

**DIGITAL TRANSFORMATION OF SMALL FAMILY BUSINESSES: UNPACKING
DIGITAL PAYMENT USAGE BEHAVIOUR**

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Abstract

Small family-owned businesses in developing markets are increasingly using digital payment solutions. Further investigation of their digital transformation, particularly the acceptance of various payment methods is obviously needed. Using the Theory of Planned Behaviour (TPB) to investigate the factors influencing the adoption of digital payment systems by small family companies, this study analyses how digital literacy affects the behaviour associated with digital payment usage in family-owned enterprises. A structured questionnaire was used to collect data from 300 small family business owners in Delhi and surrounding areas in North India. The analysis was carried out using Structural Equation Modelling-Partial Least Squares (SEM-PLS). The findings show that social norms, attitudes, and perceived behavioural control all have a substantial influence on digital payment usage behaviour. This study presents a theoretical addition by extending the TPB framework with the inclusion of digital literacy, which is yet underexplored in the context of emerging markets.

Keywords: Digital Transformation, Family Business; Digital Payments, Digital Literacy, Technology Adoption.

1. INTRODUCTION

Digital transformation is related to enhancing a firm's capabilities to synchronize all its functions leading to the creation of innovative processes, business models, and hence promising business opportunities (Appleton et al., 2025; Ancillai et al., 2023; Ano and Bent, 2022). Family businesses including smaller ones, are reported to find it more difficult to embrace digitalisation in comparison with non-family firms (Gao et al., 2026). However, they need to tweak their approach to digitalisation to stay creative and innovative and hence competitive in the dynamic entrepreneurial landscape (Mukti et al., 2023). One of the main drivers of digital transformation is digital payments. The term "Digital Payment" refers to transactions that may take place wholly online, in contrast to more conventional means of payment such as cash and cheques (Singh, Sahni, and Kovid 2021). Digital payment

methods are gaining popularity as a dependable digital payment option in developed as well as developing countries (Abdul-Haim et al., 2022).

Over the last several years, India has seen a small but steady increase in the percentage of people using digital payment methods. As a direct result of steps taken by the government of India, such as demonetisation and digital India, a greater number of individuals in India are utilising digital payment methods. The expansion of digital payment methods has been designated as a key initiative of the Indian government, which aims at making more and more Indians having access to digital payment options that are not only practical but also cheap, quick, and safe. The growth of digital payments is largely supported by the increasing number of mobile users in India. According to some estimations, mobile phone penetration in India was 76.6 percent in year 2022, Based on these trends, it is reasonable to expect a substantial rise in the number of mobile internet users worldwide and smartphone users in India and is estimated to be around 86 percent by 2026 (Statista, 2024). This growth will further contribute to digital transformation and connectivity in many industries.

The ability to send and receive monetary transactions online is essential for the functioning of online payment systems. A digital method may be used by either the person making the payment or the person receiving it. There is an availability of digital payment alternatives available in India, which serves a diverse group of customers. Credit and debit cards, the Aadhar Enabled Payment Services (AEPS), the universal payment interface (UPI), point-of-sale terminals, online and mobile banking, the national electronic total collection system, and micro-ATMs are some of the electronic payment alternatives available. The increase in growth of digital transactions may be related to causes such as increased smartphone usage, government initiatives to promote digital payments, and the adoption of revolutionary payment systems (Farouk, F.M., 2026). It means the number of yearly digital transactions per individual would have furthermore risen, indicating the increasing reach and use of digital payment systems across the whole country. Consequently, there has been a rise in both the frequency and monetary worth of digital transactions in India. On the other hand, as compared to other countries, India has a relatively low annual digital transaction volume per capita (BIS, 2019). India's low performance might be attributed to a combination of factors, including the country's massive population and the fact that not everyone there makes use of digital payment systems (Linh and Huyen, 2025).

During the current age of digital technology, businesses possess advantages as well as disadvantages compared to bigger corporations (Diatha, 2018). The fact that consumers have an option of payment options to choose from is, from the perspective of the vendor, a positive development. Customers who purchase in retail establishments are more likely to pay using digital payment methods due to their convenience, security, and traceability. However, many Indian company owners, particularly owners of small businesses, do not accept digital payments for a variety of reasons. Some of these reasons include the pricing structure of digital payment systems, illiteracy rates, and a lack of available cash. The meaning of the words that came before may be understood without any difficulty (CUTS International, 2018a).

Several barriers make it difficult for smaller enterprises in India to implement digital payment systems. So, what makes small businesses go for more use of digital payments is still under researched in India, an emerging market. Therefore, this study, contextualised in Delhi-NCR area of India, aims at identifying the characteristics that motivate independently owned firms

to employ digital payment methods. It, specifically, focuses on the factors that support digital payment methods. The findings of the study would also provide insights for the decision-making process of firms which have already made the transition to digital payment services. Moreover, suppliers of digital payment services may more effectively persuade other small businesses to adopt digital payment services. So, the study has following research questions:

- What are the factors affecting digital payment system adoption by small family businesses in India?
- Identify the relative influence of factors on the adoption of digital payment services by small family businesses in India.

2. LITERATURE REVIEW

Rapid development of technology has directly contributed to the emergence of digital payment methods, which has also accelerated the process towards greater financial inclusion (Tiwari, Srivastava & Kumar, 2019). Several theoretical frameworks including Innovation Diffusion Theory (IDT), theory of reasoned actions (TRA), technology adoption model (TAM), and theory of planned behaviour (TPB) have been employed to describe the determinants of individuals' adoption of new technologies (Fishbein & Ajzen, 1975). The theories are insightful under which this research investigates digital payment systems adoption among small family enterprises (Bejaković & Mrnjavac, 2020).

According to the TRA, individual behavior is directly affected by intentions that are created by one's attitude and subjective norms towards the specific behavior. TRA suggests that behaviors are driven by one's attitude toward the behavior and social pressures perceived. The theory suggests how firmly established norms and beliefs play a central role in determining the adoption or non-adoption of new technologies (Fishbein & Ajzen, 1975). The IDT, designed by Rogers (1962), assists in explaining the dissemination of new technologies and concepts across social populations. IDT asserts that adoption varies across a population and occurs over time based on innovation attributes, communication channels, time, and prevailing social structures. This model proves useful to account for why small family businesses are expected to adopt electronic payment systems more slowly, based on their specific characteristics and functional problems.

The TAM, created initially by Davis (1989) and then extended to TAM2 by Venkatesh and Davis (2000), is specifically designed for technology adoption and specifically tests the impact of factors like ease of use and perceived usefulness. TAM2 builds on this to cover cognitive and social implications of technology acceptance. The model has seen extensive usage, for instance, in studies on the adoption of digital payments, as indicated by more recent research (Dutta et al., 2023).

TPB augments TRA with perceived behavioral control, which measures a person's belief about being able to perform a behavior. TPB argues that behavior is driven by intention and perceived control, and this applies best in small businesses where perceived ease of difficulty of acceptance of digital payments drives intention as well as action (Ajzen, 1991). The theory thus provides a suitable framework for examination and prediction of acceptance of digital payments in small family businesses.

2.1 Digital transformation and small family businesses

Digital transformation is increasingly at the centre of family business research, as digitalization drives different innovations (Appleton & Holt, 2024; Issah and Calabro, 2024; Stojcic, Prokop and Stejskal, 2025). However, evidence of ownership and control by the family is unclear. While some research links family management with obstacles balanced by non-family managers (Canjun, Lelin and Changxin, 2025), others emphasize the unique resources of family managers to support digital adoption (Yilmaz et al., 2024). Such discrepancies suggest that family willingness has a key bearing on digital transformation, especially in the use of digital payments.

2.2 Small family Businesses willingness in family business research

Family firm willingness, unlike clearly defined ability, is broad and governed by internal and external factors. Internally, culture, values, traditions, and socio-emotional wealth requirements shape motivations such as commitment, loyalty, and trust (Holt & Daspit, 2015; Appleton, et al., 2025). Externally, closeness of collaborators, organizational structure, openness of ecosystem, and institutional context shape willingness (Guenther et al., 2023). Although family firms have the potential to innovate, they are considered less willing due to risk aversion and reluctance to decentralize decision-making authority (Kastanakis et al., 2025; Appleton et al., 2025). Understanding such dynamics is essential to grasping how small family enterprises participate in digital change, that is, whether they are willing to adopt digital payment systems.

2.3 Digital Payment Systems: Benefits and Challenges

Digital payment systems offer numerous advantages for both customers and merchants. For customers, these systems provide speed, convenience, and enhanced transparency in transactions (Appleton et al., 2025). For businesses, especially small family-owned firms, adopting digital payments can enable them to handle smaller transactions efficiently, reduce the need for cash handling, minimize theft risk, increase financial transparency, and streamline financial processes (Townsend, 2019). Despite these benefits, the adoption of digital payment systems by small businesses has been relatively slow due to various perceived barriers, including digital literacy, perceived risk, and trust issues.

3. HYPOTHESES DEVELOPMENT

3.1 Attitude Towards Digital Payment System

The inclination of small family businesses to adopt digital payment systems is heavily shaped by their attitude toward these methods. The TPB suggests that a favourable view of digital payments, particularly in terms of convenience, security, and efficiency, can strongly motivate the intention to adopt these technologies (Ajzen, 1991; Morshed, A., 2025). Research by Choudhury and Harrigan (2014) supports this, demonstrating that small businesses are more inclined to implement digital payment solutions when they perceive these tools as accessible and advantageous. Underscore the importance of ease of use in the adoption process, noting that fostering a positive outlook on digital payments is essential to achieving successful digital transformation within these businesses.

H1: Attitude towards Digital Payment positively influences intentions to use Digital Payment.

3.2 Subjective Norms

Subjective norms, or perceived social pressure to perform or avoid a particular behaviour, are critical in the digital adoption path of small family companies. The TPB believes that these standards can have a significant impact on a company's willingness to accept digital payments. People often respond to expectations from key individuals in their lives, such as family, customers, or business partners (Ajzen, 1991). Oliveira et al. (2016) found that opinions from peers and customers heavily impact small businesses' decisions to embrace digital payment options. Similarly, Slade et al. (2015) emphasize the role of societal norms, suggesting that businesses are more likely to implement digital payment systems if they view them as widely accepted or customary within their industry or community.

H2: Subjective norms positively influence intentions to use Digital Payment.

3.3 Perceived Behavioral Control

It encompasses an individual's assessment of how easy or challenging it is to perform a specific behavior. According to the Theory of Planned Behavior (TPB), people are more inclined to engage in a behavior when they feel equipped with the necessary resources and skills (Ajzen, 1991). Within the digital payment's context, this perception includes factors like technology access, technical skill, and supportive infrastructure (Lai, 2017). Zhou (2013) emphasizes that favourable conditions significantly influence digital payment adoption, indicating that reducing perceived obstacles and boosting the sense of control for small family businesses can encourage their digital transformation and adoption of digital payment solutions.

H3: Perceived Behavioral Control positively influences intentions to use Digital Payment.

3.4 Digital Financial Awareness

It refers to the degree to which individuals or companies are familiar with digital financial tools, services, and benefits and threats associated (Farouk, F.M., 2026). It includes knowledge of internet banking, mobile phone payments, e-wallet, and protection against cyber-attacks. To Ozili (2018), increased financial awareness through digital platforms is central to bridging the gap in financial inclusion, particularly among people with low incomes, through enabling them to use digital platforms effectively. Additionally, increased awareness translates into confidence and trust in digital platforms, hence making it easy to convert from traditional to digital financial practices (Marangunić & Granić, 2015; Legris et al., 2003; Yucel & Gulbahar, 2013). For micro and small-scale enterprises and the masses in developing economies, awareness is critical in dampening resistance and myths and in the encouragement of safe and effective uses of digital financial products and services (Bergdahl et al., 2020). Digital economy financial literacy is therefore a core enabler for encouraging digital take-up and inclusive economic growth (Mohammadyari & Singh, 2015).

H4: Digital Financial Services positively influences intentions to use Digital Payment.

3.5 Intentions to Use Digital Payment

The intention to use digital payment systems is an important element in determining actual adoption among small family companies. Numerous research have examined the factors that influence this aim. For example, Kim et al. (2010) discovered that perceived utility, convenience of use, and risk perception all play important roles in small firms' decisions to embrace digital payment systems. Zhou (2012) identifies trust and social influence as important

factors in the desire to use digital wallets. Furthermore, Teo et al. (2012) found that external variables such as government rules and industry norms influence small enterprises' willingness to implement digital payments. These findings indicate that increasing adoption necessitates a comprehensive approach that covers technological, social, and regulatory aspects.

H5: Intentions to use Digital Payment positively influence behavior to use Digital Payment.

3.6 Innovative Resistance

Innovation resistance is the propensity of individuals or organizations to resist adopting new practices or technology in response to perceived risk, complacency, tradition, or incompatibility with prevailing habits and values (Ram & Sheth, 1989). In the case of digital payment systems, resistance can play a moderating role in the intention to use to use behavior. Although individuals or small firms might show high intention to use electronic payment systems, fear, complexity, or perceived disruption of current routine might deter actual use. Researchers like Laukkanen et al. (2007) and Talke & Heidenreich (2014) believe that resistance to innovation is a critical moderator function, generally arresting the positive influence of intention on usage, especially when digital literacy or confidence levels are low. Small family businesses, owing to their resource limitations and deeply ingrained traditional financial operations, are likely to resist this type of change even when intentions and attitudes are positive. The understanding of the dynamics of this moderating effect thus plays a pivotal role in formulating strategies to minimize resistance as well as ease of digital payment adoption.

H6: Innovative Resistance moderates the relationship between Intentions to Use Digital Payment and Usage Behaviour to use Digital Payment

The conceptual research framework is shown in figure 1 below.

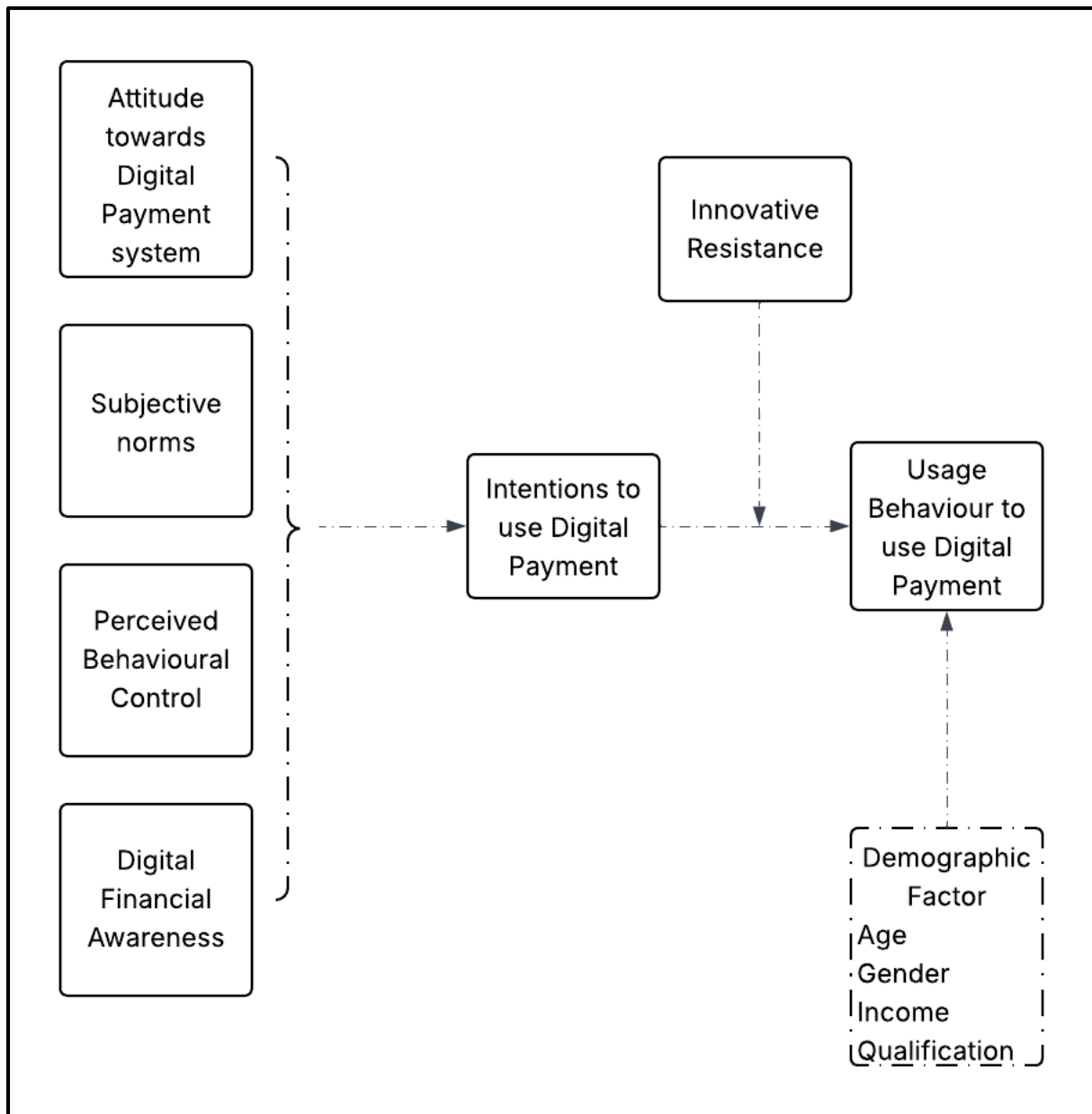


Figure 1: Conceptual Research Model

Source: prepared by authors

4. METHODOLOGY

This study employs a comprehensive methodology, blending descriptive and analytical methods with a cross-sectional analysis. A stratified random sampling approach was used to secure a representative and varied sample of small, family-owned small enterprises within Indian national capital Region (NCR) including Delhi and adjoining cities. These small businesses, as noted by Moulard et al. (2015), often show lower adoption rates for digital payments. The study explores how different factors impact these businesses' willingness to adopt digital payment systems, relying on primary data gathered directly from survey respondents, which is considered the most effective data collection method (Sekaran & Bougie, 2016).

We approached small businesses, primarily, traditional brick-and-mortar retail businesses in NCR. The final number of valid responses made the sample size as 300 small business owners who voluntarily completed an open-ended questionnaire, allowing for detailed insights into the characteristics and scale of their operations. Data collection was conducted across multiple locations within Delhi NCR, ensuring that the sample represented a variety of sectors. This diversity allows for a detailed examination of the factors influencing digital payment adoption across different business types, providing broader insights into the opportunities and barriers in digital transformation for small businesses. Table 1 details the types and distribution of small businesses included in the study.

Table 1: Distribution of small businesses

Nature of Business	Number of Small Businesses
Stationery & Books	14
Food Centres	34
Electronics	33
Furniture	23
General Stores	29
Footwear and Garments	42
Cosmetics	38
Jewellery	26
Chemist Shops	28
Services (Various Types)	33
Total	300

Source: prepared by authors from data collected

4.1 Survey Instrument

A self-administered survey was created using Google Forms to investigate the digitalisation activities of small family-owned businesses, with an emphasis on their readiness to deploy digital payment systems. The survey was divided into two major portions. Section A collected demographic data to assist contextualise respondents' opinions, whereas Section B included questions designed to evaluate characteristics relevant to the study framework's four fundamental components. These constructs were created to identify the key influences on the desire to use digital payment systems.

Early pilot research with 25 participants was done to fine-tune the survey, resulting in modest changes that improved the questions' clarity and relevancy. To assure legitimacy, a screening question—"Have you installed a digital payment system?"—was inserted to confirm that respondents were indeed using these platforms. The poll used a five-point Likert scale, which

allowed for a comprehensive examination of participants' opinions and behaviours about the implementation of digital payment systems in their organisations (Table 2).

Table 2: Variable Measurement and Scales

Construct	Measurement Scales	Adapted From
Attitude towards Digital Payment System	Likert scale items assessing emotions and convictions regarding digital payment system adoption.	Ajzen (1991); Liébana-Cabanillas et al. (2017)
Subjective Norms	Likert scale items measuring perceived societal or peer pressure to adopt digital payments.	Ajzen (1991); Slade et al. (2015); Oliveira et al. (2016)
Perceived Behavioural Control	Likert scale items evaluating users' perceptions of ease or difficulty in using digital payment systems.	Ajzen (1991); Lai (2017); Zhou (2013)
Digital Financial Awareness	Likert scale items assessing awareness, literacy, and understanding of digital finance, especially related to payments.	Marangunić & Granić (2015); Taherdoost & Masrom (2009); Yucel & Gulbahar (2013); Ferro et al. (2011)
Intentions to Use Digital Payment	Likert scale items measuring the likelihood of using digital payment systems in the near future.	Ajzen (1991); Zhou (2012); Kim et al. (2010); Teo et al. (2012)
Innovative Resistance	Likert scale items capturing reluctance or opposition to adopting digital innovations despite intention to use.	Ram & Sheth (1989); Heidenreich & Spieth (2013)
Usage Behaviour to Use Digital Payment	Self-reported frequency of actual use of digital payments in the preceding month.	Ajzen (1991); Kangogo (2013); Yucel & Gulbahar (2013)

Source: compiled by authors

5. DATA ANALYSIS AND RESULTS

5.1 Measurement Model

To validate the proposed components, the study used confirmatory factor analysis (CFA) with Smart-PLS 4.0. Several critical coefficients were used to measure the model's fit. The results showed strong construct reliability, with Cronbach's Alpha and Composite Reliability (CR) values above the 0.7 threshold (Hair et al., 2015), matching the standards stated by Nunnally (1978) and Hair et al. (2019). Furthermore, the Average Variance Extracted (AVE) for each design was larger than 0.5, as seen in Tables 3 and 4. The results corroborate the validity of the assessment approach adopted and indicate the model's viability for future structural model study.

Table 3: Construct's Reliability and Validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
ATDPS	0.878	0.893	0.925	0.803
DFA	0.789	0.792	0.877	0.704
IR	0.839	0.851	0.903	0.757
ITDP	0.853	0.857	0.91	0.772
PBC	0.891	0.902	0.932	0.821
SN	0.88	0.901	0.917	0.734
UBDP	0.836	0.836	0.902	0.753

Source: prepared by authors based on data analysis

Note: ATDPS (Attitude Towards Digital Payment), DFA (Digital Financial Awareness), SN (Subjective Norms), PBC (Perceived Behavioural Control), ITDP (Intentions to Use Digital Payment), IR (Innovative Resistance), UBDP (Usage Behaviour to Use Digital Payment).

All constructs in the study exhibit strong psychometric properties, as evidenced by their reliability and validity metrics presented in Table 3. The Cronbach's alpha values for all constructs exceed the commonly accepted threshold of 0.70 (Considine et al., 2005), indicating satisfactory internal consistency, with PBC (0.891) and ATDPS (0.878) reflecting particularly high reliability. The composite reliability values, measured through both ρ_{a} and ρ_{c} , are consistently above 0.83 for all constructs, fulfilling the criteria recommended by Mbama and Ezepue (2018) and confirming the constructs' dependability. Furthermore, the Average Variance Extracted (AVE) for each construct exceeds the minimum benchmark of 0.50 (Fornell & Larcker, 1981), thereby establishing convergent validity. Notably, PBC (0.821) and ATDPS (0.803) exhibit the highest AVE values, suggesting a substantial proportion of variance in their indicators is explained by the underlying constructs (Linh and Huyen, 2025). Discriminant validity is also confirmed through the Fornell-Larcker criterion (Table 4), as the square root of each construct's AVE (diagonal values) surpasses its inter-construct correlations, indicating that each latent variable is empirically distinct from the others. Overall, the reliability and validity statistics affirm that the constructs employed in this research are robust and appropriate for investigating the determinants influencing the intention to adopt digital payment systems among small family-owned businesses.

Table 4: Discriminant validity: Fornell- Larcker criterion

	ATDPS	DFA	IR	ITDP	PBC	SN	UBDP
ATDPS	0.896						
DFA	0.684	0.839					
IR	0.623	0.774	0.87				
ITDP	0.625	0.757	0.802	0.879			
PBC	0.753	0.714	0.581	0.646	0.906		
SN	0.845	0.678	0.606	0.662	0.798	0.856	
UBDP	0.551	0.688	0.741	0.833	0.585	0.552	0.868

Source: prepared by authors based on data analysis

R- Square

Understanding the determinants that drive small family businesses in Delhi NCR to adopt digital payment systems is essential. The R-square values for the constructs—Intention to Use Digital Payment Systems (ITDP) and Usage Behavior of Digital Payment Systems (UBDP)—are 0.615 and 0.709, respectively, with adjusted R-square values of 0.609 and 0.706. This indicates that approximately 61.5% of the variance in ITDP and 70.9% of the variance in UBDP can be explained by the respective predictors in the model. The minimal difference between the R-square and adjusted R-square values further signifies the model’s robustness and efficiency in explaining the variance in behavioral intentions and actual usage. Such findings reinforce the relevance of the independent constructs and provide actionable insights for policymakers and practitioners aiming to enhance digital payment adoption among small family-run enterprises in the region (Hair et al., 2015).

Table 5: R-square

	R-square	R-square adjusted
ITDP	0.615	0.609
UBDP	0.709	0.706

Source: prepared by authors based on data analysis

5.2 F-Square

The F-square (f^2) statistic measures the effect size of each exogenous construct on an endogenous variable within a structural model, providing insight into the relative importance of predictors (Cohen, 1988; Hair et al., 2017).

Table 6: F-square

	ATDPS	DFA	IR	ITDP	PBC	SN	UBDP	IR x ITDP
ATDPS				0				
DFA				0.344				
IR							0.052	
ITDP							0.546	
PBC				0.003				

SN				0.033				
UBDP								
IR x ITDP							0.001	

Source: prepared by authors based on data analysis

Table 6 reveals the effect sizes of exogenous variables on key constructs in the model. Digital Financial Awareness ($f^2 = 0.344$) has a large effect on Intention to Use Digital Payment Systems (ITDP), highlighting its critical role. Subjective Norms ($f^2 = 0.033$) and Perceived Behavioural Control ($f^2 = 0.003$) show small effects on ITDP. For Usage Behavior of Digital Payment (UBDP), ITDP ($f^2 = 0.546$) has a strong effect, while Institutional Readiness ($f^2 = 0.052$) has a small effect. The interaction term IR \times ITDP shows a negligible effect ($f^2 = 0.001$), indicating minimal moderation. These findings underscore the importance of enhancing financial awareness and intention to drive digital payment adoption (Cohen, 1988; Hair et al., 2017).

Structural Model

After analysing the model was evaluated using 5000 bootstrap resamples to verify the different statistical metrics. The research also computed the variance inflation factor (VIF) for all constructs and determined that each variance was below the acceptable level of 3.3, as defined by Hair et al. (2015). After doing this study, all the suggested hypotheses, H1 through H5, were evaluated and later confirmed based on the findings.

Table 6: Hypotheses Result Summary

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
ATDPS -> ITDP	0	0.001	0.08	0.004	0.996
DFA -> ITDP	0.551	0.551	0.057	9.672	0
IR -> UBDP	0.205	0.204	0.07	2.922	0.003
IR x ITDP -> UBDP	0.019	0.018	0.039	0.491	0.624
ITDP -> UBDP	0.673	0.676	0.068	9.879	0
PBC -> ITDP	0.062	0.06	0.076	0.81	0.418
SN -> ITDP	0.238	0.24	0.09	2.639	0.008

Source: prepared by authors based on data analysis

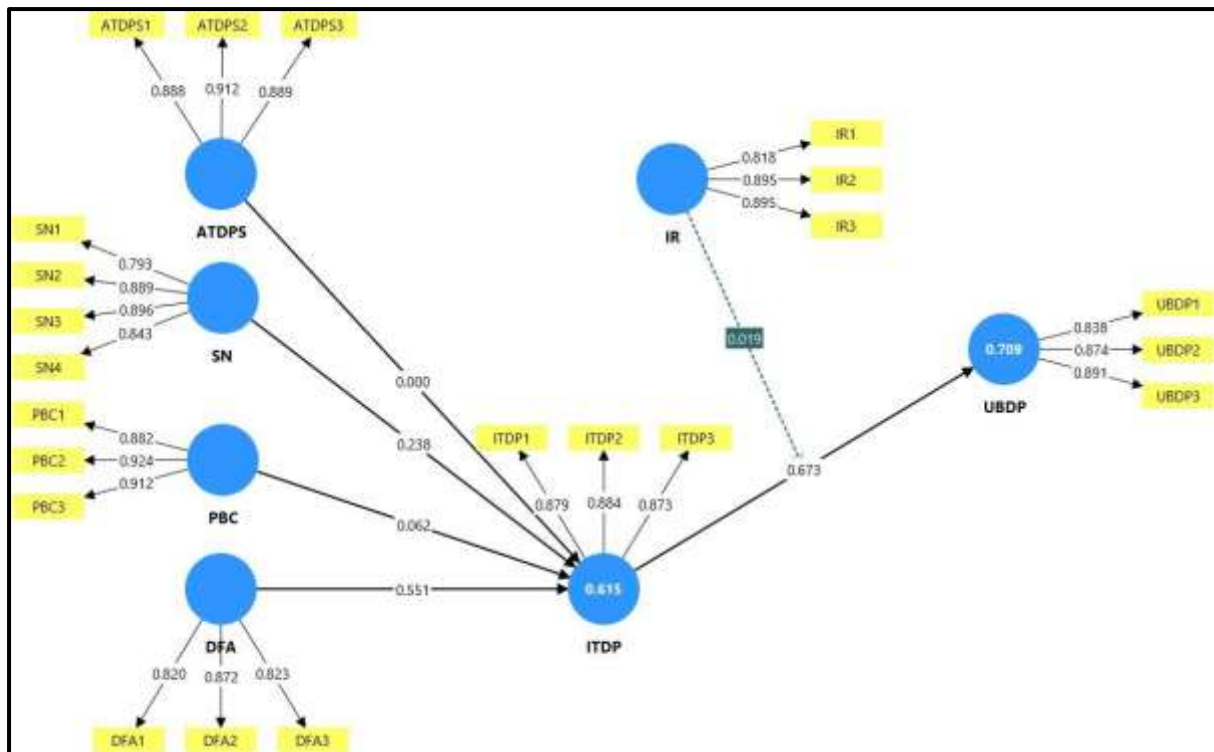
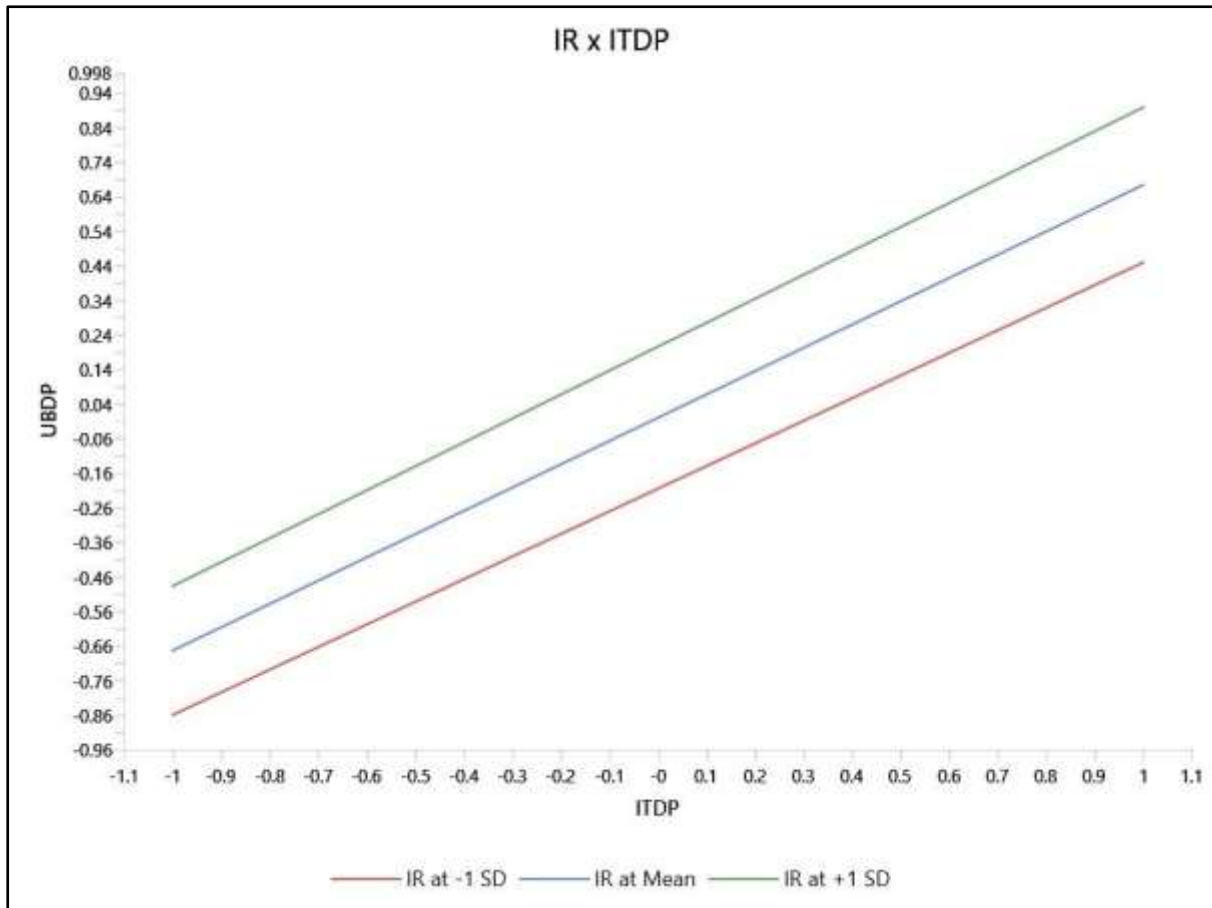


Figure 2: Structural Model

Source: authors, based on data analysis

The structural model presented illustrates the path relationships influencing the adoption of digital payment systems among small family-owned businesses. The model explains 61.5% of the variance in Intention to Use Digital Payments (ITDP) and 70.9% of the variance in Usage Behavior (UBDP), indicating strong explanatory power (Hair et al., 2017). Among the predictors of ITDP, Digital Financial Awareness ($\beta = 0.551$) and Subjective Norms ($\beta = 0.238$) show significant positive effects, supporting the importance of financial literacy and social influence in shaping intent (Singh & Srivastava, 2020; Ajzen, 1991). In contrast, Attitude ($\beta = 0.000$) and Perceived Behavioral Control ($\beta = 0.062$) are not significant, suggesting that cognitive perceptions alone may not suffice in this context. Furthermore, Intention significantly predicts Usage Behavior ($\beta = 0.673$), validating the intention-behavior link central to the Theory of Planned Behavior (Ajzen, 1991). Institutional Readiness (IR) has a direct positive impact on UBDP but does not significantly moderate the ITDP–UBDP relationship ($\beta = 0.019$), indicating that while IR enables adoption, it does not alter the intention-behavior path significantly.



Based on the interaction plot, the moderating effect of Institutional Readiness (IR) on the relationship between Intention to Use Digital Payment Systems (ITDP) and Usage Behavior of Digital Payments (UBDP) is clearly positive. All three regression lines—representing IR at -1 SD, Mean, and $+1$ SD—exhibit an upward slope, signifying a consistent positive association between ITDP and UBDP. Notably, the slope becomes steeper as IR increases (from red to green line), indicating that higher levels of Institutional Readiness enhance the strength of the relationship. This implies that in environments with greater institutional support—such as improved digital infrastructure, regulatory backing, and ecosystem maturity—the translation of intention into actual digital payment usage is more effective. This finding aligns with the Theory of Planned Behavior (Ajzen, 1991), which posits that perceived or actual control over facilitating conditions significantly influences behavioral execution, and is further supported by technology adoption models like UTAUT (Venkatesh et al., 2003).

6. DISCUSSION AND IMPLICATIONS

The study's findings offer mixed support for the proposed hypotheses when compared with prior literature. The relationship between Attitude Towards Digital Payments (ATDPS) and Intention to Use Digital Payments (ITDP) was statistically insignificant ($\beta = 0.001$, $p = 0.996$), countering Ajzen's (1991) Theory of Planned Behavior (TPB), which posits attitude as a key predictor—suggesting that in this context, favorable attitudes alone are insufficient without enabling conditions. Conversely, Digital Financial Awareness (DFA) showed a strong and significant effect on ITDP ($\beta = 0.551$, $p < 0.001$), aligning with Singh and Srivastava (2020) and Kim et al. (2010), who emphasize financial literacy as critical in promoting digital

adoption. Subjective Norms (SN) also had a significant influence on ITDP ($\beta = 0.238$, $p = 0.008$), supporting TPB's assertion of the role of social influence (Venkatesh et al., 2003). Perceived Behavioral Control (PBC), however, was not significant ($\beta = 0.062$, $p = 0.418$), contrary to TPB assumptions, possibly due to contextual limitations such as infrastructural or institutional barriers. The path from ITDP to Usage Behavior of Digital Payment (UBDP) was highly significant ($\beta = 0.673$, $p < 0.001$), confirming the well-established intention–behavior link (Ajzen, 1991; Davis, 1989). Institutional Readiness (IR) significantly predicted UBDP ($\beta = 0.205$, $p = 0.003$), reinforcing the view that supportive external conditions enhance actual technology usage (van Deursen & van Dijk, 2016, Gao, et al., 2026). However, the moderation effect of IR on the ITDP–UBDP relationship was insignificant ($\beta = 0.019$, $p = 0.624$), suggesting that while IR is important, it does not significantly alter the strength of this relationship. Overall, the results affirm certain elements of established theoretical models while challenging others in the specific context of small family-owned businesses.

7. LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

The research is geographically limited to the NCR of India. So, generalisation of the results applicable to other locations may be limited because of different socioeconomic and cultural aspects. Our rigorous research technique may not fully capture digital payment adoption variables. This research did not include qualitative insights from interviews or focus groups, which might give a deeper perspective. Though the research addresses some significant elements, it may not cover all variables that potentially affect small store digital payment system adoption. Government legislation, provider marketing methods, and technical advances may also be relevant and demand more examination. For example, future research may consider exploring the role of family-influenced variables given the socio-emotional wealth theory of family business management.

8. CONCLUSION

This study thoroughly investigated the factors affecting the willingness to adopt digital payment systems among small family-owned businesses in the NCR of India. The findings indicate that the adoption of these systems is significantly shaped by various factors. Furthermore, the research emphasizes the critical role of digital literacy. The level of digital literacy among business owners and their customers greatly influences the acceptance of digital payment methods. Businesses with higher digital literacy are more likely to understand and effectively utilize these payment systems, leading to a greater willingness to adopt them. Overall, the digital transformation of small family businesses requires addressing the elements outlined in the Theory of Planned Behavior (TPB), along with enhancing digital literacy. To encourage the use of digital payment systems in these enterprises, it is essential to focus on fostering positive attitudes toward digital payments, shaping favorable subjective norms, strengthening perceived behavioral control, and boosting digital literacy.

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