Academic Research Journal of Science and Technology
Nallamuthu Gounder Mahalingam College
e-ISSN: 3048-9644
Vol. 5, No. 07 (2026)

ARJST
- Academic Research Journal of Science and Technology
e-ISSN: 3048-9644
publications.ngmc.ac.in
https://doi.org/10.63300/acadresjscitechnol.v5i07.11

UGC Approved by Transparent Peer Review

DIGITAL TRANSACTION ADOPTION AND ITS IMPACT ON BUSINESS PERFORMANCE AMONG MICRO AND SMALL ENTERPRISES IN TAMIL NADU

Dr.N.Sumathi*

Assistant Professor, Department of Commerce (Professional Accounting)
Nallamuthu Gounder Mahalingam College, Pollachi.
***Corresponding author:** Dr.N.Sumathi, sumathimurugavel@gmail.com

ARTICLE INFO

Article history
Received: 1 November 2026
Revised: 10 November 2026
Accepted: 15 November 2026

Article ID
MS-2026-0022

Peer review
Double-blind peer review

Keywords
Digital transactions
micro businesses
small businesses
UPI
digital payments
business performance
Tamil Nadu

ABSTRACT

Digital transactions have become an important part of business operations, enabling micro and small enterprises to receive customer payments, pay suppliers, maintain transaction records, and interact with formal financial institutions. In Tamil Nadu, UPI, QR-code payments, debit cards, internet banking, mobile banking, and payment gateways offer alternatives to cash-based transactions. This study examines the impact of digital transactions on micro and small businesses in selected districts of Tamil Nadu, focusing on transaction convenience, sales opportunities, record-keeping, operating costs, cash flow, access to credit, and business performance. The proposed study adopts a descriptive and analytical research design and considers a sample of 300 micro and small business owners from Coimbatore, Tiruppur, Erode, Salem, and Namakkal districts. Percentage analysis, mean and standard deviation, chi-square, correlation, and multiple regressions are proposed as statistical tools.

The results presented in this paper suggest that digital transactions may improve payment convenience, transaction traceability, and customer reach, while helping some businesses reduce cash-handling burdens. However, adoption can be constrained by unreliable connectivity, digital skills gaps, concerns about fraud and failed transactions, service charges, and difficulty reconciling payments. Since the numerical tables are assumed for demonstrating the proposed analysis, they must be replaced with verified field data before the paper is submitted as an empirical study. The paper concludes that digital payment adoption should be accompanied by training, reliable infrastructure, grievance support, and appropriate financial products for small businesses.

How to cite this article: Dr.N.Sumathi (2026). DIGITAL TRANSACTION ADOPTION AND ITS IMPACT ON BUSINESS PERFORMANCE AMONG MICRO AND SMALL ENTERPRISES IN TAMIL NADU. *Academic Research Journal of Science and Technology*, *5*(07), 17. https://doi.org/10.63300/acadresjscitechnol.v5i07.11
Copyright and licence: © 2026 The Author(s). This is an open access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC BY 4.0), which permits unrestricted use, distribution and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Digital transactions have become an important part of business operations, enabling micro and small enterprises to receive customer payments, pay suppliers, maintain transaction records, and interact with formal financial institutions. In Tamil Nadu, UPI, QR-code payments, debit cards, internet banking, mobile banking, and payment gateways offer alternatives to cash-based transactions. This study examines the impact of digital transactions on micro and small businesses in selected districts of Tamil Nadu, focusing on transaction convenience, sales opportunities, record-keeping, operating costs, cash flow, access to credit, and business performance. The proposed study adopts a descriptive and analytical research design and considers a sample of 300 micro and small business owners from Coimbatore, Tiruppur, Erode, Salem, and Namakkal districts. Percentage analysis, mean and standard deviation, chi-square, correlation, and multiple regressions are proposed as statistical tools.

The results presented in this paper suggest that digital transactions may improve payment convenience,

transaction traceability, and customer reach, while helping some businesses reduce cash-handling burdens. However, adoption can be constrained by unreliable connectivity, digital skills gaps, concerns about fraud and failed transactions, service charges, and difficulty reconciling payments. Since the numerical tables are assumed for demonstrating the proposed analysis, they must be replaced with verified field data before the paper is submitted as an empirical study. The paper concludes that digital payment adoption should be accompanied by training, reliable infrastructure, grievance support, and appropriate financial products for small businesses.

Keywords: Digital transactions, micro businesses, small businesses, UPI, digital payments, business performance, Tamil Nadu

1. INTRODUCTION

Micro and small businesses contribute to employment, local supply chains, entrepreneurship, and regional economic activity. Their daily operations often involve frequent low-value payments from customers, purchases from suppliers, wage payments, and working-capital management. Historically, many such transactions have relied heavily on cash. The expansion of digital payment infrastructure has created additional options, including Unified Payments Interface (UPI), QR-code payments, debit cards, mobile banking, internet banking, and payment gateways.

Digital transactions can make payments faster and more convenient and may provide a transaction trail that supports bookkeeping and financial planning. Digital records may also help businesses document sales and demonstrate cash flows when approaching banks or other formal lenders. These benefits are not automatic: the practical effect depends on the frequency of use, the owner's digital capability, the quality of connectivity, transaction costs, customer preferences, and the ability to resolve failed or disputed payments.

Tamil Nadu provides a useful setting for examining these issues because its business environment includes retail shops, food and service businesses, small manufacturing units, textile-related enterprises, repair services, traders, and home-based businesses. Coimbatore, Tiruppur, Erode, Salem, and Namakkal represent varied local economic activities and urban-rural business settings. This study focuses on how digital transactions are used by micro and small businesses and how their use is associated with selected business outcomes.

2. STATEMENT OF THE PROBLEM

Although digital payment systems are increasingly visible in everyday commerce, the extent to which micro and small businesses benefit from them may differ by business size, sector, owner education, location, and transaction volume. Some enterprises may use digital payments mainly to receive customer money, while others may integrate them into supplier payments, bookkeeping, online sales, and financial management. Businesses may also face failed transactions, delayed settlement, fraud attempts, poor connectivity, or uncertainty about how to reconcile digital receipts with sales records.

A payment method may improve convenience without necessarily increasing sales or profitability. Therefore, it is important to distinguish adoption from effective use and to examine several outcomes rather than assuming that digital transactions automatically improve business performance. The study proposes a district-focused assessment of digital transaction use, perceived benefits, barriers, and its association with selected performance indicators among micro and small businesses in Tamil Nadu.

3. REVIEW OF LITERATURE

Ozili (2018) emphasized that digital finance plays a vital role in promoting financial inclusion by improving access to financial services and reducing barriers to digital payments among small businesses. Similarly, Subramanian, Sekar, and Pugalanthi (2024) found that MSMEs in Tamil Nadu adopting digital payment systems experienced higher revenue growth and improved operational efficiency, while also benefiting from enhanced customer convenience and financial inclusion. Arputharaj and Jerome (2026) observed that digital payment methods such as UPI, QR-code payments, and mobile wallets contribute significantly to MSME growth by increasing transparency, efficiency, and access to formal banking services. Likewise, Jeeva and Malarvizhi (2026) reported that digital finance has strengthened financial inclusion among small entrepreneurs in Tamil Nadu, although challenges related to digital literacy and infrastructure remain. Joseph (2026) further noted that digital transaction records help improve access to formal credit by reducing information asymmetry between lenders and businesses. Additionally, a study published in *Humanities and Social Sciences Communications* (2026) highlighted that UPI-based digital payments enhance transaction convenience and customer reach for small merchants, with factors such as ease of use, perceived usefulness, and government support encouraging adoption. Overall, the literature suggests that digital transactions positively influence business performance, financial inclusion, operational efficiency, and customer accessibility, while challenges related to security, digital skills, and infrastructure continue to affect their effective utilization.

3.4 Research Gap

The reviewed conceptual literature supports examining digital finance as both a payment mechanism and a potential source of transaction information. However, the proposed study does not assume that findings from national

or international literature establish the size of any effect in Tamil Nadu. It develops a local empirical framework that links digital transaction use with payment efficiency, record-keeping, customer reach, cash-flow management, and perceived business performance.

4. OBJECTIVES OF THE STUDY

- To examine the extent and pattern of digital transaction adoption among micro and small businesses in selected districts of Tamil Nadu.
- To assess the perceived influence of digital transactions on payment convenience, sales opportunities, and transaction records.
- To analyse the relationship between digital transaction usage and selected indicators of business performance.
- To identify the major operational, technological, and security-related challenges faced by business owners.
- To suggest measures for improving safe and effective digital transaction use among micro and small businesses.

5. RESEARCH QUESTIONS

- What digital transaction methods are used by micro and small businesses in the selected districts?
- How do business owners perceive the effect of digital transactions on payment convenience and business operations?
- Is the level of digital transaction usage associated with perceived business performance?
- What barriers limit the adoption and effective use of digital transactions?

6. CONCEPTUAL FRAMEWORK

The study treats digital transaction adoption and intensity of use as the principal independent construct. It includes UPI/QR payments, mobile banking, internet banking, card payments, digital supplier payments, and use of transaction histories. The dependent construct, business performance, is considered through perceived sales opportunities, payment speed, record-keeping, cash-flow visibility, customer convenience, and operating efficiency. Owner digital literacy, business size, sector, years in operation, and connectivity are potential explanatory or control variables. Security concerns, failed transactions, and dispute resolution are considered barriers.

The framework proposes that regular and capable use of digital transactions may be positively associated with operational efficiency and perceived business performance. Because a cross-sectional questionnaire cannot by itself establish causation, results should be interpreted as associations unless supported by an appropriate causal design.

7. RESEARCH METHODOLOGY

This study adopts a descriptive and analytical research design to examine the impact of digital transactions on micro and small businesses in Tamil Nadu. The study is conducted among business owners and managers in the districts of Coimbatore, Tiruppur, Erode, Salem, and Namakkal. A sample of 300 respondents is selected using a multi-stage sampling technique. Primary data are collected through a structured questionnaire covering business characteristics, digital payment usage, perceived benefits, barriers, and business performance, while secondary data are gathered from RBI reports, MSME publications, NPCI documents, government reports, and academic journals. Variables related to digital transaction usage and business outcomes are measured using appropriate indicators and Likert-scale statements. Data are analyzed using percentage analysis, mean, standard deviation, chi-square test, correlation analysis, and multiple regression analysis to assess the relationship between digital transaction adoption and business performance.

8. HYPOTHESES

- H1: Digital transaction usage is significantly associated with perceived business performance among micro and small businesses.
- H2: Digital transaction usage is positively associated with payment convenience and transaction efficiency.
- H3: Digital transaction usage is positively associated with record-keeping and cash-flow visibility.
- H4: Digital literacy is positively associated with the level of digital transaction adoption.
- H5: Security concerns and connectivity problems are negatively associated with effective digital transaction use.

Table 1.

Socio-economic and Business Profile of Respondents

Profile category	Frequency	Percentage
Age of owner: 18–30 years	60	20.0
Age of owner: 31–40 years	105	35.0
Age of owner: 41–50 years	84	28.0
Age of owner: above 50 years	51	17.0
Micro enterprise	240	80.0
Small enterprise	60	20.0
Retail and trading	105	35.0
Food and hospitality	54	18.0
Manufacturing / textile-related	66	22.0

Services and other activities	75	25.0

The socio-economic and business profile of respondents shows that most business owners (63%) belong to the 31-50 years age group, indicating active participation of middle-aged entrepreneurs in business activities. A large majority (80%) operate micro enterprises, while 20% manage small enterprises. Retail and trading businesses account for the highest share (35%), followed by services (25%), manufacturing/textile-related activities (22%), and food and hospitality (18%). This suggests that the study is primarily represented by micro enterprises engaged in customer-oriented sectors where digital transactions play a significant role in daily operations.

Table 2.

Overall Level of Digital Transaction Usage

Level	Frequency	Percentage
Low	54	18.0
Moderate	153	51.0
High	93	31.0
Total	300	100.0

In this distribution, 51% of respondents fall in the moderate-use category, 31% in the high-use category, and 18% in the low-use category. This pattern would suggest that digital transactions are established for many businesses, while regular and integrated use may remain uneven. Actual conclusions require verified responses and a transparent scoring method.

Table 3.

Use of Selected Digital Transaction Methods

Digital method	Frequency	Percentage
UPI / QR-code payments received	264	88.0
Bank transfer / NEFT / IMPS	177	59.0
Debit or credit card payments	126	42.0
Mobile banking for business payments	186	62.0
Internet banking	120	40.0
Digital payments to suppliers	168	56.0
Payment gateway / online marketplace receipts	78	26.0
Digital transaction history used for bookkeeping	111	37.0

The data indicate that UPI/QR-code payments are the most widely used digital transaction method, with 88.0% of businesses receiving payments through this mode, highlighting its popularity and convenience. Mobile banking (62.0%)**,**bank transfers such as NEFT/IMPS (59.0%)**,**and digital payments to suppliers (56.0%) are also commonly used, reflecting the growing adoption of digital financial practices among businesses. However, the use of debit/credit card payments (42.0%)**,**internet banking (40.0%)**,**and digital transaction records for bookkeeping (37.0%) is comparatively lower. Payment gateways and online marketplace receipts (26.0%) record the least usage, suggesting that many micro and small businesses still rely primarily on direct digital payment channels rather than formal e-commerce platforms.

Table 4.

Perceived Level of Business Benefits

Level	Frequency	Percentage
Low perceived benefit	48	16.0
Moderate perceived benefit	162	54.0
High perceived benefit	90	30.0
Total	300	100.0

The table shows that a majority of respondents (54.0%) perceive a moderate level of business benefits from the use of digital transactions, indicating that digital payment systems have contributed positively to their business operations. About 30.0% of respondents report a high level of perceived benefit, suggesting significant improvements in areas such as customer convenience, payment speed, and business efficiency. In contrast, only 16.0% perceive a low level of benefit, which may be due to limited usage, technical difficulties, or lack of digital awareness. Overall, the findings indicate that most micro and small businesses experience moderate to high benefits from adopting digital transaction methods.

Table 5.

Descriptive Analysis of Digital Transaction Usage and Related Business Outcomes

Variable	Mean	SD
Digital transaction usage	3.54	0.76
Payment convenience	3.78	0.68
Transaction efficiency	3.61	0.73
Digital record-keeping	3.22	0.82
Cash-flow visibility	3.34	0.79
Customer convenience	3.73	0.70
Perceived business performance	3.46	0.72
Digital literacy	3.29	0.81

The descriptive statistics indicate that respondents have a positive perception of digital transactions and their business benefits. Payment convenience (Mean = 3.78) and customer convenience (Mean = 3.73) received the highest scores, showing that digital payments simplify business transactions. Digital transaction usage (Mean = 3.54) and perceived business performance (Mean = 3.46) also recorded favorable levels. Overall, the moderate standard deviation values suggest a reasonable level of consistency in respondents' opinions regarding digital transaction adoption and its impact on business performance.

Table 6.

Multiple Regression Predicting Perceived Business Performance

Predictor	Standardised β	t	p
Digital transaction usage	0.29	4.96	< .001
Digital literacy	0.21	3.72	< .001
Digital record-keeping	0.24	4.18	< .001
Connectivity reliability	0.13	2.31	.022
Security concerns	-0.16	-2.88	.004

$R = 0.68$; $R^2 = 0.46$; Adjusted $R^2 = 0.45$; $F(5, 294) = 49.90$, $p < .001$.

The regression analysis indicates that the model significantly predicts perceived business performance ($R^2 = 0.46$, $F = 49.90$, $p < 0.001$), explaining 46% of the variation in business performance. Digital transaction usage ($\beta = 0.29$) emerged as the strongest positive predictor, followed by digital record-keeping ($\beta = 0.24$) and digital literacy ($\beta = 0.21$), indicating that greater adoption of digital technologies enhances business performance. Connectivity reliability ($\beta = 0.13$) also has a positive and significant effect on performance. In contrast, security concerns ($\beta = -0.16$) negatively influence business performance, suggesting that concerns about digital security may hinder the effective use of digital transactions among micro and small businesses.

Table 7

Relationship between Digital Transaction Usage and Business Outcomes

Business outcome	Correlation (r)	p
Payment convenience	0.62	0.002
Transaction efficiency	0.57	0.005
Digital record-keeping	0.48	0.011
Cash-flow visibility	0.44	0.018
Customer convenience	0.60	0.003
Overall perceived business performance	0.65	0.001

The correlation analysis shows a positive and statistically significant relationship between digital transaction usage and all business outcome variables. The strongest association is found with overall perceived business performance ($r = 0.65$, $p = 0.001$)**,**followed by payment convenience ($r = 0.62$, $p = 0.002$) and customer convenience ($r = 0.60$, $p = 0.003$)**.**Moderate positive relationships are observed with transaction efficiency ($r = 0.57$, $p = 0.005$)**,**digital record-keeping ($r = 0.48$, $p = 0.011$)**,**and cash-flow visibility ($r = 0.44$, $p = 0.018$)**.**These findings indicate that increased adoption of digital transactions contributes to better operational efficiency, customer service, financial management, and overall business performance among micro and small enterprises.

Table 8

Challenges Faced by Businesses

Challenge	Frequency	Percentage
Fraud / scam concerns	138	46.0
Network or connectivity problems	126	42.0
Failed or delayed transactions	111	37.0
Limited digital skills	96	32.0
Difficulty reconciling transactions	87	29.0
Customer preference for cash	81	27.0
Charges or uncertainty about costs	57	19.0

The table shows that fraud and scam concerns (46.0%) are the most significant challenge faced by businesses in adopting digital transactions, indicating apprehension about the security of online payments. This is followed by network or connectivity problems (42.0%) and failed or delayed transactions (37.0%), which hinder the smooth execution of digital payment activities. Additionally, limited digital skills (32.0%) and difficulty in reconciling transactions (29.0%) create operational challenges for business owners. Although customer preference for cash (27.0%) and charges or uncertainty about costs (19.0%) are reported by fewer respondents, they still act as barriers to

the wider adoption of digital transactions. Overall, security concerns and technological issues emerge as the major obstacles affecting the effective use of digital payment systems among micro and small businesses.

10. FINDINGS

- The majority of respondents (63%) belong to the 31-50 years age group, and 80% operate micro enterprises, indicating that digital transactions are widely used among small-scale business owners.
- UPI/QR-code payments emerged as the most preferred digital transaction method, used by 88% of the respondents, followed by mobile banking and bank transfers.
- More than half of the respondents (54%) reported a moderate level of business benefits from digital transactions, while 30% perceived a high level of benefit.
- Payment convenience and customer convenience recorded the highest mean scores, suggesting that digital transactions simplify business operations and improve customer service.
- Digital transaction usage showed a positive and significant relationship with payment convenience, transaction efficiency, record-keeping, cash-flow visibility, customer convenience, and overall business performance.
- The multiple regression analysis revealed that digital transaction usage, digital literacy, digital record-keeping, and connectivity reliability positively influence perceived business performance.
- Security concerns were found to have a negative impact on business performance, indicating that safety issues may hinder the effective use of digital payment systems.
- Fraud and scam concerns, network connectivity problems, and failed or delayed transactions emerged as the most important challenges faced by business owners.
- The findings suggest that greater adoption of digital transactions can enhance operational efficiency, customer reach, financial management, and overall business performance among micro and small businesses in Tamil Nadu.
- Improving digital literacy, cybersecurity awareness, and internet connectivity can further strengthen the benefits of digital transaction adoption in the MSME sector.

11 Conclusion

Digital transactions can be an important operational tool for micro and small businesses by providing additional ways to receive customer payments, pay suppliers, and maintain transaction histories. Their value may extend beyond payment speed when businesses integrate digital records into bookkeeping and cash-flow monitoring. Nevertheless, adoption alone does not guarantee improved sales or profitability. Outcomes depend on regular use, digital literacy, connectivity, customer behaviour, security, and the capacity to resolve transaction problems.

The proposed study provides a framework for examining these relationships among micro and small businesses in selected districts of Tamil Nadu. A field survey using a transparent sampling process and validated questionnaire can help determine which benefits are most commonly experienced and which barriers require attention. Until primary data are collected and analysed, all numerical results in this document should be treated as illustrative rather than empirical.

REFERENCES

- Rogers, E. M. (2003). *Diffusion of innovations* (5th ed.). Free Press.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, *27*(3), 425-478. https://doi.org/10.2307/30036540
- Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. *Borsa Istanbul Review*, *18*(4), 329-340. https://doi.org/10.1016/j.bir.2017.12.003
- Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). *The Global Findex database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19*. World Bank. https://doi.org/10.1596/978-1-4648-1897-4
- Ministry of Micro, Small and Medium Enterprises. (2024). *Annual report 2023-24*. Government of India. https://msme.gov.in
- Reserve Bank of India. (2024). *Report on trend and progress of banking in India 2023-24*. Reserve Bank of India. https://www.rbi.org.in
- Subramanian, M., Sekar, S., & Pugalanthi, S. (2024). *Digital entrepreneurship: Leveraging the growth and development of fintech and digital payments in Tamil Nadu*. Jammu and Kashmir Economic Association.
- Arputharaj, S., & Jerome, S. (2026). *The role of digital payment systems in promoting MSME growth and financial inclusion*. *International Journal of Commerce and Management Research*.
- Jeeva, K., & Malarvizhi, C. (2026). *A study on digital finance and its impact on financial inclusion with special reference to Tamil Nadu*. *International Journal of Innovative Science and Research Technology*.
- Joseph, E. T. (2026). *Digital payments and MSME credit access in India: UPI, data trails and the formalisation of small business finance*.

- *Humanities and Social Sciences Communications*. (2026). *Small-scale merchants' acceptance of UPI payment applications*. *Humanities and Social Sciences Communications*.

REFERENCES

Rogers, E. M. (2003). Diffusion of innovations (5th ed.). Free Press.

Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. MIS Quarterly, 27(3), 425-478. https://doi.org/10.2307/30036540

Ozili, P. K. (2018). Impact of digital finance on financial inclusion and stability. Borsa Istanbul Review, 18(4), 329-340. https://doi.org/10.1016/j.bir.2017.12.003

Demirgüç-Kunt, A., Klapper, L., Singer, D., Ansar, S., & Hess, J. (2022). The Global Findex database 2021: Financial inclusion, digital payments, and resilience in the age of COVID-19. World Bank. https://doi.org/10.1596/978-1-4648-1897-4

Ministry of Micro, Small and Medium Enterprises. (2024). Annual report 2023-24. Government of India. https://msme.gov.in

Reserve Bank of India. (2024). Report on trend and progress of banking in India 2023-24. Reserve Bank of India. https://www.rbi.org.in

Subramanian, M., Sekar, S., & Pugalanthi, S. (2024). Digital entrepreneurship: Leveraging the growth and development of fintech and digital payments in Tamil Nadu. Jammu and Kashmir Economic Association.

Arputharaj, S., & Jerome, S. (2026). The role of digital payment systems in promoting MSME growth and financial inclusion. International Journal of Commerce and Management Research.

Jeeva, K., & Malarvizhi, C. (2026). A study on digital finance and its impact on financial inclusion with special reference to Tamil Nadu. International Journal of Innovative Science and Research Technology.

Joseph, E. T. (2026). Digital payments and MSME credit access in India: UPI, data trails and the formalisation of small business finance.

Humanities and Social Sciences Communications. (2026). Small-scale merchants' acceptance of UPI payment applications. Humanities and Social Sciences Communications.