

Antecedents of E-wallet Usage Intention: An Empirical Study

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ABSTRACT

Nowadays, the importance of cashless transactions is increasing due to the advancement of technology especially in the post-pandemic era. An e-wallet is an application that helps users make payments through a mobile device instead of cash. With the advent of e-wallets, people are shifting from using cash to cashless in the era of smartphone technology. This study aims to explore the antecedent factors affecting the intention to use e-wallets as a payment mechanism among young adults in Kerala, India. The study was conducted by following an extended Technology Acceptance Model (TAM) and a Unified Theory of Acceptance and Use of Technology (UTAUT) model. Data were collected from 380 users of e-wallets and the data were analyzed using Partial Least Squares Structural Equation Modelling (PLS-SEM) following a two-step approach. The results of the path analysis showed that perceived usefulness and perceived ease of use are the most significant predictors of usage intention of e-wallets followed by perceived trust and perceived risk. It is also revealed that perceived security does not affect the usage intention of e-wallets. The results will help the policymakers to make strategic decisions considering customer perception of usage intention.

Keywords-- Perceived Ease of Use, Perceived Usefulness, Perceived Security, Perceived Trust, Perceived Risk, E-Wallets, Usage Intention

more popular, displacing more established ones and drawing attention (Flavian et al., 2020). Additionally, several researchers have suggested that studying user behaviour and determining factors that encourage and restrict e-wallet usage has been a top research focus in recent years. Flavian et al. (2020) contended that several unexpected and significant shifts in behaviour are driving academics to investigate technology-based payment systems in greater detail.

For instance, the COVID-19 pandemic has changed consumer behaviour, resulting in the adoption of technology-based (contactless) payment methods to preserve social distance (Esawe, 2022). However, various factors influence users' intent to use particular payment methods, which is one of the main reasons for national adoptions of m-payments (Flavian et al., 2020). Furthermore, these factors would vary depending on the context (Esawe, 2022). Furthermore, some research, as noted by Teng and Khong (2021), blends users and nonusers in data analysis, ignores real consumer usage, and concentrates only on the intention to utilize m-payment services. As a result, for e-wallets to succeed, the government, service providers, and other stakeholders need to address important challenges such as identifying the crucial elements affecting e-wallet acceptance. Understanding the low rate of e-wallet acceptance among consumers is the main research issue this study attempts to answer.

Therefore, this study aims to ascertain the variables that impact the intention to use mobile e-wallets. Teng and Khong (2021) state that a variety of models have been employed in prior research, the most well-known being the unified theory of acceptance and use of technology (UTAUT) and the technology acceptance model (TAM). The basic objective of this paper is to look at the variables that lead individuals to choose e-wallets over other payment methods. Two variables, namely perceived usefulness PU, and perceived ease of use (PEU) were taken from the extended TAM model and three other variables Perceived Security, Perceived risk and Perceived trust were selected from the updated UTAUT model to fit the study's unique objective. The impacts of these factors on the intention to usage of e-wallets are then examined.

I. INTRODUCTION

With remarkable advancements in information and communications technology and the increasing reliance on smartphones for internet access, the terms digital transformation, financial inclusion, fintech, and e-wallets have become more and more common (Abdul Rahman et al., 2022). The dynamic spectacles of digital transformation give rise to new forms and activities Agustin et al., 2023). Furthermore, Fintech is becoming more and more popular in developed and developing nations alike, and it has long been a vital part of the financial services sector, bridging the gap between financial and technological components and eliminating barriers that traditional payment methods are unable to overcome (Esawe, 2022). Rapid technological advancements have led to new payment systems becoming

II. REVIEW OF LITERATURE

As information technology has grown over the past years, payment mechanisms have grown from debit and credit card payments to Internet banking, mobile banking, and e-money/e-wallet. E-wallet payment enables us to engage in many activities such as e-commerce transactions, utility payments, and even payments at a physical retailer. E-wallet payment applications can be installed on smartphones (android or IOS). Users can link their bank account to their e-wallet application which is used for all electronic transactions (Bagla & Sancheti, 2018).

2.1 Theoretical Background

Earlier research on customer behaviour and usage intention to a newly introduced technology has been well addressed using theories developed by Davis, 1989 (Technology Acceptance Model -TAM) based on the Theory of Reasoned Action. The theory of Reasoned Action suggests that behavioural intention is predicted by subjective norms and attitudes. In the TAM, attitude was lengthened and described by perceived ease of use (PEU) and perceived usefulness (PU). The Technology Acceptance Model and extended versions (TAM2 and TAM3) received some criticism such as this theory failed to explain the behavioural intention in the context of accepting new technology. This led to the development of a new advanced theory called the Unified Theory of Acceptance and Use of Technology (UTAUT) which accommodates security and trust concerns in using a new technology. This study used extended variables of the TAM and UTAUT, such as perceived trust, perceived security, and perceived risk along with perceived ease of use (PEU) and perceived usefulness (PU). Critical examination of the combination of predictors from both theories (TAM and UTAUT) can be fruitful and it is expected to improve the predictive power of usage intention as a dependent variable.

2.2 Perceived Usefulness

Perceived usefulness is the extent to which a person believes technology may enhance and improve its efficacy and performance. Perceived usefulness is the subjective viewpoint of users who believe that using a specific technology would improve their capacity to carry out their tasks. Decision-making processes are therefore viewed subjectively (Astari et al., 2022; Chelvarayan et al., 2022). Technology has direct advantages to productivity, effectiveness, task performance, labour requirements, and total benefits. Customers are more likely to use the service system if they believe that utilizing it would help them save money, get credit, and perform a lot of online transactions (Karim et al., 2022). Therefore, a variable whose advantages are seen by the user system to satisfy their demands may be classified as perceived usefulness.

Perceived utility (PU), a crucial element of the Technology Acceptance Model (TAM), gauges how much a user believes a technology will enhance their capacity to perform their duties. According to TAM, Perceived usefulness plays a critical role in determining consumers' inclinations to utilize technology (Putri et al., 2022; Ramadhani et al., 2022). If a user thinks a system is beneficial, they will see it favourably, which will increase their propensity to utilize the technology. Given that, it is hypothesized that:

H1: Perceived usefulness has a significant positive influence on e-wallet usage intention

2.3 Perceived Ease of Use

Perceived ease of use refers to how easy a person feels a piece of technology to operate. When users think technology is simpler to use, they may make their duties simpler (Purbondaru et al., 2023). Consumers will expect a simple and rapid payment option. People thus anticipate that using digital wallet services would be easy. Customers are more likely to use e-wallet apps when they believe that the application's simplicity of use improves its advantages. Perceived ease of use (PEOU) has a major and direct impact on consumers' attitudes toward technology, according to the Technology Acceptance Model (TAM) Putri et al., 2022; Ramadhani et al., 2022). Customers' behavioural intent to utilize technology is influenced by their views about it. Understanding PEOU's relationship to TAM can offer important insights for developing more user-centric technological solutions since PEOU is a critical factor in determining technology uptake and use. In the context of e-wallet technology, perceived ease of use (PEOU) is essential for forecasting customer behaviour (Tian et al., 2023). If e-wallet users think the technology is easy to use, they are more likely to adopt and use it over time. E-wallet technology's perceived ease of use may have a favourable effect on consumer attitudes and intentions. Given that, it is hypothesized that:

H2: Perceived ease of use has a significant positive influence on e-wallet usage intention

2.4 Perceived Security

Perceived security has been the subject of the previous study as a precursor to behavioural intention. Users' perception of the security of online transactions is known as perceived security. People believe they won't lose their financial or information credentials if they use online platforms for transaction payment (Kınış & Tanova, 2022; Kusumastuti et al., 2023). A positive perception of security can boost the behavioural intention to utilize new technologies, such as e-wallets, Fintech, and mobile payments (Tian et al., 2023; Zaid Kilani et al., 2023). This study examines the impact of perceived security on the usage intention of e-wallets. Given that it is hypothesized that:

H3: Perceived security has a significant positive influence on e-wallet usage intention

2.5 Perceived Trust

Trust may be defined as the desire and expectation of the party making the trust to carry out a transaction from the perspective of social psychology (Putri et al., 2022; Ramadhani et al., 2022). It is an expectation that one party will act in favour of or for the benefit of others and never think of any harmful actions. Customers' degree of confidence in the legitimacy and dependability of e-wallet payment technology is known as their level of trust (Karim et al., 2022; Kiew et al., 2022). A positive (high) perceived trust is thought to boost the behavioural intention to embrace and use new technologies Zaid Kilani et al., 2023). Accordingly, this study hypothesized as follows:

H4: Perceived trust has a significant positive influence on e-wallet usage intention

2.6 Perceived Risk

Studies on the adoption of technology have long addressed risk, or perceived danger. Uncertainty is the fundamental component of the notion of perceived risk (Prasetya & Shuhidan, 2023). It is characterized as uncertainty that is outside of the customers' control when they use online payments or transactions. In an online setting, the uncertainty may manifest itself as the outcome. Online transactions may have unfavourable or unexpected consequences (Senali et al., 2023; Sutrisno, 2023). Higher perceived risk associated with online transactions is thought to reduce the desire to utilize new technology (Prasetya & Shuhidan, 2023). Given that, this study hypothesized as follows:

H5: Perceived risk has a significant negative influence on e-wallet usage intention

2.7 Intention to Use

A person's intention to use a particular technology can be predicted by their attitude toward it, such as their curiosity about it, their search for information about its features, advantages, and applications, as well as information gleaned from other users' experiences (Tampi et al., 2023a, 2023b; Tian et al., 2023). If real usage conditions show that consumers feel technology is easy to use and may boost productivity, then such users will be happy with technology.

Based on the extensive review of the literature, the following model was proposed:

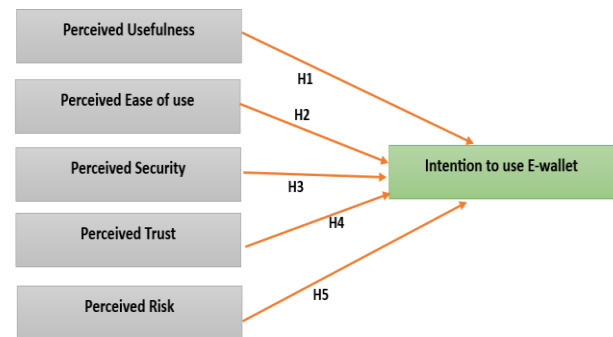


Figure 1: Conceptual Model (Source: Researcher's Model 2023)

III. RESEARCH METHOD

3.1 Data Collection and Methods

To achieve the objective of the study, a quantitative approach was used to collect data from users who had experience using mobile e-wallets in Kerala, India. A convenience sampling method was adopted for the study. Self-administered questionnaires were distributed through various social media channels and digital platforms. The measurement instrument was discussed with many experts to ensure the validity of the instrument. Cronbach's Alpha was calculated to test the internal validity and all items exceeded the cut-off rate. After checking the quality of the filled questionnaires, 380 responses were selected for final analysis. The analysis was carried out by structural equation modelling used by Smart PLS 4.0 software. For a critical examination of the impact of antecedent factors on the usage intention of e-wallets, a two-step approach was followed. Initially tested the validity and reliability measures and then tested the hypotheses proposed for the study. All the measures used in the study were taken from existing literature. A five-point Likert scale from strongly agree to strongly disagree was used to measure the responses.

IV. DATA ANALYSIS AND RESULTS

4.1 Measurement Model

Establishing whether or whether the empirical results support the study's assumptions depends on the measurement model (Hair et al., 2020). Because the modification indices indicate that certain things have more similarities than the given model permits. It is essential to look at the items' loadings right away and hold onto those with higher loadings because there may be more similarities than the provided model allows. As per the extant literature, incorrect items were removed one after the other till the standardized loadings showed that item deletion was not able to yield any improvement. Every

measurement item had a loading greater than 0.70. This indicates that each item was dependable.

4.2 Validity and Reliability

Measuring the validity and reliability of the study's constructs is also essential for assessing measurement methods. The internal consistency and reliability of each concept are reflected in Cronbach's alpha and composite reliability values. Within the required range for composite reliability values and Cronbach's alpha, all constructs in this investigation showed appropriate internal consistency and reliability. The Average Variance Extracted (AVE) metric was utilized to evaluate the validity of convergence. According to Table 1, the results indicate that each construct's AVE was more than 0.5, indicating convergent validity. Fornell-Larcker's (1981) approach was used to evaluate the discriminant validity. Table 2 illustrates that each construct's AVE was greater than any other correlation with the construct, proving that the Fornell-Larcker assumptions were satisfied.

Table 1: Composite reliability, Cronbach's Alpha, and AVE values

Variables	Cronbach's alpha	CR (rho_a)	CR (rho_c)	(AVE)
Intention	0.806	0.818	0.867	0.568
PEU	0.742	0.878	0.815	0.530
PR	0.823	0.831	0.883	0.654
PS	0.867	0.869	0.910	0.717
PT	0.747	0.758	0.851	0.655
PU	0.863	0.866	0.908	0.712

(Source: PLS Output)

Table 1 provides evidence of the latent variables' reliability as both the Cronbach's alpha (α) and composite reliability (CR) values are more than 0.7 (Heir et al., 2021). For convergent validity, the average variance derived from all constructs was more than the minimal 0.5 criteria recommended by Heir et al., 2020. It is determined whether the square root of AVEs is greater than the other correlation of each concept to verify the discriminant validity. Table 2 displays the results of both discriminant and convergent validity.

Table 2: Discriminant Validity (Fornell and Larker criteria)

Factor	Int.	PEU	PR	PS	PT	PU
Intention	0.754					
PEU	0.594	0.728				
PR	0.485	0.381	0.809			
PS	0.699	0.448	0.719	0.847		
PT	0.580	0.299	0.475	0.571	0.809	
PU	0.601	0.420	0.687	0.687	0.586	0.844

* The highest value in any column or row (indicated by the diagonal) is the square root of the AVE of the variables.

(Source: PLS output)

4.3 Structural Model and Hypothesis Testing

The suggested conceptual model's path coefficient (β), regression coefficient (R^2), and p-value are calculated to assess the structural model and investigate the connections between the constructs or assumptions.

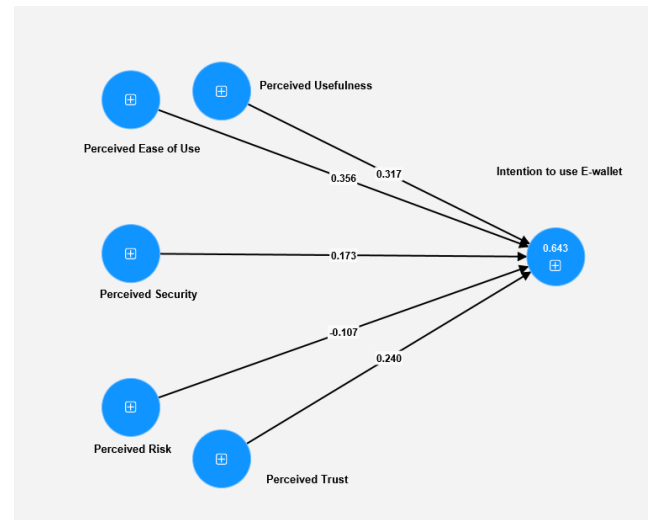


Figure 2: Standardized path coefficients

(Source: PLS output)

The significance of the formulated hypotheses was tested. Except for H3, all hypotheses are supported, as shown in Table 3 and Fig. 2. Specifically, it was determined that Perceived usefulness ($\beta = 0.317$), perceived ease of use ($\beta = 0.356$), and perceived trust ($\beta = 0.240$), had significant positive direct impacts on usage intention of e-wallets, whereas the effects of perceived security were not significant. This is also found that perceived risk has a negative significant impact on the intention of usage of e-wallet. This suggests that e-wallet usage intention is mainly influenced by perceived usefulness, perceived ease of use, perceived trust and perceived risk. The explanatory power of the model was analyzed using R^2 values which range from 0 to 1 and higher values indicating more explanatory capability. From

the analysis, it is clear that 64.3% of the variation of intention to use of e-wallet is influenced by four antecedent factors

Table 3: Direct relationships - hypothesis testing

Relationships	Std. beta	t-value	p-value	Decision
PU - Intention	0.317	8.205	0.001	Supported
PEU- Intention	0.356	2.659	0.008	Supported
PS - Intention	0.173	1.153	0.249	Not Supported
PR- Intention	-0.107	6.409	0.001	Supported
PT - Intention	0.240	2.316	0.021	Supported

V. CONCLUSION

From the hypothesis analysis result, perceived ease of use and perceived usefulness are the most important factors affecting user's decision to use e-wallet applications. Perceived trust also has a positive impact and perceived risk negatively influences the usage intention of e-wallet applications. The results conclude that the Theory of the Technology Acceptance Model (TAM) factors can influence users' intentions more than the factors discussed under the Unified Theory of Acceptance and Use of Technology (UTAUT).

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