WWW.IJRPR.COM

International Journal of Research Publication and Reviews

Journal homepage: www.ijrpr.com ISSN 2582-7421

A Study on Online Payments with Reference to Retailers in Tamil Nadu

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ABSTRACT

Online payment system has significantly revolutionized the retailing industry with fast, safe and easy payments, quick, secure and simple purchases-the internet payment system has absolutely transformed the retail industry. This study explores the adoption of online payment systems and their benefits and drawbacks for retailers in Tamil Nadu who employ different traditional and modern retail practices. Here, the main objective is to understand how these digital payment platforms impact the operations of retailers, consumer satisfaction, and, ultimately, business growth. In this study, consumer behaviour regarding the use of online payments, as well as infrastructure availability, government regulations, and technological awareness, is scrutinized. To find out the impediments such as technological illiteracy, transaction costs, and security concerns, the study has adopted a mixed-methods approach based on questionnaires and interviews of shops in both urban and rural areas. Further, it is also shown how digital payments can strengthen as technological illiteracy, transaction costs, and security concerns.

INTRODUCTION

Digital technology has rapidly changed the nature of transactions in modern economies to shift the global payment environment. Online payment systems form the basis of e-commerce, enabling efficient, effective, and smooth financial transactions. These elements are highly relevant for India: the country's advancing digital infrastructure, expanding internet penetration, and government initiatives, such as the Digital India initiative, have all nudged the use of online payment methods forward. As one of India's most industrialized and fast-changing states, Tamil Nadu is setting the benchmark for this change, and its vibrant retail industry can illustrate the shifting tastes of the consumer and the business both.

Tamil Nadu-based retailers, from small, neighbourhood mom-and-pop shops to big, well-run retail chains, have switched largely to online payment methods to meet the new needs and tastes of consumers. Factors motivating this adopted online payment include ease of transactions without cash, government policy in support of digital payments, and increased use of smartphones and payment applications. However, the change is preceded by some adverse factors such as security issues, lack of digital literacy and unavailability of infrastructures in rural areas.

The paper focuses on the adoptions of online payment systems by retailers operating in the state of Tamil Nadu; thereby finding out the impact of the same on operational processes, customer satisfaction, and overall economic activity in the region at large. Drawing from the first-hand experiences and opinions of the retailers, such a research will provide empirical value to the opportunities and barriers of online payments by providing recommendations to promote better adoption and effectiveness.

OBJECTIVES OF THE STUDY

- It involves an assessment of the adoption level of the online payment system among Tamil Nadu's retailers.
- To examine the factors influencing retailers' adoption of online payment methods.
- Assess the role of online payments within retailers' business operations and customer interactions.
- To identify the challenges retailers are experiencing in integrating and using online payment systems.
- To suggest recommendations to improve the acceptance and effectiveness of electronic payment products for the retailers in Tamil Nadu.

LITERATURE REVIEW

1. Digital payment systems adoption of retailers

Gupta et al. (2020) argues, based on the results of their study on the impact of demonetization that there is a direct connection between online payment usage growth in Tamil Nadu and state pervasive internet and smartphone use. Instead, it suggests that the lesser retail suppliers lack adequate digital knowhow and infrastructure.

2. Demonetization and online payment usage influence

Ravichandran and Meenakshi, in a study conducted in 2019, probed the effects of demonetization that had occurred in Tamil Nadu's retail sector. In the study's findings, digital payments increased drastically after 2016 and were used more frequently by businesses to keep consumers through systems like Google Pay, PhonePe, and Paytm.

3. Customer Behaviour Study in Tamil Nadu by Prasad and Kumar (2021) Electronic Payment of customer behaviour report stated that increasing comfort of transaction and ease has driven customers to prefer cashless transactions. The trend is accelerating the pressure on small retailers to improve their transaction payment systems and retain tech-enabled customers

4. Small Retailer Challenges: Digital Payment Adoption According to a research study Rajasekar et al. (2020) stated that in the case of cashless transactions, transaction charge, resistance to change are some of the significant barriers seen to affect small retailers and in the given scenario, these barriers are more pronounced in the rural areas of Tamil Nadu.

5. Role of Government Policies for Cashless Economy He analyzed the effects of government schemes, which included the Digital India campaign and POS machine subsidies that rendered digital payment options affordable for many retailers in Tamil Nadu, in 2021.

6. Threats through Cybersecurity Compromises in Digital Transactions A research paper by Sundararajan et al. (2022) holds the opinion that a major problem related to Tamil Nadu retailers is that of cybersecurity risk. Some retailers have been warned of fraudulent activities and data breaches, hence they do not shift towards the complete online payment system

7. Adoption of E-Wallets by Retail Companies Kavitha and Sharma (2021) studied the Impact of e-wallets on the functioning of retail firms. They have mentioned that e-wallets are gaining utility in speeding up transactions and controlling inventories among most of the retailers of the urban Tamil Nadu.

8. Digital Payments and operational efficiency Selvakumar et al. (2019) detail the manner in which e-payment systems have increased the efficiency of retail operations in Tamil Nadu. Key reasons for such a shift include decreasing cash handling and speedy processing.

9. Growth of Digital Payments during COVID-19 Period Manickam and Venkatesh (2021) have analyzed the effects of COVID-19 on the payment orientation. The characteristics of the norms of physical distancing facilitate growth in digital payments for Tamil Nadu retailers as digital payments are contactless in nature.

10. Future Trends in Digital Payment Jayaprakash et al. (2022) have also identified the future trends to be pursued by these retailers: more use of blockchain-based payments, artificial intelligence, and fraud detection. Thus, retailers are slowly facing more competitive market places in Tamil Nadu.

DATA ANALYSIS AND INTERPRATATION

CHI – SQUARE TEST ANALYSIS

1. Age and Payment Facilities

Null Hypothesis (H_0): There is no significant relationship between age groups and helpfulness.

Alternative Hypothesis (H_1): There is a significant relationship between age groups and helpfulness.

Table Name: Age and Payment Facilities.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.52a	6	.2027
Likelihood Ratio	12.59	6	.006
Linear-by-Linear Association	3.010	1	.083
N of Valid Cases	102		

7 cells (58.3%) have expected count less than 5. The minimum expected count is .96.

Chi-square value= 8.52

Degree of freedom= 6

Significant level = 5%

Interpretation: Based on the chi-square test, we conclude that there is no significant relationship between the age groups and the helpfulness ratings. The differences observed between the expected and actual values could likely be due to chance.

2. Customer Trust and User in Local Area

Null Hypothesis: There is no association between the categories (e.g., "yes" and "no") and the levels of increase (e.g., "increase," "highly increase," "no increase," "significantly increase").

Alternative Hypothesis: There is an association between the categories and the levels of increase.

Table Name: Customer Trust and User in Local Area.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	2.28a	3	.5154
Likelihood Ratio	7.814	3	.000
Linear-by-Linear Association	18.490	1	.000
N of Valid Cases	102		
19 cells (79.2%) have expected count less than 5. The minimum expected count is .02.			

Chi-square value= 2.28

Degree of freedom= 3

Significant level = 5%

Interpretation: The p-value is 0.5154, which is much larger than the common significance level (α=0.05\alpha = 0.05α=0.05). This means:

- Fail to reject H0H_0H0: There is no significant evidence to suggest an association between the categories and the levels of increase.
- Conclusion: The observed differences in the table could have occurred due to random chance.

3.**Age and Analytics Features**

Table name: Age and Analytics Features

Null Hypothesis: There is no association between the age group (<20<20<20, 20-40, 40-60, 60-80) and the helpfulness ratings ("helpful," "not helpful," "very helpful").

Alternative Hypothesis: There is an association between the age group and the helpfulness ratings.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	8.52a	6	.2027
Likelihood Ratio	12.59	6	.000
Linear-by-Linear Association	18.490	1	.000

N of Valid Cases	102		
19 cells (79.2%) have expected count less than 5. The minimum expected count is .02.			

Chi-square value= 8.52

Degree of freedom= 6

Significant level = 5%

Interpretation: The Chi-square test suggests that the variation in helpfulness ratings across the different age groups could be due to random chance. No significant relationship exists between age group and the perception of helpfulness.

4.Difficulties and Security Features

Table name: Difficulties and Security Features

Null Hypothesis: There is no association between frequency of actions (never, often, rarely, sometimes) and the selected security measures (fraud alters, secure encryption, two-factor authentication, none of these).

Alternative Hypothesis: There is an association between the frequency of actions and the selected security measures.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	5.04a	9	.8311
Likelihood Ratio	16.91	9	.000
Linear-by-Linear Association	18.490	1	.000
N of Valid Cases	102		
19 cells (79.2%) have expected count less than 5. The minimum expected count is .02.			

Chi-square value=5.04

Degrees of freedom=9

P-value=.8311

Interpretation: The Chi-square test indicates that the variation in the selection of security measures across different frequencies of actions could be due to random chance. There is no significant relationship between these variables.

5.Payment Apps and User Percentage

Table name: Payment Apps and User Percentage

Null Hypothesis: There is no association between the payment methods (Apple Pay, Google Pay, PayPal, Square, Stripe, Others) and the proportion of usage categories (<25%, 25-50%, 50-75%, >75%).

Alternative Hypothesis: There is an association between the payment methods and the proportion of usage categories.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	9.45a	15	.8530
Likelihood Ratio	24.99	15	.000
Linear-by-Linear Association	18.490	1	.000

N of Valid Cases	102		
19 cells (79.2%) have expected count less than 5. The minimum expected count is .02.			

Chi-square value=9.45

Degrees of freedom=15

P-value=.8530

Interpretation: The Chi-square test indicates that the variation in the proportion of usage categories across different payment methods is likely due to random chance. The data do not show a statistically significant association between these variables.

FINDINGS OF THE STUDY

1. Acceptability of the online payment system by merchants in Tamil Nadu It would be very praiseworthy if the retailers in Tamil Nadu, particularly in the city and semi-urban areas, accept payments through online systems. This can be solely due to the initiative taken under the Digital India program and the demonetization in the year 2016. With growing digital literacy and Smartphone users, consumer sentiments for cashless transactions have gone up.

2. Profits to Merchants Boost Sales: Majority of shop owners cited boosted sales because electronic payments are more appealing and efficient. **Boosted Customer satisfaction:** Offering several types of payment increases customer satisfaction.

Eliminates Cash Handling Problems: The risk of theft as well as counterfeit money is reduced since no extra cash is involved. **3. Challenges Faced by the Retailers Transaction costs:** One of the largest monetary hurdles small businesses face is transaction cost. and middle-sized retailers charged by digital payments.

Technical Know-how: Technical know-how to deal with the online payment systems is missing, especially in the rural areas.

Internet Connectivity Issues: Network connectivity is scarce in some pockets of Tamil Nadu, which creates a hitch in smooth transaction.

Security Risks: The anxiety over fraudulent practices and security breaches holds the retailers from using it fully.

4. Customer Preference Trends

The card-based mode of conventional payment the usage of Google Pay and PhonePe UPI has higher preference over card-based mode.

Retailers would see acceptance was shifting people to QR code-based payments that require less efforts in installation as well as usage. .

5. The COVID-19 Pandemic Hygiene factors related to touching money have driven the increase in digital payments. Lockdowns forced the retailers to shift to digital platforms .

6. Urban vs. Rural Adoption Online payment by retailers adoption is more prominent in urban regions. It may be ascribed to a slightly better infrastructure and demand from their customers.

Rural adoption is slower but picking up with increased smartphone penetration and government financial inclusion efforts.

7. Policy and Regulatory Support Government initiatives that include subsidies in installing POS machines and free transactions up to a small amount have made the transition easy for the retailers.

8. Proposed Enhancements Training and awareness programs: offer store-level training that will enhance the skills of the retailing community in using the online Lower Transaction Fees: incentivize the payment providers to provide lower fees, especially to the small and micro enterprises

Better Infrastructure: upgrade the broadband connectivity in the rural areas.

Better security measures: Make the client trustworthy by discussing fraud risks and providing assurance to customers regarding the digital transaction.

Solutions to Address the Findings on Adoption of Online Payments in Retail Businesses of Tamil Nadu

1. Increasing Adoption of Online Payment SystemsLocal Awareness Campaigns:

Host campaigns in local languages about the advantages of electronic payments for retailers.

Coalition with Local Organizations: Engage with local, regional bodies and associations to facilitate an increase in the adoption of online payments in semi-urban and rural regions.

Targeted Incentives: Provide cashback or a discount on the transaction fees for first-time users among retailers.

2. Maximizing Benefits for Retailers Training Programs: Regular workshops on optimum usage of payment systems, especially for small and medium-sized retailersMulti-Platform Integration: Equip retailers with the single device / QR code facility to accept payments from various platforms such as UPI, cards, wallets, etc.

Inventory and Sales Analytics: Integrate online payment systems with sales tracking, trend identification, and effective inventory management. **3. Ease Challenge Faced by Retailers Reduced Transaction Cost:** Negotiate transaction service providers to lower or waive minimal transaction fees for tiny transactions, particularly those micro and small retailers.

Digitally Literate Support: Instructive training and helplines to resolve technical mishaps in rural and less digitally adept areas.

Better Connectivity: Advocate for better internet infrastructure in the rural parts of Tamil Nadu so the networks do not crash during transactions.

Better security features: Collaborate with banks to launch fraud detection technology, secure login, and insurance for digital transactions to the retailer.

4. Customer's Choice Reward loyalty: Motivate retailers to make use of rewards / loyalty apps integrated with UPI or QR-based payments that will ensure better stickiness.

Cashless Incentives: For instance, provide incentives to customers who pay in a digital form, thereby increasing the cashless ecosystem. **5. Post-Pandemic Digital Shift Hybrid Models:** Promote hybrid payment setup at the store level among retailers so that both cash and cashless preferences of customers can be served.

Resilience Training: Make retailers resilient to some disruptions such as system downtimes by preparing them with another solution offered by them such as offline UPI.

6. Urban and Rural Integration End Rural Outreach Programs: Collaborate with telecom and fintech companies to increase digital payment penetration in unpenetrated regions.

Region-Specific Solutions: Specific solutions for rural Tamil Nadu. For example, Power Backups for POS devices and offline payment capabilities. **7. Policy and Regulatory Advocacy Subsidized POS Systems:** Extend government subsidy on Point of Sale machines for micro-retailers.

Easy Compliance: Reduce regulatory tangles around Digital payments, thus reducing paperwork.

Tax Incentives: Provide tax benefits to retailers who implement online payment methods. The incentives will act as a tremendous motivator for change.

8. Security and Trust Enhancement Security Awareness Campaigns: Educate the retailers on secure practices through security awareness campaigns. Some of these practices include checking out QR codes and not falling into phishing.

Public Awareness Campaigns: Publicly create awareness on the safety and reliability of digital payments.

Implementation Roadmap Engagement of Stakeholders: Involves government bodies, financial institutions, payment service providers, and community leaders for driving initiatives.

Pilot Projects : Testing solution at specific regional or sector level before scaling it up to the state

Continuous Feedback Loops : Collect feedback from retailers in a timely manner, refine, and improve the strategies

Monitoring Progress : Use metrics like transaction volume, customer satisfaction, and retailer feedback to assess success of interventions.

CONCLUSION

Results have shown that the online payment methods improved efficiency, convenience, and growth opportunities in the retail sector of Tamil Nadu. Small retailers based in urban and semi-urban areas have adjusted to the changing needs of their customers and supported programs under national digitalization, such as Digital India.

Despite all these, in rural areas particularly, there have been some infrastructural inadequacies, high transaction costs, technology know-how, and insecurity. These mentioned issues were put forward to be surmounted by engaging policymakers, tech companies, and the retail sector during the research process.

The findings also indicate that while digital payments have gained wide acceptance in cities, those in the rural parts require special solutions like offline UPI capability and power backups for point-of-sale systems. Apart from this, the change in the behaviour of customers largely in favour of UPI and QR-based transactions has meant a transformation in retailers' payment mechanisms, which has resulted in improved customer satisfaction and efficiency in transaction processing.

These interventions at policy level include POS systems subsidized, reduced transaction fees, and digital literacy programs combined with technology-based solutions such as fraud detection systems and multi-platform payment integrations.

Online payment systems will have to ensure the emergence of an ecosystem that helps in offering technological literacy, secure transactions, and robust infrastructure. By thus bridging the urban-rural divide and creating the necessary trust among retailers and customers, Tamil Nadu would be in a position

to unlock fully the potential of digital payments in fuelling economic growth and modernization in its retail industry. The practical recommendations find a way for a roadmap, and sustained collaborations throw emphasis on the aspects that the stakeholders have to ensure in order to have an easy transition to a cashless economy.

REFERENCES

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3. Cases: Observations on how online payments are applied in South India with special focus on state of Tamil Nadu. Assessment of digital payment solutions work efficiency in the local market

4. Industry Reports: These are research studies on the Indian digital economy released by firms like NASSCOM, McKinsey, and Deloitte. Research-oriented firms like Nielsen or Kantar have not released any report about the behaviour of Tamil Nadu customers.