Retail Transformation in the Digital Era: Impact of UPI and Online Payment Systems

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ABSTRACT

The digital revolution has significantly transformed the retail sector worldwide. In India, the emergence of Unified Payments Interface (UPI) and various online payment systems has accelerated the transition towards a cashless economy. Digital payment technologies have improved operational efficiency, enhanced customer satisfaction and transformed the overall retail experience. The present study examines the impact of UPI and online payment systems on retail businesses in Kerala. A descriptive research design was adopted, and primary data were collected from 200 retailers through a structured questionnaire. The study concludes that UPI and online payment systems have become indispensable drivers of retail transformation and sustainable business growth in the digital era.

Keywords: Digital Payments, UPI, Retail Transformation, Customer Satisfaction, Business Efficiency, Cashless Economy.

INTRODUCTION

The rapid advancement of information and communication technology has transformed business operations worldwide. Among various technological developments, digital payment systems have emerged as one of the most influential innovations affecting the retail sector. Traditional retail businesses primarily depended on cash transactions for decades. However, changing customer expectations, increasing smartphone penetration, improved internet accessibility, and government initiatives promoting digital transactions have accelerated the adoption of cashless payment systems.

India has witnessed remarkable growth in digital payment adoption, particularly after the introduction of the Unified Payments Interface (UPI) by the National Payments Corporation of India (NPCI). UPI has simplified financial transactions by enabling instant fund transfers between bank accounts through mobile applications. Retailers are increasingly integrating digital payment systems into their business operations to enhance customer convenience and maintain competitiveness. Customers increasingly prefer digital transactions because they are faster, more secure, convenient, and transparent.

Digital payment systems contribute to retail transformation by reducing dependence on physical cash, improving record-keeping, enhancing transaction efficiency, and increasing customer satisfaction. At the same time, retailers face challenges such as network connectivity issues, cybersecurity threats, transaction failures, and technical complexities.

Statement of The Problem

Although several studies have examined customer behaviour and digital payment adoption, limited research has focused specifically on retailer perceptions in local retail markets. Existing studies primarily focus on customer experiences, while retailer perspectives remain relatively underexplored. Furthermore, there is limited evidence on the impact of UPI and other online payment systems on retail businesses in semi-urban regions. This study attempts to bridge this gap by examining retailer experiences, satisfaction levels, benefits, and challenges associated with digital payment adoption.

LITERATURE REVIEW

Nirmala Devi K. T & Vijayalakshmi S (2024) conducted a study and found that perceived usefulness, transaction convenience, and ease of use significantly influence retailers' adoption of UPI payment systems.

Sreeshavittala D & Ravi B (2024) reported that merchant adoption of UPI is positively influenced by performance expectancy, effort expectancy, and facilitating conditions.

Dinesh S, Jesiah S, Alamelu R, Amudha R, Shobhana N & Nalini R (2024) found that UPI significantly enhanced customer satisfaction, transaction efficiency, and purchasing convenience in the retail sector during and after the pandemic, reinforcing its role in India's digital payment ecosystem.

Atul Kumar et al. (2023) examined the impact of digitalisation on retail businesses. The study concluded that digital technologies, particularly digital payment systems, have enhanced customer satisfaction, operational efficiency, and business competitiveness.

Arpita Sharma et al. (2022) conducted a study on the role of UPI in promoting financial inclusion and digital payment services in India. The study found that UPI has significantly improved cashless transactions by providing secure, fast, and convenient payment facilities. Daneshwari Guddad and Pushparaj Kodaganur (2022) studied the challenges faced by small retail stores in adopting digital payment systems.

Princy Francis et al. (2021) investigated the factors influencing customer satisfaction in digital payment and e-commerce services. The study concluded that security, trust, convenience, and service quality positively influence customer satisfaction and encourage the continued use of digital payment systems.

Objectives Of The Study

The major objectives of the study are:

1. To examine the impact of UPI and digital payment systems on retail business operations.
2. To analyse consumer preference toward digital payment methods in retail transactions.
3. To evaluate the relationship between digital payment adoption and retail sales growth.

Hypotheses Of The Study

Ho: There is no significant relationship between digital payment systems and business efficiency.

Ha: There is a significant relationship between digital payment systems and business efficiency.

Ho: Customer preference does not significantly affect the adoption of digital payment systems.

Ha: Customer preference significantly affects the adoption of digital payment systems.

Ho: Digital payment adoption does not significantly influence retail business growth.

Ha: Digital payment adoption significantly influences retail business growth.

RESEARCH METHODOLOGY

Research Design

This study employs a descriptive research design using a cross-sectional research approach to examine the impact of UPI and online payment systems on retail businesses. The study was conducted among retailers operating in Kerala. Since the exact population size was not available, a non-probability convenience sampling technique was adopted. A total of 200 retailers were selected as respondents for the study.

Primary data were collected through a structured questionnaire administered directly to the respondents. The questionnaire consisted of demographic questions and statements measuring retailer perceptions regarding digital payment adoption, business efficiency, operational benefits, and challenges associated with UPI and online payment systems.

Data were analysed using SPSS. Instrument reliability was confirmed through Cronbach's alpha ($\alpha = 0.85$). The hypotheses were tested using one-way ANOVA and the Chi-square test, wherever appropriate.

Measurement

Retailers' perceptions of UPI and online payment systems were measured using a five-point Likert scale, where 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, and 5 = Strongly Agree.

ANALYSIS AND DISCUSSION

Data were collected between April 2026 and June 2026. The collected data were carefully classified, coded, tabulated, and analyzed using appropriate statistical techniques.

The demographic profiles of respondents in this research are shown in Table 1.

Table No. 1: Respondent Profile of Retailers

Profile Variable	Category	Frequency
Type of Business	Textile Shop	38
	Electronics Store	24
	Hotel	20
	Stationary & Grocery	40
	Super Market	15
	Fancy Store	22
	Others	41
Business Experience	Below 5 Years	27
	5-10 Years	120
	10 – 15 Years	19
	Above 15 Years	34

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Digital Payment Methods	UPI Only	133
	UPI & Debit/Credit Card	42
	UPI& Debit/Credit Card& Net Banking	25

Measurement Results

The following table presents the mean values and standard deviations of the retailers' responses to the statements measured on the five-point Likert scale. These statistical measures help evaluate the overall perception of retailers regarding the adoption and effectiveness of UPI and online payment systems.

Table No. 2: Digital Payments and Business Efficiency

Digital Payment Method	Sample size	Sum	Mean	SS
UPI Only (Google Pay, Paytm, PhonePe)	133	606.00	4.56	57.42
UPI & Debit/Credit Cards	42	196.00	4.67	13.33
UPI & Debit/Credit Cards &Net Banking	25	120.00	4.80	4.00
Grand Mean	**200**		**4.61**	

Anova Summary

Source	SS	DF	MS	*F*	*P* value
Between Groups	1.42	2	0.71	**1.87**	**0.1568**
Within Groups	74.75	197	0.38		
Grand Mean	**76.17**	**199**			

The results indicate that retailers using UPI only reported the positive impact of digital payment systems on business efficiency (Mean = 4.56). Respondents using UPI and Debit/Credit Cards also reported a positive perception of business efficiency (Mean = 4.67). Retailers using UPI, Debit/Credit Cards, and Net Banking recorded the highest mean score (Mean = 4.80), indicating a stronger perception of business efficiency. However, the differences among the groups were not statistically significant ($p = 0.1568$).

Hypothesis Testing

Ho: There is no significant relationship between digital payment systems and business efficiency.

Decision: Failed to **Reject**

Conclusion: The ANOVA results indicated that the differences among the groups were not statistically significant ($p > 0.05$).

Table No. 3: Customer Preference and Digital Payment Adoption

Preference * Adoption Crosstabulation		
Count	Adoption	Total

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		1	2	3	
Preference	1	117	7	6	130
	2	8	30	9	47
	3	8	5	10	23
Total		133	42	25	200

1=UPI Only; 2=UPI & Credit/Debit Cards; 3=UPI & Debit/Credit Cards &Net Banking)

Chi-Square Tests

	Value	df	Asymptotic Significance (2-sided)
Pearson Chi-Square	113.519[a]	4	.000
Likelihood Ratio	107.283	4	.000
Linear-by-Linear Association	63.574	1	.000
N of Valid Cases	200		

a. 2 cells (22.2%) have expected count less than 5. The minimum expected count is 2.88.

Table 3 presents the cross-tabulation between customer preference for digital payment methods and retailers' adoption of different digital payment systems. Among the 130 respondents with a high preference for digital payments, 117 retailers primarily adopted UPI only, while only 7 and 6 retailers adopted UPI with Debit/Credit Cards and UPI with Debit/Credit Cards and Net Banking, respectively. Among respondents with a moderate level of preference, 30 retailers adopted UPI with Debit/Credit Cards, whereas respondents with low preference showed comparatively higher adoption of multiple digital payment options.

The Pearson Chi-square test yielded a value of $\chi^2 = 113.52$ with 4 degrees of freedom, and the *p*-value was less than 0.001, indicating a statistically significant association between customer preference and digital payment adoption. Since the significance value is below the 0.05 level, the null hypothesis is rejected.

The findings suggest that customer preference plays a significant role in influencing retailers' adoption of digital payment methods. Retailers appear to select payment systems that align with customer expectations and transaction preferences. The results indicate that stronger customer preference for digital payments is associated with greater adoption of UPI-based payment systems, highlighting the importance of consumer demand in driving digital payment acceptance among retailers.

Hypothesis Testing

H_0: Customer preference does not significantly affect the adoption of digital payment systems.

Decision: Rejected

Conclusion: There is a **significant relationship** between customer preference and digital payment adoption (**$\chi^2(4) = 113.52$, $p < .001$**).

Table No. 4: Digital Payment Adoption and Retail Growth

Digital Payment Method	Sample size	Sum	Mean	SS
UPI Only (Google Pay, Paytm, PhonePe)	133	629.00	4.70	6.26

UPI & Debit/Credit Cards	42	198.00	4.71	10.57
UPI & Debit/Credit Cards &Net Banking	25	118.00	4.75	5.04
Grand Mean	**200**		**4.71**	

Anova Summary

Source	SS	DF	MS	F	P value
Between Groups	0.01	2	0.004	**0.04**	**0.9649**
Within Groups	21.87	197	0.111		
Grand Mean	**21.88**	**199**			

The findings indicate that retailers using UPI, Debit/Credit Cards, and Net Banking reported the highest level of agreement (Mean = 4.75) regarding the contribution of digital payment systems to retail business growth. Retailers across all three payment categories expressed favourable perceptions regarding the contribution of digital payment systems to retail business growth, with mean scores ranging from 4.70 to 4.75. However, the ANOVA results indicate that these differences were not statistically significant ($F = 0.04$, $p = .9649$).

Hypothesis Testing

H_0: Digital payment adoption does not significantly influence retail business growth

Decision: Failed to reject **($p > .05$)**

Conclusion: The differences among the groups were minimal and statistically insignificant

Major Findings

a. All 200 surveyed retailers reported using at least one digital payment method, indicating universal adoption of digital payment systems among the sample.

b. UPI emerged as the most preferred digital payment platform, with 66.5% of retailers relying exclusively on UPI transactions.

c. Retailers generally perceived digital payment systems as improving business efficiency, with an overall mean score of 4.61.

d. Although retailers using multiple payment options recorded slightly higher mean scores for business efficiency, the ANOVA results revealed that these differences were not statistically significant (p = 0.1568).

e. Customer preference has a significant positive influence on the adoption of digital payment systems among retailers, as confirmed by the Chi-square test ($\chi^2(4) = 113.52$, $p < .001$).

f. Retailers expressed a highly positive perception regarding the contribution of digital payment systems to retail business growth, with mean scores exceeding 4.70 across all groups.

g. Retailers perceived digital payment systems as improving transaction speed, customer convenience, accounting accuracy, and operational efficiency, demonstrating the transformative role of digital payment technologies in retail businesses.

h. Customer demand and changing market trends emerged as the major drivers influencing retailers to adopt digital payment technologies.

i. The findings indicate that customer preference significantly influences retailers' adoption of digital payment systems, reinforcing the role of consumer demand in accelerating retail digitalisation.

Suggestions

a. Government agencies and financial institutions should strengthen digital infrastructure, particularly internet connectivity in semi-urban and rural areas, to ensure uninterrupted digital transactions.

b. Banks, NPCI, and local trade associations should organise regular digital literacy and financial technology training programmes for retailers to improve awareness and effective utilisation of advanced digital payment systems.

c. Financial institutions should strengthen cybersecurity mechanisms through multi-factor authentication, fraud detection systems, and regular awareness programmes to improve retailer confidence.

d. Small retailers should be provided with affordable digital payment infrastructure, including QR code systems, POS terminals, and technical support through government assistance programmes.

e. Banks should simplify grievance redressal mechanisms to ensure faster resolution of failed or delayed digital transactions.

f. Retailers should diversify their digital payment options beyond UPI by integrating card payments and net banking to improve customer convenience.

g. Future studies should examine digital payment adoption among retailers across different states and business sectors using larger probability-based samples for greater generalizability.

h. Policymakers should continue promoting cashless transactions through awareness campaigns and incentive schemes that encourage digital payment adoption among small and medium enterprises.

i. Banks should encourage small retailers to adopt integrated digital payment platforms by providing low-cost merchant solutions and incentive-based programmes.

CONCLUSION

The study concludes that UPI and online payment systems have brought a significant transformation to the retail sector. Digital payments have improved transaction speed, business efficiency, customer convenience, and record management. The increasing adoption of UPI demonstrates a shift towards a cashless economy and reflects changing consumer preferences. The findings reveal that retailers generally have a positive attitude toward digital payment systems and recognise their numerous advantages.

Therefore, it can be concluded that digital payment systems have had a positive and transformative impact on retail businesses, contributing to operational efficiency, customer satisfaction, and long-term business growth. This study confirms that digital payments are no longer an alternative payment option but have become an essential component of modern retail business practices.

REFERENCES

1. Dinesh, S., Jesiah, S., Alamelu, R., Amudha, R., Shobhana, N., & Nalini, R. (2024). Posterior estimates to measure the effectiveness of the Unified Payment Interface in the retail sector during and after the pandemic: A comparative study. AIP Conference Proceedings, 3180(1). https://doi.org/10.1063/5.0224712

2. Francis, P., Sudeep, S., & Kumar, A. (2021). Impact of factors affecting customer satisfaction in e-commerce among Indian consumers: An empirical study. *International Journal of Indian Culture and Business Management*, *24*(1), 81–102. https://doi.org/10.1504/IJICBM.2021.117876
3. Guddad, D., & Kodaganur, P. (2022). Significant challenges in digital payments with reference to digitalization of small retail stores in the Indian context: A theoretical assimilation. *International Journal of Research Publication and Reviews*, *3*(12), 264–272. https://doi.org/10.55248/gengpi.2022.31204
4. Kumar, A., Gawande, A., & Brar, V. (2023). Digitalization in the retail business: A strategy to gain a competitive edge. *Asian Journal of Management*, *14*(2), 129–132. https://doi.org/10.52711/2321-5763.2023.00020
5. K.T. Nirmala Devi, & S. Vijayalakshmi. (2024). A study on the factors influencing the retailer to adopt UPI payment system. ShodhKosh: Journal of Visual and Performing Arts, 5(6), 1655–1660. https://doi.org/10.29121/shodhkosh.v5.i6.2024.2490
6. Sharma, A., Bhimavarapu, V. M., Kanoujiya, J., Barge, P., & Rastogi, S. (2022). Financial inclusion: An impetus to the digitalization of payment services (UPI) in India. *The Journal of Asian Finance, Economics and Business*, *9*(9), 191–203. https://doi.org/10.13106/jafeb.2022.vol9.no9.0191
7. Sreeshavittala D, & Dr. Ravi. B. (2024). A Study on UPI Adoption among Merchant Outlets in Kalyana Karnataka. South India Journal of Social Sciences, 22(1), 28-38. https://doi.org/10.62656/SIJSS.v22i1.110