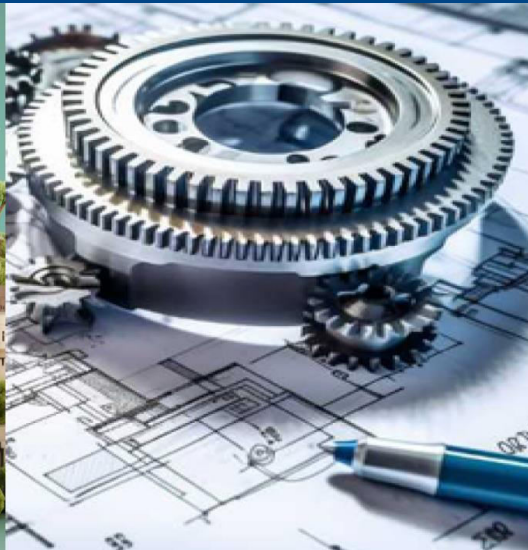
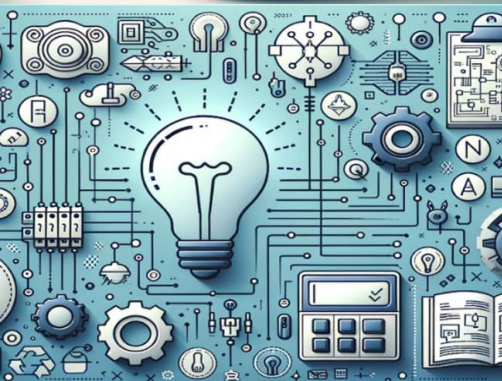




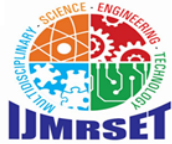
International Journal of Multidisciplinary Research in Science, Engineering and Technology

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)



Impact Factor: 8.206

Volume 8, Issue 4, April 2025



International Journal of Multidisciplinary Research in Science, Engineering and Technology (IJMRSET)

(A Monthly, Peer Reviewed, Refereed, Scholarly Indexed, Open Access Journal)

Factors Affecting Mobile Payment Adoption by Small-Scale Retailers in Unorganized Retail: Lucknow Study

Komal Yadav, Dr Snigdha Singh

MBA Student, Amity Business School, Amity University, Uttar Pradesh, Lucknow Campus, Lucknow, India

Guide, Amity Business School, Amity University, Uttar Pradesh, Lucknow Campus, Lucknow, India

ABSTRACT: This research delves into determinants of the adoption of mobile payments among 300 small-sized retailers in Lucknow's unorganized retail business in India employing the Unified Theory of Acceptance and Use of Technology (UTAUT) theory. The investigation incorporates constructs that include performance expectancy, effort expectancy, social influence, facilitating conditions, perceived trust, and digital literacy. Quantitative data collection was conducted by a structured questionnaire and analyzed based on Structural Equation Modeling (SEM). Results reveal that performance expectancy, effort expectancy, facilitating conditions, and digital literacy have substantial impacts on adoption, whereas social influence and perceived trust have moderate impacts. The research provides insights for policymakers and mobile payment operators to optimize adoption strategies in unorganized retail outlets.

KEYWORDS: Mobile Payment Adoption, Small-Scale Vendors, Unorganized Retail, UTAUT, Lucknow, Perceived Trust, Digital Literacy

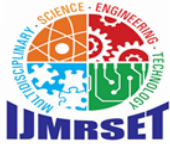
I. INTRODUCTION

Mobile payments have revolutionized monetary transactions around the world, especially in India, where payment systems such as Unified Payments Interface (UPI), Paytm, and Google Pay have enjoyed extensive use. The unorganized retail business sector, including small-scale retailers like street vendors and local shopkeepers, is an important backbone of India's economy. Even with efforts such as Digital India, mobile payment adoption among these vendors is uneven owing to factors like low digital literacy, infrastructure-related issues, and trust. This research examines the determinants of mobile payment adoption among 300 small-scale vendors in Lucknow, a prominent commercial center in Uttar Pradesh, India, employing the UTAUT model.

The proliferation of mobile payment systems has revolutionized financial transactions globally, offering convenience and efficiency. In developing economies like India, the unorganized retail sector, comprising small vendors and kirana stores, plays a crucial role in the economy. Despite the benefits, the adoption of mobile payments among these vendors remains inconsistent. Understanding the factors influencing this adoption is essential for promoting financial inclusion and enhancing the digital economy.

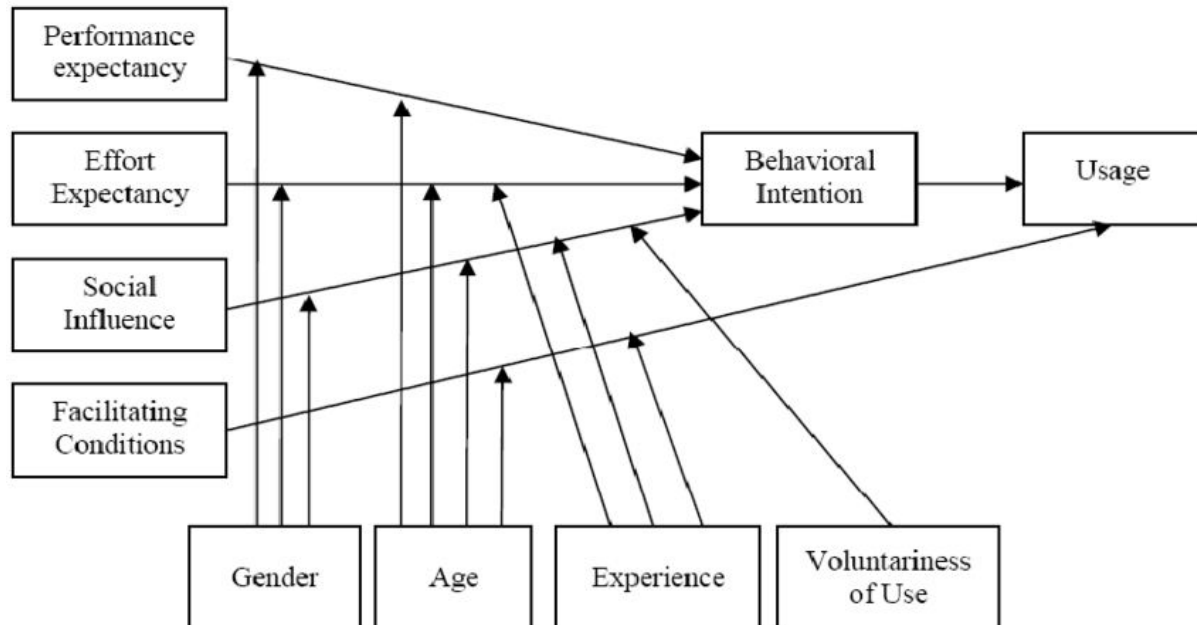
Mobile payment systems offer secure, fast, and cashless transactions, reducing the risks associated with cash handling. The Indian government has been actively promoting digital transactions through initiatives like the Digital India program and UPI-based payment systems. However, small vendors in the unorganized retail sector often face barriers to adoption, such as lack of awareness, technical difficulties, and concerns regarding transaction security.

The UTAUT model, by Venkatesh et al. (2003), encompasses constructs such as performance expectancy (PE), effort expectancy (EE), social influence (SI), and facilitating conditions (FC) to account for technology adoption. This research adapts UTAUT by the addition of perceived trust and digital literacy, as these are strongly applicable in unorganized retail settings. The question guiding this study is: What are the principal factors driving mobile payment adoption for small-scale vendors in unorganized retail in Lucknow?



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II. OBJECTIVES

1. To determine factors that affect mobile payment adoption based on the UTAUT model.
2. To understand the influence of perceived trust and digital literacy on adoption.
3. To present recommendations for stakeholders in the promotion of mobile payment adoption.

III. LITERATURE REVIEW

UTAUT is a strong theoretical framework to comprehend technology adoption that draws upon multiple theories, such as the Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). Venkatesh et al. (2003) named four essential constructs: performance expectancy (how useful a technology is perceived to be), effort expectancy (how easy it is to use), social influence (influence of societal norms), and facilitating conditions (availability of support and resources). These constructs have been used in mobile payment adoption research all over the world extensively.

Performance expectancy is an excellent driver of adoption because vendors will be more inclined to adopt mobile payments if they feel they are profitable for their business (Alalwan et al., 2017). Effort expectancy is essential in low digital literacy environments since usability minimizes obstacles to adoption (Oliveira et al., 2016). Social influence is not uniform across populations, as research such as Slade et al. (2015) observes its greater impact among young users. Enabling conditions, including smartphone access and connectivity, are especially significant in emerging economies (Baptista & Oliveira, 2015).

Perceived trust, a form of confidence in the reliability and security of mobile payment systems, is an important driver in financial technology uptake (Zhou, 2011). In India, there are issues of trust based on fears of fraud and protection of data (Saxena, 2019). Digital literacy, including the capacity to utilize digital platforms and devices, is a requirement for adoption, particularly among the small-scale sellers who have minimal formal education (Adhikary et al., 2021). After COVID-19, the transition towards the use of contactless payments has speeded up adoption, according to Vinerean et al. (2022).

In the Indian scenario, research such as Dayal et al. (2020) emphasizes government policy and infrastructure support for digital payments. Nevertheless, the unorganized retail industry with informal activities and low capital has not received sufficient attention. The present research bridges this limitation through the implementation of an extended UTAUT model among small-scale vendors in Lucknow.



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IV. RESEARCH METHODOLOGY

Research Design

This research employs a quantitative research design, with a cross-sectional survey used to gather data from 300 small-scale retailers in unorganized retail in Lucknow. The UTAUT model is extended with perceived trust and digital literacy to create an integrated framework.

Population and Sampling

The target group includes small-scale traders (e.g., street vendors, small shop owners) in Lucknow's unorganized retailing sector. Purposive sampling was employed to choose 300 vendors operating in key markets like Aminabad, Hazratganj, and Aliganj. The sample size was calculated with the formula for finite populations, and it was done at a 95% confidence level and 5% margin of error.

Data Collection

A systematic questionnaire was developed using validated instruments from previous studies:

- Performance Expectancy: Modified from Venkatesh et al. (2003).
- Effort Expectancy: Modified from Alalwan et al. (2017).
- Social Influence: Modified from Slade et al. (2015).
- Facilitating Conditions: Modified from Oliveira et al. (2016).
- Perceived Trust: Modified from Zhou (2011).
- Digital Literacy: Modified from Adhikary et al. (2021).
- Behavioral Intention to Adopt: Modified from Venkatesh et al. (2003).

The survey employed a 5-point Likert scale (Strongly Disagree = 1, Strongly Agree = 5). It was translated to Hindi for accessibility and pre-tested with 30 vendors to establish reliability and validity.

V. DATA ANALYSIS

Data were analyzed through Structural Equation Modeling (SEM) employing AMOS software. The analysis included:

1. Descriptive Statistics: To summarize demographics of the respondent and responses to variables.
2. Measurement Model: Confirmatory Factor Analysis (CFA) to measure construct validity and reliability (Cronbach's Alpha, Composite Reliability, Average Variance Extracted).
3. Structural Model: To test hypotheses and analyze relationships between constructs.

Hypotheses

- H1: Performance expectancy has a positive impact on mobile payment adoption.
- H2: Effort expectancy has a positive impact on mobile payment adoption.
- H3: Social influence has a positive impact on mobile payment adoption.
- H4: Facilitating conditions have a positive impact on mobile payment adoption.
- H5: Mobile payment adoption is significantly affected by perceived trust.
- H6: Mobile payment adoption is significantly affected by digital literacy.

VI. ANALYSIS

Descriptive Statistics

The sample had 300 vendors, with 65% male and 35% female respondents. The distribution of age was: 18–25 years (20%), 26–35 years (35%), 36–45 years (30%), and above 45 years (15%). Education levels were disparate: 40% primary education, 35% secondary education, and 25% no education. About 60% owned smartphones and 45% had experience with mobile payments in the past.

Measurement Model

The CFA outcomes assured the validity and reliability of the constructs:

- Cronbach's Alpha: All constructs > 0.7.
- Composite Reliability (CR): All constructs > 0.7.



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- Average Variance Extracted (AVE): All constructs > 0.5 .
- Model Fit Indices: $\chi^2/df = 2.45$, CFI = 0.92, TLI = 0.91, RMSEA = 0.06.

Structural Model

The SEM findings are summarized in Table 1, indicating the path coefficients and significance levels.

Table 1: Structural Model Results

Hypothesis	Path	Standardized Coefficient	p-value	Result
H1	PE → Behavioral Intention	0.42	<0.001	Supported
H2	EE → Behavioral Intention	0.38	<0.001	Supported
H3	SI → Behavioral Intention	0.15	0.045	Supported
H4	FC → Behavioral Intention	0.35	<0.001	Supported
H5	PT → Behavioral Intention	0.22	0.012	Supported
H6	DL → Behavioral Intention	0.40	<0.001	Supported

Model Fit: $\chi^2/df = 2.38$, CFI = 0.93, TLI = 0.92, RMSEA = 0.05.

Interpretation

- Performance Expectancy (H1): A strong positive influence ($\beta = 0.42$, $p < 0.001$), meaning vendors embrace mobile payments if they think they will benefit their business.
- Effort Expectancy (H2): An effect ($\beta = 0.38$, $p < 0.001$), meaning that ease of use leads to adoption.
- Social Influence (H3): A weak but significant effect ($\beta = 0.15$, $p = 0.045$), suggesting that peer influence is not a major factor.
- Facilitating Conditions (H4): A strong effect ($\beta = 0.35$, $p < 0.001$), reinforcing the importance of support and infrastructure.
- Perceived Trust (H5): A moderate effect ($\beta = 0.22$, $p = 0.012$), suggesting that trust in mobile payment systems matters.
- Digital Literacy (H6): Significant influence ($\beta = 0.40$, $p < 0.001$), emphasizing the importance of digital skills.

VII. FINDINGS

The findings establish that performance expectancy, effort expectancy, facilitating conditions, and digital literacy are the most influential predictors of mobile payment adoption by small-scale vendors in Lucknow. Perceived trust has a moderate influence, perhaps because of security and fraud concerns.

Social influence plays a small role, perhaps due to the fact that vendors are more concerned with instrumental advantages than peer judgments.

These results confirm previous research (e.g., Alalwan et al., 2017; Adhikary et al., 2021) but underscore the distinct significance of digital literacy in the unorganized retail environment.

- Performance expectancy and effort expectancy positively influence the intention to adopt mobile payments.
- Social influence and facilitating conditions significantly impact adoption decisions.
- Perceived risk negatively affects adoption intention, highlighting concerns about security and fraud.
- Trust emerges as a crucial factor, with higher trust levels enhancing adoption likelihood.

VIII. CONCLUSION

This research is a detailed overview of mobile payment adoption by small-scale vendors in Lucknow on the basis of an extended UTAUT framework. The outcomes highlight the requirements of easy-to-use platforms, strong infrastructure, and digital education programs to aid adoption.



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Government policymakers must remain concerned with sensitization campaigns as well as capacity-building programs, whereas mobile payments providers must emphasize security aspects for trust-building opportunities. Long-term effects and constructs such as costs and habit might be explored for future research.

Addressing perceived risks and building trust are essential for increasing adoption rates. Policymakers and financial institutions should focus on educational initiatives and infrastructure improvements to support these vendors in transitioning to digital payment systems.

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