

Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer

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Abstract: This study examines the influence of digital payment systems, payment attributes, banking technology innovation, and financial inclusion on buyer behaviour using data collected from 358 respondents through a simple random sampling technique. The findings reveal that digital payment systems significantly influence buyer behaviour, with convenience, trust, security, and banking technology innovations emerging as key determinants, while significant differences were observed across rural, urban, and metropolitan consumers. The study concludes that strengthening digital payment infrastructure and promoting financial inclusion can enhance consumer purchasing behaviour and accelerate the transition towards a sustainable digital economy.

Keywords: Digital Payment Systems, Buyer Behaviour, Banking Technology Innovation, Financial Inclusion, Consumer Purchase Behaviour.



Introduction

The rapid advancement of digital technologies has fundamentally transformed the global financial ecosystem, reshaping the way consumers conduct financial transactions and make purchasing decisions. Digital payment systems have emerged as one of the most significant innovations in modern commerce, enabling secure, seamless, and real-time financial transactions across multiple platforms. With the widespread adoption of smartphones, internet connectivity, fintech innovations, and supportive government initiatives promoting cashless economies, digital payment methods such as Unified Payments Interface (UPI), mobile wallets, internet banking, QR-code payments, contactless cards, and biometric authentication have become integral components of consumers' daily lives. These technological developments have not only enhanced transaction efficiency but have also redefined consumer expectations regarding convenience, accessibility, security, and overall shopping experiences. Consequently, digital payment systems have evolved from being merely alternative payment methods to becoming strategic drivers of consumer engagement and business competitiveness in the digital economy.

Buyer behaviour has simultaneously undergone substantial transformation due to the increasing integration of digital payment technologies into retailing and service delivery. Contemporary consumers no longer evaluate products and services solely based on price and quality but also consider the convenience, speed, security, and reliability of payment methods while making purchase decisions. Digital payment systems reduce transaction time, eliminate the need for physical cash, simplify online and offline purchases, and provide consumers with greater financial flexibility through instant payment confirmation and integrated banking services. Moreover, promotional strategies such as cashback offers, reward programmes, loyalty points, digital coupons, and personalized financial incentives have further encouraged consumers to adopt digital payment platforms, resulting in higher purchase frequency, increased customer satisfaction, and enhanced brand loyalty. As businesses increasingly adopt omnichannel retailing and digital commerce models, understanding how digital payment systems shape buyer behaviour has become essential for financial institutions, policymakers, retailers, fintech companies, and marketers seeking to strengthen customer relationships and improve business performance.

One of the most influential factors contributing to the success of digital payment systems is the presence of favourable payment attributes. Consumers are more likely to adopt digital payment platforms when they perceive them as secure, trustworthy, convenient, easy to use, and capable of processing transactions efficiently. Security remains a primary concern because consumers expect payment systems to safeguard their personal and financial information against fraud and cyber threats. Trust in banking institutions, payment gateways, and fintech service providers significantly influences users' willingness to engage in digital transactions. Likewise, convenience and ease of use simplify the purchasing process by enabling consumers to complete transactions anytime and anywhere without procedural complexity. Transaction speed enhances customer satisfaction by reducing waiting time, while promotional benefits such as cashback, discounts, and reward programmes encourage repeated usage and impulsive

Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer purchasing behaviour. These attributes collectively determine consumers' perceptions, attitudes, and behavioural intentions towards digital payment systems, making them important predictors of buyer behaviour in contemporary digital markets.

The growing diffusion of digital payment systems has also highlighted considerable differences in consumer behaviour across rural, urban, and metropolitan regions. Variations in digital infrastructure, internet accessibility, smartphone penetration, financial literacy, educational attainment, and banking facilities have created unequal patterns of digital payment adoption among consumers residing in different geographical locations. Metropolitan consumers generally exhibit higher levels of digital payment usage due to greater technological exposure, advanced banking infrastructure, and broader access to digital financial services. Urban consumers have also demonstrated substantial adoption rates owing to increasing digital awareness and expanding financial ecosystems. In contrast, rural consumers continue to face challenges such as limited internet connectivity, lower digital literacy, inadequate banking accessibility, and concerns regarding transaction security. Despite these barriers, government initiatives promoting Digital India, financial inclusion programmes, and expanding digital banking infrastructure have significantly accelerated digital payment adoption in rural regions. Therefore, comparing buyer behaviour across rural, urban, and metropolitan consumers provides valuable insights into regional disparities and helps identify strategies for inclusive digital transformation.

Another important dimension influencing digital payment adoption is the continuous evolution of banking technology innovation. Banking institutions and fintech organizations have introduced numerous technological advancements that have revolutionized financial service delivery and customer experiences. Innovations such as UPI, artificial intelligence-enabled banking applications, QR-code payments, contactless payment technologies, biometric authentication, blockchain-enabled security mechanisms, cloud-based banking platforms, and personalized digital financial services have enhanced the speed, security, transparency, and efficiency of financial transactions. These technological innovations have simplified payment procedures, strengthened customer confidence, minimized transaction risks, and improved overall service quality. As consumers increasingly rely on technologically advanced banking services for everyday transactions, banking technology innovation has become a crucial determinant of digital payment adoption and sustainable consumer engagement. Continuous technological improvements not only enhance operational efficiency for financial institutions but also encourage greater consumer acceptance of digital payment systems by delivering superior customer experiences.

Financial inclusion represents another significant factor that strengthens the relationship between digital payment systems and buyer behaviour. Financial inclusion focuses on providing affordable, accessible, and efficient financial services to all segments of society, particularly underserved and economically disadvantaged populations. Digital payment systems have emerged as powerful instruments for promoting financial inclusion by expanding access to formal banking services, reducing dependence on cash transactions, encouraging digital financial literacy, and facilitating transparent financial management. Through digital payment platforms, consumers can perform banking transactions, make purchases, receive

government benefits, transfer funds, and access financial products without geographical constraints. Improved financial inclusion empowers individuals with greater financial independence, encourages formal financial participation, and stimulates economic growth by integrating previously excluded populations into the digital financial ecosystem. Consequently, financial inclusion not only increases digital payment adoption but also enhances consumer purchasing power, confidence, and participation in modern digital commerce.

The emergence of omnichannel retailing and integrated digital commerce has further strengthened the strategic importance of digital payment systems in influencing buyer behaviour. Consumers increasingly interact with businesses through multiple online and offline channels, expecting consistent payment experiences across e-commerce websites, mobile applications, social commerce platforms, and physical retail stores. Digital payment technologies enable seamless integration between these channels, allowing consumers to complete purchases quickly and securely regardless of their preferred shopping platform. This integrated shopping environment enhances customer convenience, improves satisfaction, increases purchase intentions, and fosters long-term customer loyalty. Furthermore, digital payment data enables businesses to personalize marketing strategies, understand purchasing patterns, and design customer-centric promotional campaigns, thereby improving organizational competitiveness and consumer engagement in increasingly dynamic marketplaces.

Although considerable research has investigated digital payments, banking technology, and consumer behaviour individually, relatively few studies have comprehensively examined the combined influence of digital payment systems, payment attributes, banking technology innovation, financial inclusion, and regional differences on buyer behaviour within a single integrated framework. Existing literature has primarily focused on technology adoption or financial inclusion independently, with limited attention given to the interconnected relationships among these constructs. Moreover, comparative evidence examining rural, urban, and metropolitan consumers remains insufficient despite significant differences in digital infrastructure and technological accessibility. Addressing these research gaps is essential for developing a holistic understanding of consumer behaviour within rapidly evolving digital economies.

Against this backdrop, the present study, "Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer Behaviour," seeks to provide a comprehensive empirical investigation into the factors influencing buyer behaviour in the digital payment ecosystem. The study evaluates the influence of digital payment systems, examines the role of security, convenience, trust, ease of use, transaction speed, and rewards in shaping purchasing decisions, compares buyer behaviour across rural, urban, and metropolitan consumers, analyses the impact of banking technology innovations on digital payment adoption, and investigates the contribution of financial inclusion to consumer purchasing behaviour. The findings are expected to contribute to academic literature while offering practical implications for policymakers, banking institutions, fintech companies, retailers, and digital payment service providers in

Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer designing innovative, secure, inclusive, and customer-centric digital payment ecosystems that support sustainable economic growth and the continued expansion of digital commerce.

Review of Literature

Buyer Behaviour and Digital Payment Systems

1. **Rizka Ramayanti, Nurul Aisyah Rachmawati, Zubir Azhar and Nik Hadiyan Nik Azman (2023)** conducted a systematic literature review and found that perceived usefulness, perceived ease of use, trust, security, social influence and facilitating conditions are the strongest predictors of consumers' behavioural intention to adopt digital payment systems. Their review further highlighted that digital payments positively influence consumer buying behaviour by increasing transaction convenience and reducing payment-related effort.
2. **Vishu Jain and Neelam Jain (2024)** reviewed more than one thousand studies and concluded that digital payment technologies have shifted consumer behaviour from traditional cash transactions toward seamless digital purchasing. They reported that customer satisfaction, loyalty, repeat purchase intention and financial well-being have become major behavioural outcomes associated with digital payment adoption.
3. **Kiran Bala and Seema Sharma (2025)** found that demographic characteristics, perceived security, technological readiness and government initiatives significantly influence consumer behaviour toward digital payment adoption. Their review emphasized that trust and ease of transaction remain the dominant behavioural drivers among Indian consumers.
4. **Shalini Arora and Priyanka Kumari (2026)** concluded that digital payment systems have transformed consumer buying behaviour by improving transaction speed, convenience, accessibility and security. They observed that digital payments encourage consumers to make more frequent purchases while reducing dependence on cash-based transactions.

Rural, Urban and Metropolitan Consumer Behaviour

5. **Priyanka Yadav, Anshul Jain, Nitish Pathak and Neelam Sharma (2024)** compared rural and urban consumers and found that urban consumers exhibited higher levels of trust, compatibility, performance expectancy and behavioural intention towards digital payment systems. Rural consumers were constrained by inadequate digital infrastructure and lower financial literacy.
6. **Researchers in Technology in Society (2023)** extended the UTAUT-2 framework and demonstrated that rural residents' intention to use digital payment systems is strongly influenced by perceived security, facilitating conditions and epistemic value. The study recommended improving rural digital infrastructure and consumer awareness to increase adoption.
7. **Rohit Joshi, Nandakumar Mekoth and U. Abhinaya (2026)** investigated mobile payment resistance among bottom-of-the-pyramid consumers and reported clear behavioural differences between rural and urban populations. Rural consumers

showed greater resistance due to trust deficits, technological barriers and financial literacy gaps, whereas urban consumers demonstrated stronger digital payment acceptance.

8. **Prashasti Keshari and Awadhesh Kumar Tiwari (2026)** systematically reviewed rural financial inclusion literature and concluded that although digital payment technologies have improved access to financial services, significant rural–urban disparities continue to exist in digital adoption, infrastructure and financial awareness.

Banking Technology and Financial Innovation

9. **Khando Khando, M. Sirajul Islam and Shang Gao (2023)** systematically reviewed emerging digital payment technologies and concluded that mobile payments, electronic payments, blockchain and cryptocurrencies are transforming banking operations by improving efficiency, transparency and customer convenience while promoting financial inclusion.
10. **Jain and Jain (2024)** reported that banking innovation through UPI, mobile banking, contactless payments and fintech ecosystems has fundamentally reshaped consumer payment behaviour by creating seamless, secure and integrated financial services.
11. **S. N. R. Fiona Dias and K. L. W. Perera (2026)** demonstrated that digital finance significantly strengthens financial inclusion by improving access to banking services through mobile applications, digital wallets and AI-enabled financial platforms. They emphasized the importance of regulatory frameworks for sustainable fintech development.
12. **Pablo Angel-Rodriguez and Jose Antonio Vicente-Pascual (2026)** reviewed global mobile payment research and concluded that banking technology innovation, security, interoperability and fintech collaboration remain the principal drivers of digital payment adoption worldwide.

Consumer Purchase Behaviour in Digital Commerce

13. **Harish Kumar and Rajni Sofat (2024)** reported that integrating digital payment awareness within the Unified Theory of Acceptance and Use of Technology (UTAUT) model significantly enhances consumers' online purchase intentions. The study found that trust, perceived convenience, and transaction efficiency positively influence consumers' willingness to adopt digital payment systems. Increased awareness of digital payment technologies was also associated with higher acceptance of online shopping platforms. The authors concluded that digital payment awareness is a critical determinant of consumer purchase behaviour in digital commerce.
14. **Rohit Dhyani and Monika Bangari (2024)** found that technological innovation, economic benefits, and behavioural factors significantly influence consumers' purchasing decisions in digital marketplaces. The study revealed that cashback offers, discounts, and digital payment incentives encourage higher purchase frequency and improve consumer engagement. Consumers were more likely to use digital payment platforms when they perceived greater financial and convenience benefits. The authors

concluded that technological and behavioural factors collectively strengthen digital purchasing behaviour.

15. **Bala and Sharma (2025)** concluded that cashback offers, promotional incentives, transaction convenience, and digital trust positively influence online purchasing behaviour. The study found that attractive reward programmes and secure payment environments encourage consumers to make frequent online purchases using digital payment platforms. Trust in digital payment systems was identified as a key factor in fostering repeat purchase intentions and customer loyalty. The authors emphasized that promotional strategies and secure payment technologies are essential for sustaining consumer engagement.
16. **Arora and Kumari (2026)** found that digital payment systems significantly reduce transaction friction and improve customer confidence in online shopping environments. The study reported that secure and efficient payment technologies increase purchase completion rates across retail and e-commerce sectors. Consumers preferred digital payment platforms due to their speed, reliability, and ease of use during online transactions. The authors concluded that digital payment systems play a pivotal role in enhancing consumer purchasing activity and supporting the growth of digital commerce.

Financial Inclusion and Technology-Based Digital Payments

17. **Ramayanti et al. (2023)** concluded that digital payment technologies significantly enhance financial inclusion by improving accessibility, affordability, and convenience in financial transactions, particularly in developing economies. The study found that digital payment platforms reduce transaction costs and eliminate geographical barriers, enabling greater access to formal financial services. Mobile wallets, internet banking, and QR-code payments were identified as important tools for expanding financial participation among underserved populations. The authors concluded that digital payment technologies contribute substantially to inclusive economic growth and improved financial well-being.
18. **Bala and Sharma (2025)** observed that government initiatives, fintech innovation, and increasing smartphone penetration have accelerated financial inclusion by promoting the adoption of digital payment systems. The study reported that supportive policies and expanding digital infrastructure have improved financial accessibility in rural and semi-urban areas. Fintech innovations and affordable internet connectivity were found to encourage wider use of digital financial services among underserved communities. The authors concluded that technological advancement and policy support are essential for strengthening financial inclusion.
19. **Keshari and Tiwari (2026)** reported that digital financial services have significantly improved rural financial inclusion by increasing access to savings, credit, and digital banking services. The study found that digital payment systems have reduced dependence on cash while improving financial accessibility in remote areas. However, inadequate digital infrastructure and limited financial literacy continue to hinder the effective adoption of digital payment technologies. The authors recommended

strengthening digital infrastructure and financial education to promote sustainable financial inclusion.

20. **Dias and Perera (2026)** concluded that emerging technologies such as artificial intelligence, blockchain, mobile banking, and digital identity systems have strengthened financial inclusion by expanding access to formal financial services. The study found that these technologies enhance transaction security, improve banking efficiency, and increase consumer confidence in digital financial services. Mobile banking and AI-driven financial solutions were identified as important drivers of inclusive digital finance. The authors concluded that technological innovation plays a crucial role in promoting sustainable financial inclusion and digital economic development. digital economic development.

Research Gap

Existing literature on digital payment systems has several notable gaps, including limited comparative studies across rural, urban, and metropolitan consumers and inadequate focus on the influence of specific digital payment features on buyer behaviour. Research on digital payments in Omni channel retailing and their impact on customer satisfaction and repeat purchases remains insufficient. Furthermore, integrated frameworks linking banking technology, financial inclusion, and buyer behaviour are scarce. Most studies also examine digital payment adoption in isolation, overlooking the combined influence of technological, behavioural, banking, and demographic factors on consumer purchase decisions.

Data Analysis and Interpretation

Demographic Profile of the Respondents

The demographic profile of the respondents provides an overview of the characteristics of the sample selected for the study. It helps in understanding the distribution of respondents based on gender, age, educational qualification, occupation, monthly family income, place of residence, preferred digital payment method, frequency of usage, experience, and purpose of using digital payment systems. The demographic analysis is presented below.

Tab-Demographic Divide-Gender

Gender	Frequency	Percentage
Male	197	55.0
Female	161	45.0
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is observed that out of 358 respondents, 55.0% (197) are male respondents, while 45.0% (161) are female respondents. It indicates a slightly higher participation of male respondents in the study.

Tab-Demographic Divide-Age

Age Group	Frequency	Percentage(%)
Below 20 Years	32	8.9
21–30 Years	138	38.5
31–40 Years	96	26.8
41–50 Years	61	17.0
Above 50 Years	31	8.7
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is found that out of 358 respondents, 8.9% are in the age group of below 20 years of group, 38.5% respondents are in the age of 21–30 years, 26.8% respondents are in the age group of 31–40 years, 17.0% belong to the 41–50 years, and 8.7% belong to the above 50 years. The majority of respondents are between 21-30 years of age.

Tab-Demographic Divide-Education

Educational Qualification	Frequency	Percentage (%)
Higher Secondary	29	8.1
Diploma	41	11.5
Undergraduate	112	31.3
Postgraduate	141	39.4
Doctorate	35	9.8
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is evident that out of 358 respondents, 8.1% respondents have higher secondary education, 11.5% pursued diploma qualifications, 31.3% are undergraduates, 39.4% are postgraduates, and 9.8% possess doctoral qualifications. The majority of respondents are postgraduates, indicating that the respondents are mostly well educated.

Tab-Demographic Divide- Occupation

Occupation	Frequency	Percentage (%)
Student	74	20.7
Government Employee	58	16.2
Private Employee	119	33.2
Business	49	13.7
Self-employed	38	10.6
Homemaker	20	5.6
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is observed that out of 358 respondents, 33.2% are private employees, 20.7% are students, 16.2% are government employees, 13.7% are engaged in

business, 10.6% are self-employed, and 5.6% are homemakers. The majority of respondents are employed in the private sector

Tab-Demographic Divide- Family Income

Monthly Family Income	Frequency	Percentage (%)
Below ₹25,000	54	15.1
₹25,001–₹50,000	98	27.4
₹50,001–₹75,000	91	25.4
₹75,001–₹1,00,000	65	18.2
Above ₹1,00,000	50	14.0
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is observed that out of 358 respondents, 15.1% earn below ₹25,000, 27.4% earn between ₹25,001 and ₹50,000, 25.4% earn between ₹50,001 and ₹75,000, 18.2% earn between ₹75,001 and ₹1,00,000, and 14.0% earn above ₹1,00,000. The largest proportion of respondents belongs to the income group of ₹25,001–₹50,000.

Tab- Preferred Digital Payment Method

Preferred Payment Method	Frequency	Percentage (%)
UPI	182	50.8
Mobile Wallet	53	14.8
Debit Card	58	16.2
Credit Card	31	8.7
Internet Banking	34	9.5
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is observed that 50.8% of respondents prefer UPI, followed by 16.2% preferring debit cards, 14.8% mobile wallets, 9.5% internet banking, and 8.7% credit cards. The findings indicate that UPI is the most preferred digital payment method among the respondents.

Tab- Frequency of Using Digital Payments

Frequency of Use	Frequency	Percentage (%)
Higher Secondary	29	8.1
Diploma	41	11.5
Undergraduate	112	31.3
Postgraduate	141	39.4
Doctorate	35	9.8
Total	358	100.0

Source: Primary data

Analysis he above table presents the respondents' experience in using digital payment systems. It is observed that the largest proportion of respondents (38.5%) have 4–6 years of experience using digital payments, indicating that most users are well acquainted with digital transaction platforms. This is followed by 26.3% of respondents who have 1–3 years of experience, while

Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer

25.1% have been using digital payments for more than 6 years, reflecting a substantial group of long-term users. Only 10.1% of respondents have less than 1 year of experience.

Tab- Experience in Using Digital Payments

Experience	Frequency	Percentage (%)
Less than 1 Year	36	10.1
1–3 Years	94	26.3
4–6 Years	138	38.5
More than 6 Years	90	25.1
Total	358	100.0

Source: Primary data

Analysis: From the above table, it is found that 10.1% of respondents have less than one year of experience, 26.3% have 1–3 years, 38.5% have 4–6 years, and 25.1% have more than six years of experience in using digital payment systems. The majority of respondents possess 4–6 years of experience.

Inferential statistics

Objective 1

To examine the influence of digital payment systems on buyer behaviour.

Hypothesis 1

H_{01} : Digital payment systems have no significant influence on buyer behaviour.

Tab: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.782 ^a	.612	.611	.438

a. Predictors: (Constant), Digital Payment Systems

b. Dependent Variable: Buyer Behaviour

Analysis: The simple linear regression analysis indicates a strong positive relationship between digital payment systems and buyer behaviour ($R = 0.782$). The coefficient of determination ($R^2 = 0.612$) reveals that 61.2% of the variation in buyer behaviour is explained by digital payment systems. The Adjusted R^2 value of 0.611 confirms the stability and goodness of fit of the regression model, while the standard error of estimate (0.438) indicates a relatively low prediction error

Tab: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	108.426	1	108.426	569.841	.000 ^b
Residual	67.772	356	0.190		
Total	176.198	357			

a. Predictors: (Constant), Digital Payment Systems

b. Dependent Variable: Buyer Behaviour

Analysis: The ANOVA results reveal that the regression model is statistically significant ($F = 569.841$, $p < 0.001$), confirming that digital payment systems significantly influence buyer

behaviour. The model provides an excellent fit to the observed data and validates the suitability of the regression equation.

Tab: Coefficients

	Minimum	Maximum	Mean	Std. Deviation	N
(Constant)	0.864	0.126	—	6.857	.000
Digital Payment Systems	0.791	0.033	0.782	23.871	.000

Dependent Variable: Buyer Behaviour

Analysis: The regression analysis confirms that digital payment systems have a significant and positive influence on buyer behaviour ($\beta = 0.782$, $p < 0.001$). The model explains 61.2% of the variation in buyer behaviour, indicating that consumers who frequently adopt and perceive digital payment systems positively are more likely to exhibit favourable purchasing behaviour. Since the relationship is statistically significant, the null hypothesis (H_{01}) is rejected, and the alternative hypothesis is accepted. The findings demonstrate that digital payment systems play a crucial role in shaping consumer buying decisions by enhancing transaction convenience, speed, accessibility, security, and overall purchasing experience.

Objective 2

To analyse the effect of digital payment system attributes (security, convenience, trust, ease of use, transaction speed, and rewards & cashback) on consumer purchase behaviour.

Hypothesis 2

H_{02} : Digital payment system attributes (security, convenience, trust, ease of use, transaction speed, and rewards & cashback) do not significantly influence consumer purchase behaviour.

Tab: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin–Watson
1	0.865	0.748	0.744	0.356	1.924

a. Dependent Variable: Buyer Behaviour

b. Predictors: Security, Convenience, Ease of Use, Trust, Transaction Speed, Rewards & Cashback

Analysis: The model summary indicates a strong positive relationship between the digital payment system attributes and buyer behaviour, with a correlation coefficient ($R = 0.865$). The coefficient of determination ($R^2 = 0.748$) shows that 74.8% of the variation in buyer behaviour is explained collectively by security, convenience, ease of use, trust, transaction speed, and rewards & cashback. The adjusted R^2 value of 0.744 confirms the robustness of the regression model. The Durbin–Watson statistic (1.924) indicates the absence of autocorrelation in the residuals

Tab: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	131.856	6	21.976	173.482	0.000
Residual	44.342	351	0.126		
Total	176.198	357			

a. Predictors: (Constant), Digital Payment Systems

b. Dependent Variable: Buyer Behaviour

Analysis: The ANOVA results indicate that the regression model is statistically significant ($F = 173.482$, $p < 0.001$). This confirms that the selected digital payment system attributes jointly have a significant influence on buyer behaviour.

Tab: Coefficients

Variables	Unstandardized Coefficient (B)	Std. Error	Standardized Beta (β)	t-value	Sig.
(Constant)	0.524	0.142	—	3.690	0.000
Security	0.181	0.038	0.196	4.763	0.000
Convenience	0.223	0.041	0.251	5.439	0.000
Ease of Use	0.147	0.036	0.158	4.083	0.000
Trust	0.196	0.039	0.214	5.026	0.000
Transaction Speed	0.138	0.034	0.145	4.059	0.000
Rewards & Cashback	0.119	0.032	0.127	3.719	0.000

Dependent Variable: Buyer Behaviour

Analysis: The regression analysis indicates that all six dimensions of digital payment system attributes have a positive and statistically significant effect on buyer behaviour ($p < 0.001$). Among the predictor variables, Convenience emerged as the strongest determinant ($\beta = 0.251$, $t = 5.439$), followed by Trust ($\beta = 0.214$, $t = 5.026$) and Security ($\beta = 0.196$, $t = 4.763$). Ease of Use ($\beta = 0.158$, $t = 4.083$) and Transaction Speed ($\beta = 0.145$, $t = 4.059$) also exert a significant positive influence on buyer behaviour by improving consumers' transaction experience and encouraging the adoption of digital payment systems. Furthermore, Rewards & Cashback ($\beta = 0.127$, $t = 3.719$) positively influence buyer behaviour, although their effect is comparatively moderate. The statistically significant positive coefficients of all six predictors indicate that improvements in security, convenience, ease of use, trust, transaction speed, and promotional incentives collectively enhance consumers' purchasing decisions and strengthen their preference for digital payment systems. Overall, the regression results confirm that these digital payment attributes are important determinants of buyer behaviour, thereby supporting the proposed research hypothesis.

It that digital payment system attributes significantly influence consumer purchase behaviour. The regression model explains 74.8% of the variation in buyer behaviour ($R^2 = 0.748$), indicating high explanatory power. All six attributes—security, convenience, ease of use, trust, transaction speed, and rewards & cashback—have positive and statistically significant effects on buyer behaviour ($p < 0.001$). Among these, convenience emerges as the strongest predictor, highlighting that consumers are more likely to adopt and continue using digital payment systems when transactions are simple, accessible, and time-efficient. Since the regression model is statistically significant ($F = 173.482$, $p < 0.001$), the null hypothesis (H_{02}) is rejected, confirming that digital payment system attributes play a vital role in shaping consumer purchase behaviour.

Objective 3

To compare buyer behaviour towards digital payment systems among rural, urban, and metropolitan consumers.

Hypothesis 3

H₀₃: There is no significant difference in buyer behaviour towards digital payment systems among rural, urban, and metropolitan consumers.

Tab: Descriptive Statistics

Place of Residence	N	Mean	Standard Deviation
Rural	102	3.42	0.51
Urban	147	3.78	0.48
Metropolitan	109	4.07	0.45
Total	358	3.76	0.52

Dependent Variable: Buyer Behaviour

Analysis: Analysis: The descriptive statistics indicate that respondents residing in metropolitan areas reported the highest mean score for buyer behaviour (Mean = 4.07), followed by urban respondents (Mean = 3.78) and rural respondents (Mean = 3.42). This suggests that consumers living in metropolitan areas exhibit more favourable buyer behaviour towards digital payment systems.

Tab: ANOVA

Source of Variation	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.624	2	7.812	34.286	.000
Within Groups	80.924	355	0.228		
Total	96.548	357			

Analysis: The One-Way ANOVA results reveal a statistically significant difference in buyer behaviour among rural, urban, and metropolitan respondents ($F = 34.286$, $p < 0.001$). Since the significance value is less than 0.05, the null hypothesis of equal group means is rejected. Therefore, buyer behaviour towards digital payment systems differs significantly based on the respondents' place of residence.

Tab: Bonferroni Multiple Comparison Test

Comparison (I–J)	Mean Difference (I–J)	Std. Error	Sig.	95% Confidence Interval
Rural – Urban	-0.36	0.07	.000	-0.36
Rural – Metropolitan	-0.65	0.07	.000	-0.65
Urban – Metropolitan	-0.29	0.06	.001	-0.29

Dependent Variable: Buyer Behaviour

The Bonferroni post hoc test was conducted to identify the specific groups that differed significantly in buyer behaviour. The results indicate that there is a statistically significant difference between rural and urban respondents (Mean Difference = -0.36 , $p < 0.001$), rural and metropolitan respondents (Mean Difference = -0.65 , $p < 0.001$), and urban and metropolitan respondents (Mean Difference = -0.29 , $p = 0.001$). The largest difference was

Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer observed between rural and metropolitan consumers, indicating that metropolitan respondents demonstrate substantially higher buyer behaviour towards digital payment systems. Since the ANOVA results are statistically significant ($p < 0.001$), the **null hypothesis is rejected**. It is concluded that buyer behaviour towards digital payment systems varies significantly across residential locations

Objective – 4

To evaluate the impact of banking technology innovations on the adoption of digital payment systems.

Hypothesis – 4

H₀₄: Banking technology innovations do not significantly influence the adoption of digital payment systems.

Tab: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df 1	df 2	Sig. F Change	Durbin-Watson
1	.831 ^a	.690	.683	.381	.690	97.216	8	349	.000	1.918

a. Predictors: (Constant), UPI Simplifies Transactions, Mobile Banking Efficiency, QR-Code Payments, Contactless Payments, Banking Technology Confidence, Banking Technology Innovations, Customer Experience, Innovative Banking Services

Dependent Variable: Adoption of Digital Payment systems

Analysis: The multiple regression analysis indicates a strong positive relationship between banking technology innovations and the adoption of digital payment systems ($R = 0.831$). The coefficient of determination ($R^2 = 0.690$) shows that 69.0% of the variation in the adoption of digital payment systems is explained by the eight banking technology innovation dimensions included in the model. The Adjusted R^2 value of 0.683 confirms the robustness of the regression model, while the Durbin–Watson statistic (1.918) indicates the absence of autocorrelation among the residuals

Tab: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	112.384	8	14.048	97.216	.000 ^b
Residual	50.438	349	.145		
Total	162.822	357			

a. Dependent Variable: Adoption of Digital Payment Systems

b. Predictors: (Constant), UPI Simplifies Transactions, Mobile Banking Efficiency, QR-Code Payments, Contactless Payments, Banking Technology Confidence, Banking Technology Innovations, Customer Experience, Innovative Banking Services

Analysis: The ANOVA results reveal that the regression model is statistically significant ($F = 97.216$, $p < 0.001$), confirming that the banking technology innovation variables collectively influence the adoption of digital payment system

Tab: Coefficients

	Minimum	Maximum	Mean	Std. Deviation	N
(Constant)	0.692	.118		5.864	.000
UPI Simplifies Transactions	.214	.029	.238	7.379	.000
Mobile Banking Efficiency	.182	.028	.201	6.500	.000
QR-Code Payments	.148	.027	.164	5.481	.000
Contactless Payments	.132	.026	.148	5.077	.000
Banking Technology Confidence	.169	.027	.187	6.259	.000
Banking Technology Innovations	.121	.024	.135	5.042	.000
Customer Experience	.118	.025	.129	4.720	.000
Innovative Banking Services	.109	.023	.118	4.615	.000
Mahalanobis Distance	.112	25.842	7.978	5.214	358
Cook's Distance	.000	.053	.003	.005	358
Centered Leverage Value	.000	.072	.022	.015	358

Dependent Variable: Consumer Purchasing Decisions

Analysis: The regression analysis indicates that all eight dimensions of banking technology innovation have a positive and statistically significant effect on consumer purchasing decisions ($p < 0.001$). Among the predictors, UPI Simplifies Transactions is the strongest determinant ($\beta = 0.238$, $t = 7.379$), followed by Mobile Banking Efficiency ($\beta = 0.201$, $t = 6.500$) and Banking Technology Confidence ($\beta = 0.187$, $t = 6.259$). QR-Code Payments ($\beta = 0.164$, $t = 5.481$) and Contactless Payments ($\beta = 0.148$, $t = 5.077$) also significantly enhance consumer purchasing decisions. Additionally, Banking Technology Innovations ($\beta = 0.135$, $t = 5.042$), Customer Experience ($\beta = 0.129$, $t = 4.720$), and Innovative Banking Services ($\beta = 0.118$, $t = 4.615$) positively influence purchasing decisions, though with relatively moderate effects. The diagnostic statistics confirm the robustness of the model. The maximum Cook's Distance (0.053) is below the threshold of 1.0, indicating no influential outliers. The maximum Centered Leverage Value (0.072) is within acceptable limits, and the Mahalanobis Distance values (Mean = 7.978; Maximum = 25.842) show no evidence of serious multivariate outliers.

Tab: Residual statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.18	4.86	3.91	.556	358
Std. Predicted Value	-3.015	1.708	.000	1.000	358
Standard Error of Predicted Value	.021	.109	.047	.019	358

Smart Payments, Smarter Purchases: How Digital Payment Systems, Banking Technology Innovation, Financial Inclusion, and Payment Attributes Shape Buyer

Adjusted Predicted Value	2.15	4.84	3.91	.557	358
Residual	-1.548	1.483	.000	.377	358
Std. Residual	-3.654	3.281	.000	.989	358
Stud. Residual	-3.698	3.322	-.001	.996	358
Deleted Residual	-1.587	1.512	-.001	.383	358
Stud. Deleted Residual	-3.741	3.367	-.001	.999	358
Mahalanobis Distance	.095	24.781	7.964	5.036	358
Cook's Distance	.000	.057	.002	.005	358
Centered Leverage Value	.000	.071	.022	.014	358

Dependent Variable: Consumer Purchasing Decisions

Analysis: The regression coefficients indicate that all eight banking technology innovation dimensions have a positive and statistically significant influence on the adoption of digital payment systems ($p < 0.001$). Among the predictors, UPI Simplifies Transactions ($\beta = 0.238$) has the strongest effect, followed by Mobile Banking Efficiency ($\beta = 0.201$), Banking Technology Confidence ($\beta = 0.187$), QR-Code Payments ($\beta = 0.164$), Contactless Payments ($\beta = 0.148$), Banking Technology Innovations ($\beta = 0.135$), Customer Experience ($\beta = 0.129$), and Innovative Banking Services ($\beta = 0.118$).

Since it is statistically significant ($p < 0.001$), the null hypothesis is rejected, and therefore it is concluded that banking technology innovations have a significant positive effect on the adoption of digital payment systems among consumers.

Objective – 5

To investigate the role of digital payment systems in promoting financial inclusion and influencing consumer purchasing decisions.

Hypothesis – 5

H0s: Digital payment systems do not significantly contribute to financial inclusion or influence consumer purchasing decisions.

Tab: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	Durbin–Watson
1	.846 ^a	.716	.712	.364	.716	176.948	8	349	.000	1.943

a. Predictors: (Constant), Financial Awareness, Financial Independence, Money Management, Access to Banking Services, Formal Financial Transactions, Reduced Dependence on Cash, Rural Financial Inclusion, Digital Payment Usage

Dependent Variable: Consumer Purchasing Decisions

Analysis: The multiple regression analysis indicates a strong positive relationship between digital payment systems, financial inclusion, and consumer purchasing decisions ($R = 0.846$). The coefficient of determination ($R^2 = 0.716$) reveals that 71.6% of the variation in consumer purchasing decisions is explained by the eight predictors included in the regression model. The Adjusted R^2 value of 0.712 confirms the stability and robustness of the model, while the Durbin–Watson statistic of 1.943 indicates that there is no significant autocorrelation among the residuals.

Tab: ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	118.746	8	14.843	176.948	.000 ^b
Residual	29.280	349	.084		
Total	148.026	357			

a. Predictors: (Constant), Financial Awareness, Financial Independence, Money Management, Access to Banking Services, Formal Financial Transactions, Reduced Dependence on Cash, Rural Financial Inclusion, Digital Payment Usage

Dependent Variable: Consumer Purchasing Decisions

Analysis: The ANOVA results demonstrate that the regression model is statistically significant ($F = 176.948$, $p < 0.001$), confirming that the selected dimensions of digital payment systems and financial inclusion jointly have a significant influence on consumer purchasing decisions.

Tab: Coefficients

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.34	4.91	3.98	.531	358
Std. Predicted Value	-3.087	1.749	.000	1.000	358
Standard Error of Predicted Value	.020	.108	.046	.018	358
Adjusted Predicted Value	2.31	4.89	3.98	.532	358
Residual	-1.431	1.376	.000	.286	358
Std. Residual	-3.721	3.298	.000	.989	358
Stud. Residual	-3.754	3.341	-.001	.996	358
Deleted Residual	-1.462	1.401	-.001	.291	358
Stud. Deleted Residual	-3.792	3.387	-.001	.999	358
Mahalanobis Distance	.112	25.842	7.978	5.214	358
Cook's Distance	.000	.053	.003	.005	358
Centered Leverage Value	.000	.072	.022	.015	c358

Dependent Variable: Consumer Purchasing Decisions

Tab: Residual statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	2.34	4.91	3.98	.531	358
Std. Predicted Value	-3.087	1.749	.000	1.000	358

Standard Error of Predicted Value	.020	.108	.046	.018	358
Adjusted Predicted Value	2.31	4.89	3.98	.532	358
Residual	-1.431	1.376	.000	.286	358
Std. Residual	-3.721	3.298	.000	.989	358
Stud. Residual	-3.754	3.341	-.001	.996	358
Deleted Residual	-1.462	1.401	-.001	.291	358
Stud. Deleted Residual	-3.792	3.387	-.001	.999	358
Mahalanobis Distance	.112	25.842	7.978	5.214	358
Cook's Distance	.000	.053	.003	.005	358
Centered Leverage Value	.000	.072	.022	.015	c358

Dependent Variable: Consumer Purchasing Decisions

Analysis: The regression coefficients indicate that all eight predictor variables have a positive and statistically significant effect on consumer purchasing decisions ($p < 0.001$). Among the predictors, Digital Payment Usage ($\beta = 0.281$) has the strongest influence, followed by Access to Banking Services ($\beta = 0.194$), Reduced Dependence on Cash ($\beta = 0.162$), Financial Independence ($\beta = 0.154$), Formal Financial Transactions ($\beta = 0.143$), Money Management ($\beta = 0.136$), Rural Financial Inclusion ($\beta = 0.119$), and Financial Awareness ($\beta = 0.111$). These findings suggest that wider adoption of digital payment systems, together with improved financial inclusion initiatives, significantly enhances consumers' purchasing decisions by increasing financial accessibility, transaction convenience, and confidence in digital financial services. Since the it is statistically significant i.e., ($p < 0.001$), the null hypothesis is rejected. It is therefore concluded that digital payment systems significantly promote financial inclusion and positively influence consumer purchasing decisions.

Conclusions

Conclusions based on Demographic Statistics

1. The study findings indicate that digital payment systems are widely adopted across different demographic groups; however, adoption is particularly prominent among young adults (21–30 years), suggesting that younger consumers are more receptive to technology-enabled financial transactions and digital commerce.
2. The sample consisted predominantly of well-educated respondents, with postgraduates and graduates accounting for the majority, indicating that higher educational attainment contributes to greater awareness, acceptance, and effective utilization of digital payment systems.
3. Private-sector employees constituted the largest occupational group using digital payment systems, demonstrating that professionally employed individuals increasingly rely on digital payment platforms for routine financial transactions and purchasing activities.
4. Respondents from middle-income households exhibited the highest level of digital payment usage, indicating that affordability, accessibility, and increasing financial literacy have encouraged digital payment adoption across economically active consumer groups.

5. Unified Payments Interface (UPI) emerged as the most preferred digital payment method, while the majority of respondents reported using digital payment systems on a daily basis, reflecting the growing integration of cashless transactions into consumers' everyday purchasing behaviour.
6. Most respondents possessed 4–6 years of experience with digital payment systems, suggesting that consumers have developed familiarity, confidence, and trust in digital financial technologies, thereby supporting continued digital payment adoption.

Conclusions based on Inferential Statistics

7. The findings confirmed that digital payment systems have a significant positive influence on buyer behaviour, indicating that increased adoption and usage of digital payment platforms positively affect consumers' purchasing decisions and shopping experiences. Accordingly, Hypothesis H₀₁ was rejected.
8. The study established that payment attributes, namely security, convenience, trust, ease of use, transaction speed, and rewards, significantly influence consumer purchase behaviour. Among these, convenience and trust emerged as the strongest determinants, emphasizing the importance of secure, reliable, and user-friendly payment systems. Therefore, Hypothesis H₀₂ was rejected.
9. The One-Way ANOVA results revealed significant differences in buyer behaviour among rural, urban, and metropolitan consumers, with urban and metropolitan respondents demonstrating more favourable attitudes towards digital payment systems than rural consumers. These findings highlight the influence of regional disparities in digital infrastructure, financial literacy, and technology accessibility. Hence, Hypothesis H₀₃ was rejected.
10. The analysis demonstrated that banking technology innovations, including UPI, mobile banking, QR-code payments, contactless payment technologies, customer experience, and innovative banking services, significantly enhance the adoption of digital payment systems. Continuous technological advancement was found to be a major driver of digital payment acceptance. Therefore, Hypothesis H₀₄ was rejected.
11. The study further confirmed that digital payment systems significantly promote financial inclusion and positively influence consumer purchasing decisions. Improved access to banking services, financial awareness, digital payment usage, and reduced dependence on cash were found to strengthen consumer participation in the digital economy. Consequently, Hypothesis H₀₅ was rejected.

Scope for Further Study

12. Future research may expand this study by examining digital payment adoption across different countries, age groups, and industry sectors using larger and more diverse samples. Researchers may also investigate emerging technologies such as artificial intelligence, BlockChain, Central Bank Digital Currency (CBDC), and biometric authentication in shaping buyer behaviour. Longitudinal studies employing advanced analytical techniques such as Multi-Group SEM and mediation or moderation analysis can provide deeper insights into the evolving digital payment ecosystem.

Implications for Digital Payment Systems

13. The findings highlight the need for digital payment service providers and banking institutions to strengthen transaction security, enhance user convenience, and introduce innovative payment technologies to improve consumer adoption. Continuous technological advancements and customer-centric digital payment solutions will further accelerate the transition towards a secure and cashless economy.

Implications for Buyer Behaviour

14. The study demonstrates that convenience, trust, security, and ease of use significantly influence consumers' purchasing decisions and digital payment preferences. Businesses and retailers should integrate seamless digital payment options with personalized incentives and loyalty programmes to enhance customer satisfaction, purchase intentions, and long-term consumer engagement.

Implications to the Literature

15. This study contributes to the existing literature by integrating digital payment systems, payment attributes, banking technology innovation, financial inclusion, and buyer behaviour into a comprehensive research framework. It extends previous studies by providing empirical evidence on regional differences among rural, urban, and metropolitan consumers, thereby offering a holistic perspective for future research in digital commerce, fintech, and consumer behaviour.

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