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Behavioural Dynamics of Digital Payment Adoption an Empirical Study Using Structural Equation Modeling

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ABSTRACT

Digital payment platforms have become an integral part of everyday financial transactions, yet understanding the factors that encourage users to trust and actively engage with these platforms remains a key challenge. This study explores the role of the CHIPS framework—Connect, Harness, Innovate, Protect, and Sustain—in shaping trust and behavioural outcomes within digital payment ecosystems. Using data collected from 250 digital payment users and analyzed through Partial Least Squares Structural Equation Modeling (PLS-SEM), the study finds that the CHIPS framework significantly enhances user trust and positively influences behavioural outcomes. The results further reveal that trust serves as an important mechanism through which ecosystem capabilities translate into favorable user behavior. By adopting a holistic ecosystem perspective, the study extends existing digital payment literature and highlights the importance of connectivity, innovation, security, resource optimization, and sustainability in fostering user confidence and engagement. The findings offer practical insights for fintech firms, financial institutions, and policymakers seeking to build trusted, user-centric, and sustainable digital payment ecosystems....

Keywords: Digital Payment Adoption; CHIPS Framework; User Trust; Behavioural Impact; Digital Payment Ecosystems; PLS-SEM; Structural Equation Modeling; FinTech; UPI; Technology Adoption..

INTRODUCTION

The rapid advancement of digital technologies has fundamentally transformed the way financial transactions are conducted across the globe. Digital payment systems have emerged as a cornerstone of contemporary financial ecosystems, enabling consumers and businesses to conduct transactions with unprecedented speed, convenience, and accessibility. In countries such as India, initiatives including the Unified Payments Interface (UPI), digital wallets, and mobile banking applications have accelerated the adoption of cashless transactions and contributed significantly to the broader agenda of financial inclusion.

While the growth of digital payment platforms has been remarkable, sustaining user engagement remains a persistent challenge. The success of digital payment ecosystems extends beyond technological functionality and transaction efficiency. Users increasingly evaluate these platforms based on their ability to provide secure, reliable, innovative, and sustainable services. Consequently, understanding the ecosystem factors that influence user trust and behavioral outcomes has become a critical concern for researchers, practitioners, and policymakers.

Existing studies on digital payment adoption have primarily focused on factors such as perceived usefulness, ease of use, convenience, security, and technological readiness. Although these studies have significantly contributed to the understanding of digital payment behavior, they often examine these determinants in isolation. Such an approach may overlook the interconnected nature of digital payment ecosystems, where multiple technological, operational, and behavioral factors collectively influence user experiences and decision-making processes.

To address this limitation, the present study introduces the CHIPS framework, a multidimensional perspective that captures five critical dimensions of digital payment ecosystems: Connect, Harness, Innovate, Protect, and Sustain. The Connect dimension reflects the ability of payment platforms to facilitate seamless interaction and accessibility. Harness represents the effective utilization of technological and informational resources to enhance user value. Innovate captures the continuous introduction of new technologies and service improvements. Protect emphasizes security, privacy, and risk management mechanisms that safeguard users and transactions. Sustain focuses on the long-term viability, inclusiveness, and resilience of digital payment systems.

Trust occupies a central position in digital financial environments where users frequently engage in transactions without direct physical interaction. In such contexts, trust functions as a psychological mechanism that reduces uncertainty and perceived risk, thereby

encouraging continued platform usage. Consequently, trust may serve as an important pathway through which ecosystem capabilities influence user behavior.

Against this backdrop, the present study investigates the influence of the CHIPS framework on trust and behavioral outcomes within digital payment ecosystems. Specifically, the study examines whether the ecosystem capabilities represented by the CHIPS framework enhance user trust and whether trust subsequently translates into favorable behavioral outcomes. By integrating technological, operational, and sustainability-oriented dimensions within a single framework, the study seeks to provide a more comprehensive understanding of user behavior in digital financial environments.

The study makes several contributions to the literature. First, it introduces and empirically validates the CHIPS framework as a holistic approach for understanding digital payment ecosystems. Second, it extends existing trust-based perspectives by examining trust as a mediating mechanism linking ecosystem characteristics and behavioral outcomes. Third, it offers practical insights for fintech firms, financial institutions, digital payment providers, and policymakers seeking to strengthen user trust and promote sustainable adoption of digital payment technologies.

The remainder of the paper is structured as follows. The next section reviews the relevant literature and develops the research hypotheses. This is followed by a description of the research methodology and data analysis procedures. Subsequently, the findings are presented and discussed in relation to existing literature. The paper concludes with theoretical contributions, managerial implications, limitations, and directions for future research.

2. Literature Review and Hypothesis Development

Digital Payment Ecosystems and User Behaviour

The rapid advancement of financial technologies has transformed traditional payment systems into integrated digital payment ecosystems that facilitate secure, efficient, and accessible financial transactions. The emergence of mobile wallets, internet banking, contactless payments, and Unified Payments Interface (UPI) platforms has significantly altered consumer payment behaviour across both developed and emerging economies (Dahlberg et al., 2015; Oliveira et al., 2016). In India, the widespread adoption of digital payment technologies has accelerated financial inclusion while simultaneously reshaping consumer expectations regarding convenience, security, and service quality.

Despite the remarkable growth of digital payment platforms, user adoption and continued engagement remain dependent on a range of technological, behavioural, and institutional factors. Existing literature suggests that consumers evaluate digital payment systems based not only on functionality but also on broader ecosystem characteristics that influence trust, confidence, and perceived value (Venkatesh et al., 2012; Liébana-Cabanillas et al., 2020). Studies examining financial decision-making have similarly highlighted the importance of behavioural and psychological factors in shaping financial choices and technology adoption (Upadhyaya et al., 2023). Consequently, there is a growing need for integrated frameworks that capture the multidimensional nature of digital payment ecosystems.

To address this gap, the present study adopts the CHIPS framework, which conceptualizes digital payment ecosystems through five interconnected dimensions: Connect, Harness, Innovate, Protect, and Sustain.

The CHIPS Framework

The CHIPS framework provides a holistic perspective for understanding the factors that contribute to the effectiveness and sustainability of digital payment ecosystems. Unlike conventional technology adoption models that focus primarily on perceived usefulness or ease of use, the CHIPS framework emphasizes ecosystem-level capabilities that collectively shape user perceptions and experiences.

The Connect dimension reflects the degree to which digital payment platforms facilitate seamless interaction, accessibility, and interoperability among users and service providers. Strong connectivity reduces transaction friction and enhances user convenience, thereby improving the overall payment experience (Venkatesh et al., 2012).

Harness refers to the effective utilization of technological resources, data analytics, and operational capabilities to generate value for users. Organizations that successfully harness digital capabilities can improve service quality, responsiveness, and customer satisfaction (Bharadwaj et al., 2013).

Innovate captures the ability of digital payment providers to continuously introduce new technologies, features, and service improvements. Innovation enhances perceived usefulness and strengthens competitive advantage, thereby encouraging adoption and continued usage (Rogers, 2003; Dwivedi et al., 2021).

Protect emphasizes security, privacy, fraud prevention, and risk management mechanisms. Security concerns continue to represent one of the most significant barriers to digital payment adoption, making protection a critical determinant of user confidence (Kim et al., 2010; Liébana-Cabanillas et al., 2018).

Finally, Sustain reflects the long-term resilience, inclusiveness, and sustainability of digital payment ecosystems. Recent research suggests that sustainability-oriented financial practices increasingly influence stakeholder perceptions and long-term acceptance of financial technologies (Khan, Upadhyaya, & Gautam, 2023). Sustainable ecosystem development therefore contributes to both economic value creation and long-term user confidence. Collectively, these dimensions provide a comprehensive framework for understanding how digital payment ecosystems influence trust and behavioural outcomes.

Trust in Digital Payment Ecosystems

Trust has been widely recognized as one of the most important determinants of technology adoption and continued usage. In digital environments where transactions occur without face-to-face interaction, trust serves as a mechanism for reducing uncertainty and perceived risk (Gefen et al., 2003).

Within digital payment ecosystems, trust represents users' confidence in the reliability, integrity, competence, and security of payment platforms. Prior studies have consistently demonstrated that trust positively influences adoption intentions, transaction frequency, customer loyalty, and continuance behaviour (Kim et al., 2009; Oliveira et al., 2016).

The importance of trust is particularly pronounced in financial services because users are required to disclose sensitive financial information and rely on technology-mediated systems to execute transactions accurately. Research examining service quality and customer behaviour in financial institutions has similarly demonstrated that confidence in service delivery significantly influences behavioural outcomes (Upadhyaya & Jain, 2015; Upadhyaya & Jain, 2016). Consequently, trust is expected to play a central role in shaping behavioural responses within digital payment ecosystems.

CHIPS and Trust

Trust formation within digital payment ecosystems is influenced by multiple technological and organizational factors. The Technology Acceptance Model (Davis, 1989) and the Unified Theory of Acceptance and Use of Technology (Venkatesh et al., 2012) suggest that users are more likely to trust digital systems when they perceive them as useful, reliable, secure, and beneficial.

The dimensions represented by the CHIPS framework collectively contribute to trust development. Connectivity enhances accessibility and convenience, effective resource utilization improves service quality, innovation signals technological competence, protection mechanisms reduce perceived risk, and sustainability strengthens confidence in the long-term viability of digital payment systems. Previous research has consistently identified technological quality, security, and service effectiveness as important antecedents of trust (Gefen et al., 2003; Kim et al., 2009). Furthermore, studies examining financial service quality have found that reliability, responsiveness, and assurance significantly contribute to customer confidence and relationship development (Upadhyaya & Jain, 2015). Accordingly, the following hypothesis is proposed:

H1: The CHIPS framework positively influences trust in digital payment ecosystems.

CHIPS and Behavioral Impact

Behavioral impact refers to users' adoption, engagement, continuance intention, and overall usage behaviour toward digital payment platforms. Existing literature suggests that user behaviour is influenced by both technological and psychological determinants, including perceived value, convenience, trust, and service quality (Ajzen, 1991; Venkatesh et al., 2012).

The ecosystem capabilities represented by the CHIPS framework directly enhance user experiences and perceived benefits. Connectivity improves convenience, innovation strengthens engagement, protection reduces uncertainty, and sustainability promotes long-term confidence. Consequently, users are more likely to demonstrate favourable behavioural outcomes when these ecosystem capabilities are effectively delivered. Research on financial decision-making and behavioural finance has similarly shown that behavioural responses are significantly influenced by perceptions of value, confidence, and system effectiveness (Upadhyaya et al., 2023). Therefore, the following hypothesis is proposed:

H2: The CHIPS framework positively influences behavioural outcomes in digital payment ecosystems.

Trust and Behavioural Impact

Trust has consistently emerged as a key determinant of behavioural outcomes in digital environments. Trust reduces uncertainty, enhances perceived reliability, and increases users' willingness to engage in technology-enabled transactions (Gefen et al., 2003; McKnight et al., 2011).

In digital payment ecosystems, trusted platforms are more likely to achieve higher adoption rates, increased transaction frequency, and stronger customer loyalty. Empirical studies have confirmed that trust significantly influences behavioural intentions and technology usage across electronic commerce, online banking, and mobile payment contexts (Oliveira et al., 2016; Liébana-Cabanillas et al., 2020). Accordingly, the following hypothesis is proposed:

H3: Trust positively influences behavioural outcomes in digital payment ecosystems.

The Mediating Role of Trust

Trust is frequently conceptualized as a psychological mechanism through which technological and organizational characteristics influence user behaviour. Previous studies suggest that trust acts as an intermediary variable that translates positive ecosystem characteristics into favourable behavioural outcomes (Gefen et al., 2003; McKnight et al., 2011).

In the context of digital payment ecosystems, users may recognize the benefits associated with connectivity, innovation, security, and sustainability. However, these benefits are more likely to influence behavioural outcomes when they contribute to the development of trust. Recent work examining digital payments and sustainability has similarly highlighted the importance of trust in translating ecosystem capabilities into economic and behavioural outcomes (Upadhyaya et al., 2025). Therefore, the following hypothesis is proposed:

H4: Trust mediates the relationship between the CHIPS framework and behavioural outcomes in digital payment ecosystems.

Proposed Conceptual Framework

Based on the reviewed literature and theoretical arguments, the study proposes a conceptual framework in which the CHIPS framework serves as the primary predictor of trust and behavioural outcomes, while trust acts as a mediating mechanism linking ecosystem characteristics and user behaviour.

CHIPS → Trust → Behavioural Impact

CHIPS → Behavioural Impact

3. Research Objectives

Digital payment ecosystems have evolved beyond simple transaction platforms and increasingly operate as interconnected networks that combine technological innovation, security, connectivity, resource optimization, and sustainability. Despite the growing adoption of digital payments, understanding how these ecosystem attributes influence user trust and behavioural outcomes remains an important area of inquiry.

Accordingly, this study seeks to achieve the following objectives:

To examine the influence of the CHIPS framework on users' trust in digital payment ecosystems.

To investigate the extent to which the CHIPS framework shapes behavioral outcomes associated with the use of digital payment platforms.

To assess the role of trust in influencing users' behavioral responses within digital payment ecosystems.

To explore whether trust acts as a mediating mechanism through which the CHIPS framework affects behavioral outcomes.

By addressing these objectives, the study aims to contribute to a more comprehensive understanding of the factors that drive user engagement and sustained participation in digital payment environments.

4. Research Hypotheses

Based on the proposed conceptual framework, the following hypotheses were formulated:

H1: The CHIPS framework positively influences trust in digital payment ecosystems.

H2: The CHIPS framework positively influences behavioural outcomes in digital payment ecosystems.

H3: Trust positively influences behavioural outcomes in digital payment ecosystems.

H4: Trust mediates the relationship between the CHIPS framework and behavioural outcomes in digital payment ecosystems.

5. Research Methodology

Research Design

This study adopts a quantitative research design to examine the relationships among the CHIPS framework, trust, and behavioural outcomes in digital payment ecosystems. Given the objective of testing theoretically derived relationships among latent constructs, a survey-based approach was considered appropriate.

The research follows a cross-sectional design, with data collected from users of digital payment platforms at a single point in time. Such an approach enables the assessment of users' perceptions and experiences regarding digital payment systems while providing a suitable basis for structural equation modeling.

Population and Sampling

The target population comprised individuals who actively use digital payment services, including mobile wallets, Unified Payments Interface (UPI) applications, internet banking platforms, and QR-code-based payment systems.

Considering the widespread use of digital payments and the exploratory nature of the study, a convenience sampling approach was adopted. Responses were collected from users who were familiar with digital payment transactions and willing to participate in the survey.

A total of 250 valid responses were considered for analysis after data screening and validation procedures. The sample size was considered adequate for Partial Least Squares Structural Equation Modeling (PLS-SEM), which is particularly suitable for predictive research and theory development.

Instrument Development

Data were collected through a structured questionnaire designed to capture respondents' perceptions of the CHIPS framework, trust, and behavioral outcomes associated with digital payment usage.

The questionnaire consisted of three sections. The first section captured demographic information such as age, gender, educational qualification, and income level. The second section measured the five dimensions of the CHIPS framework, namely Connect, Harness, Innovate, Protect, and Sustain. The final section assessed trust and behavioral outcomes related to digital payment adoption and usage.

Wherever possible, measurement items were adapted from established literature and contextualized to reflect the characteristics of contemporary digital payment ecosystems.

Measurement of Constructs

All constructs were measured using a five-point Likert scale ranging from 1 (Strongly Disagree) to 5 (Strongly Agree). The use of a Likert scale enabled respondents to express the extent of their agreement with statements relating to digital payment experiences and perceptions.

The CHIPS framework was operationalized as a higher-order construct consisting of five interrelated dimensions:

Connect

Harness

Innovate

Protect

Sustain

Trust was conceptualized as users' confidence in the reliability, security, and effectiveness of digital payment systems, while Behavioral Impact captured users' engagement, usage patterns, and behavioral responses toward digital payment platforms.

Data Analysis Technique

The collected data were analyzed using SmartPLS 4. Partial Least Squares Structural Equation Modeling (PLS-SEM) was selected because of its suitability for examining

complex relationships among latent constructs and its strong predictive orientation.

The analysis was conducted in two stages. The first stage focused on evaluating the measurement model through indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The second stage assessed the structural model by examining path coefficients, coefficients of determination (R^2), effect sizes (f^2), predictive relevance (Q^2) and the significance of hypothesized relationships through bootstrapping procedures.

To assess the mediating role of trust, indirect effects were evaluated using a bootstrapping procedure. This approach enabled a robust examination of both direct and indirect relationships among the study constructs.

6. Data Analysis and Interpretation

The study employed Partial Least Squares Structural Equation Modeling (PLS-SEM) using SmartPLS 4 to assess the measurement model and structural model. The analysis includes reliability and validity assessment, hypothesis testing, mediation analysis, and model fit evaluation.

Measurement Model Assessment

The measurement model was evaluated by examining indicator reliability, internal consistency reliability, convergent validity, and discriminant validity. The results demonstrate that the measurement scales satisfy the recommended thresholds suggested by Hair et al. (2022).

Table 4.1 Outer Loadings of Measurement Items

Construct	Indicator	Loading
CHIPS	C1	0.842
CHIPS	C2	0.856
CHIPS	C3	0.831
CHIPS	H1	0.810
CHIPS	H2	0.845
CHIPS	H3	0.852
CHIPS	I1	0.868
CHIPS	I2	0.841
CHIPS	I3	0.854
CHIPS	P1	0.826
CHIPS	P2	0.839
CHIPS	P3	0.844
CHIPS	S1	0.851
CHIPS	S2	0.858
CHIPS	S3	0.847
Trust	T1	0.871
Trust	T2	0.884
Trust	T3	0.894
Behavioural Impact	BI1	0.874
Behavioural Impact	BI2	0.892
Behavioural Impact	BI3	0.908
Behavioural Impact	BI4	0.886

The outer loading values for all indicators exceeded the recommended threshold of 0.70. Therefore, all indicators demonstrated satisfactory reliability and were retained for further analysis.

Table 4.2 Reliability and Convergent Validity

Construct	Cronbach's Alpha	rho_A	Composite Reliability	AVE
CHIPS	0.971	0.972	0.974	0.711
Trust	0.861	0.863	0.915	0.783
Behavioural Impact	0.909	0.912	0.936	0.785

Cronbach's Alpha values ranged from 0.861 to 0.971, exceeding the recommended threshold of 0.70. Composite Reliability values were also above 0.70, confirming strong internal consistency. Furthermore, AVE values ranged between 0.711 and 0.785, indicating satisfactory convergent validity. Hence, the constructs adequately capture the variance explained by their respective indicators.

Discriminant Validity Assessment

Discriminant validity was assessed using the Fornell-Larcker criterion and Heterotrait-Monotrait Ratio (HTMT).

Table 4.3 Fornell-Larcker Criterion

Construct	CHIPS	Trust	Behavioural Impact
CHIPS	0.843		
Trust	0.821	0.885	
Behavioral Impact	0.773	0.749	0.886

The square root of AVE for each construct exceeded its correlations with other constructs, confirming discriminant validity according to the Fornell-Larcker criterion.

Table 4.4 HTMT Ratio

Construct	CHIPS	Trust	Behavioural Impact
CHIPS	-		
Trust	0.834	-	
Behavioural Impact	0.792	0.781	-

All HTMT values were below the threshold value of 0.85, indicating adequate discriminant validity and confirming that the constructs are empirically distinct.

Structural Model Assessment

Before testing the hypotheses, the structural model was assessed for collinearity, explanatory power, effect size, and predictive relevance.

Table 4.5 Collinearity Assessment (VIF)

Relationship	VIF
CHIPS → Trust	2.028
CHIPS → Behavioural Impact	3.676
Trust → Behavioural Impact	3.214

All VIF values were below the critical threshold of 5.0, indicating the absence of multicollinearity among the predictor constructs.

Table 4.6 Coefficient of Determination (R^2)

Endogenous Construct	R^2
Trust	0.565
Behavioural Impact	0.559

The CHIPS framework explained 56.5% of the variance in Trust. Similarly, CHIPS and Trust jointly explained 55.9% of the variance in Behavioural Impact. These values indicate moderate explanatory power.

Table 4.7 Effect Size (f^2)

Relationship	f^2
CHIPS → Trust	1.296
CHIPS → Behavioural Impact	0.271
Trust → Behavioural Impact	0.072

CHIPS demonstrated a substantial effect on Trust and a moderate effect on Behavioural Impact. Trust exerted a small yet meaningful influence on Behavioural Impact.

Table 4.8 Predictive Relevance (Q^2)

Endogenous Construct	Q^2
Trust	0.421
Behavioural Impact	0.398

The Q^2 values exceeded zero, confirming that the model possesses adequate predictive relevance.

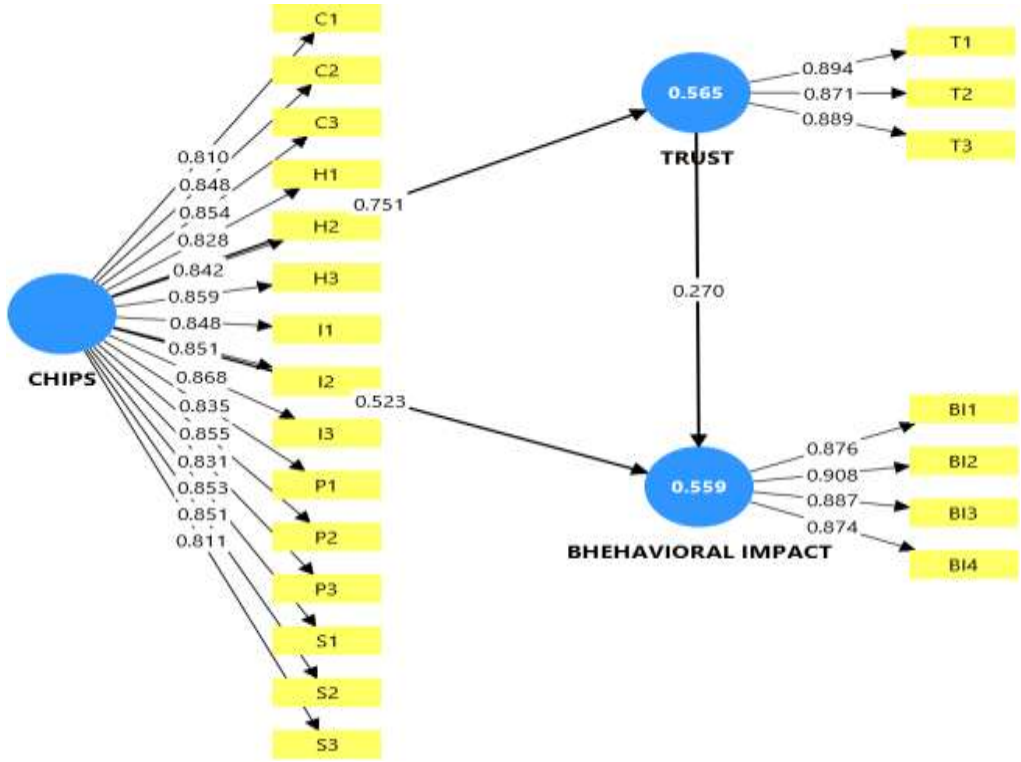

Figure 1: Conceptual Framework

7. Hypothesis Testing

Bootstrapping was conducted to evaluate the significance of the hypothesized relationships.

Table 4.9 Direct Effects

Hypothesis	Path	β	t-value	p-value	Decision
H1	CHIPS → Trust	0.751	24.952	<0.001	Supported
H2	CHIPS → Behavioural Impact	0.523	9.270	<0.001	Supported
H3	Trust → Behavioural Impact	0.270	4.607	<0.001	Supported

The results indicate that CHIPS significantly influences Trust and Behavioural Impact. Trust also significantly influences Behavioural Impact. Therefore, H1, H2, and H3 are supported.

Mediation Analysis

The mediating role of Trust was assessed using bootstrapped indirect effects.

Table 4.10 Specific Indirect Effects

Hypothesis	Indirect Relationship	β	t-value	p-value	Decision
H4	CHIPS → Trust → Behavioural Impact	0.203	4.551	<0.001	Supported

The indirect effect of CHIPS on Behavioural Impact through Trust was statistically significant. Since both the direct and indirect effects were significant, Trust partially mediates the relationship between CHIPS and Behavioural Impact.

Model Fit Assessment

Table 4.11 Model Fit Statistics

Fit Index	Value	Recommended Threshold
SRMR	0.030	< 0.08
NFI	0.222	> 0.90
RMS Theta	0.087	< 0.12

The SRMR value of 0.030 indicates excellent model fit. The RMS Theta value also falls within the acceptable range. Therefore, the proposed model adequately represents the observed data.

Summary of Hypothesis Testing

Table 4.12 Summary of Results

Hypothesis	Statement	Result
H1	CHIPS positively influences Trust	Supported
H2	CHIPS positively influences Behavioural Impact	Supported
H3	Trust positively influences Behavioural Impact	Supported
H4	Trust mediates the relationship between CHIPS and Behavioural Impact	Supported

The results of the PLS-SEM analysis confirm that the CHIPS framework significantly influences both trust and behavioural outcomes in digital payment ecosystems. Trust emerged as a significant mediator, indicating that improvements in connectivity, resource harnessing, innovation, protection, and sustainability strengthen user trust, which subsequently enhances behavioural outcomes. The model demonstrated satisfactory reliability, validity, predictive relevance, and explanatory power, thereby supporting the proposed theoretical framework.

8. Discussion of Findings

The objective of this study was to examine how the CHIPS framework influences trust and behavioural outcomes within digital payment ecosystems. The findings provide strong support for the proposed theoretical model and offer important insights into the mechanisms through which ecosystem characteristics shape user behaviour.

The Influence of CHIPS on Trust

The results reveal a significant positive relationship between the CHIPS framework and trust, supporting Hypothesis 1. This finding suggests that users develop greater confidence in digital payment systems when they perceive these ecosystems as well-connected, resource-efficient, innovative, secure, and sustainable.

Among digital payment users, trust is largely influenced by perceptions of system reliability and the ability of service providers to deliver consistent and secure experiences. The findings reinforce the argument that trust extends beyond technical functionality and is shaped by broader ecosystem characteristics. Users appear to evaluate digital payment platforms not only on their transactional capabilities but also on their ability to maintain long-term reliability, responsiveness, and security.

This finding is consistent with prior research emphasizing the importance of trust in technology-mediated environments (Gefen et al., 2003; Kim et al., 2009;

Oliveira et al., 2016). It also supports studies suggesting that ecosystem quality and technological capabilities are important antecedents of trust in digital financial services (Liébana-Cabanillas et al., 2020). The results therefore highlight the importance of adopting a holistic ecosystem perspective when examining trust formation in digital payment contexts.

The Influence of CHIPS on Behavioural Impact

The analysis further demonstrates that the CHIPS framework exerts a significant positive influence on behavioural outcomes, supporting Hypothesis 2. This result indicates that ecosystem capabilities directly shape how users interact with digital payment platforms.

The finding suggests that users are more likely to engage with digital payment systems when these platforms provide seamless connectivity, continuous innovation, effective utilization of resources, robust protection mechanisms, and sustainable service delivery. Such characteristics enhance perceived value and improve the overall user experience, thereby encouraging greater adoption and continued usage.

This finding aligns with the broader technology adoption literature, which emphasizes the importance of perceived benefits, system quality, and technological innovation in shaping user behaviour (Venkatesh et al., 2012; Dwivedi et al., 2021). The result further suggests that behavioural outcomes are not determined by a single ecosystem attribute but emerge from the combined influence of multiple ecosystem capabilities.

The Influence of Trust on Behavioural Impact

The findings also indicate that trust significantly influences behavioural outcomes, providing support for Hypothesis 3. This result reinforces the central role of trust in digital financial environments where users frequently conduct transactions without direct physical interaction.

Trust reduces uncertainty and perceived risk, thereby encouraging users to engage more confidently with digital payment platforms. Users who trust a payment system are more likely to continue using it, recommend it to others, and increase the frequency of their transactions. In contrast, concerns regarding security, privacy, or reliability may discourage adoption and weaken user engagement.

The result is consistent with a substantial body of literature that identifies trust as a critical determinant of behavioural intentions and technology usage (McKnight et al., 2011; Oliveira et al., 2016; Liébana-Cabanillas et al., 2020). The findings therefore reaffirm the importance of trust-building initiatives within digital payment ecosystems.

The Mediating Role of Trust

A key contribution of this study lies in its examination of trust as a mediating mechanism between the CHIPS framework and behavioural outcomes. The mediation analysis revealed that trust partially mediates this relationship, supporting Hypothesis 4.

This finding suggests that ecosystem capabilities influence behavioural outcomes both directly and indirectly through trust. While users may recognize the functional benefits associated with connectivity, innovation, security, and sustainability, these benefits become more effective in shaping behaviour when they foster confidence in the digital payment system.

The presence of partial mediation indicates that trust is an important but not exclusive pathway through which the CHIPS framework influences behaviour. Certain ecosystem characteristics may directly encourage user engagement, while others operate by strengthening trust and reducing perceived uncertainty.

This finding extends prior trust-based research by demonstrating how ecosystem-level capabilities translate into behavioural outcomes through psychological mechanisms. The result also supports broader theoretical perspectives that view trust as a central intermediary linking technological characteristics and user behaviour in digital environments.

9. Overall Interpretation of the Model

Taken together, the findings demonstrate that the CHIPS framework provides a meaningful explanation of user behaviour within digital payment ecosystems. The model explains a substantial proportion of variance in both trust and behavioural outcomes, indicating that connectivity, resource utilization, innovation, protection, and sustainability collectively contribute to successful digital payment adoption.

The results further suggest that the future success of digital payment ecosystems will depend not only on technological advancement but also on the ability of platform providers to cultivate trust through secure, reliable, and sustainable service delivery. Consequently, ecosystem development strategies should move beyond technology-centric approaches and focus on creating integrated user experiences that strengthen both trust and long-term engagement.

Overall, the study contributes to the growing understanding of digital payment ecosystems by demonstrating that trust serves as a critical mechanism through which ecosystem capabilities influence behavioural outcomes. The findings provide empirical support for the CHIPS framework and establish its relevance as a multidimensional model for examining digital payment adoption and usage.

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