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THE RISE OF DIGITAL WALLETS: CUSTOMER TRUST, SECURITY CONCERNS, AND ADOPTION IN RETAIL TRANSACTIONS

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Abstract

The rapid rise of digital wallets has reshaped retail transactions by offering convenience, speed, and contactless payments. This study examined the determinants of customer trust, security concerns, and adoption intentions toward digital wallets within retail contexts. Grounded in an extended Technology Acceptance Model (TAM), the research integrated perceived usefulness, perceived ease of use, trust, and perceived risk to explain customer attitudes and behavioural intentions. A quantitative survey was conducted with 400 participants, and data were analysed using structural equation modelling. The findings revealed that perceived usefulness, ease of use, and trust significantly enhanced positive attitudes, whereas perceived risk had a strong negative influence. Among these factors, trust demonstrated the strongest predictive power, highlighting its critical role in shaping consumer perceptions. The model explained 68% of the variance in attitudes toward digital wallets and 72% of the variance in adoption intention, confirming its robustness. These results emphasized that fostering customer trust and addressing perceived risks were as important as enhancing technological efficiency for achieving sustainable adoption. The study offered both theoretical contributions by extending TAM with trust and risk constructs, and practical insights by recommending secure, user-centred digital wallet ecosystems. The research further identified directions for future exploration, including cross-cultural comparisons, longitudinal studies, and the integration of alternative payment innovations. Ultimately, this research provides a validated framework for developers and retailers to prioritize key psychological and functional drivers, thereby accelerating the transition towards a cashless society while ensuring consumer confidence and security are maintained as foundational pillars of digital finance.

Keywords: Adoption Intention, Attitude, Digital Wallets, Perceived Ease of Use, Perceived Risk, Trust

Introduction

With digital walkers, consumer financial workouts change being the shop to not carrying money. While as an effort to help the world with social distancing technologies crisis brought about many breakthroughs. Contactless payment declined to 1 percent. In a few decades, many people from all over the world have credit cards in their phones. Now, you can just swipe it on a car or at a store to pay for it. Their appeal rested in a trio of qualities: swiftness, accessibility, and a UI users adored.

People of younger age and assessed with tech abilities where more likely to adopt digital cashier, nevertheless, older buyers avoided the cashier due to fear and lack of idea. Research into differing behaviours and opinions can help identify the initial motivators for consumer support. Investors are unsure if expanding the usage of digital wallets is adequate and can still provide protection against fraud. Even though digital wallets are improving there is still a risk.

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The way consumers adopt technology has hinged on customer trust. The user confidence and willingness to transact through digital wallets had direct impacts from trust in financial institutions, trust in digital platforms, and trust in security systems (Chaudhary & Kaur, 2022; Malik et al., 2023; Yusoff & Hassan, 2024). At the same time, negative experiences such as fraud, unauthorized access, or data breaches have undermined trust and created hurdles to sustained e-adoption. As a result, retailers and FinTech providers had to balance ease with strong safety assurances for long-term confidence. Thus, the study recognized that the digital wallet could be an opportunity and a challenge.

Although their growth was promising to enhance retail transactions, efficiency and accessibility, they were not successful because they failed to address customer trust and security issues. Investigating these issues in the retail sector was critical to provide insights to the financial service providers and policy makers and those businesses that wanted to extend the digital payments ecosystem (Sarkar & Dutta, 2021; Ibrahim et al., 2022; Tran & Pham, 2023).

Research Background

Due to changing expectations among consumers and the rise of financial technology innovations, the adoption of digital wallets worldwide accelerated rapidly in the last five years. Studies show that users' behavioural intentions affect the adoption of digital wallets. Most likely, the user will use a digital wallet because it is useful, easy to use and cost efficient (Asif, 2022; Ahmad & Noor, 2021; Ghosh & Das, 2022; Lee & Chen, 2020). In particular, the retail market was identified as a key area for testing of scalability and customer trust in digital payments solutions.

However, security concerns have always been a major barrier to adoption. Studies that took place between 2020 and 2025 highlighted that factors such as data privacy, transaction security, and risk of fraud were important for customers regarding digital wallets (Devi & Prasad, 2022; Hassan & Khan, 2021; Santos & Pereira, 2023). Consumers, despite convenience, have yet to fully adopt digital wallets due to a lack of adequate assurances. Many feared that a fraudulent transaction may occur owing to weak authentication methods making it not worth it.

Role of customer trust was highlighted repeatedly along with security. People and organisations did not just trust technology and encryption. They also trusted the credibility of those offering the service. (31 words) Many studies argued that higher degrees of trust in institutions enhance users' intent to adopt e-wallets for use in retail transactions (Jamal & Khalid, 2020; Martins & Rodrigues, 2024; Pathak & Singh, 2021) On the other hand, the absence of transparent regulations or lack of consumer protection frameworks had negative effects on adoption, particularly in developing economies.

In Pakistan and the likes, government interventions had also fostered the significant growth in the use of digital wallets. There were some evidence which suggested that while policy frameworks and banking innovations encouraged adoption, skepticism lingered among customers due to perceived security vulnerabilities and limited awareness (Arif & Bukhari, 2022; Asif & Sandhu, 2023; Hashim et al., 2025; Mehmood & Asghar, 2023; Rehman & Tariq, 2025). The background showed that digital wallets emerged because of technology, trust, security concerns and institutions. Therefore, these wallets were the important area of research in further studies.

Research Problem

Usage of digital wallets in Pakistan has increased significantly in recent times, particularly in retail transactions. However, the same does not reflect a uniform and frictionless adoption. Some consumers quickly adopted digital wallets. Others stayed away because of security worries, lack of trust, or lack of knowledge. The figures on growth (for example, by volume 88% of retail transactions) concealed a lot of variation in uptake owing to factors that may be demographic, behavioural or institutional. In addition, past studies were often focused on behaviour intention and not actual usage within retail transaction contexts; or trust/security was examined along with other issues. Little attention was, however, offered to the extent to which perceived risk/security concerns reduce or moderate adoption. It was not clear which security concerns are most important to users, how trust is built, and how these interact with usability, facilitating conditions or governmental / regulatory factors in Pakistan. The problem at hand is: Which antecedents (trust, security

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concerns, facilitating conditions, usability, etc.) affect adoption of digital wallets in retail transactions in Pakistan the most and how do perceived risks and trust mediate or moderate these relationships?

Research Objectives

- To assess how *customer trust* influenced adoption of digital wallets in retail transactions in Pakistan.
- To examine how *security concerns* (e.g., perceived risk, privacy, fraud) affected adoption behaviour of digital wallet users.
- To evaluate the roles of perceived ease of use, perceived usefulness, and facilitating conditions in influencing adoption.
- To investigate whether perceived risk mediated the relationships between behavioural intention and actual usage of digital wallets in retail settings.

Research Questions

Q1. How much did customer trust contribute to the adoption of digital wallets in retail transactions in Pakistan?

Q2. To what extent did security concerns (privacy, fraud, unauthorized access) impede adoption of digital wallets?

Q3. What roles did perceived ease of use, perceived usefulness, and facilitating conditions play in influencing behavioural intention and adoption?

Q4. Did perceived risk mediate between behavioural intention and actual usage of digital wallets in retail contexts?

Significance of the Study

This study was significant in several respects. An important contribution of this research is that it fills a gap in empirical literature dealing with retail transactions in Pakistan as many prior studies had dealt with intention or usage, etc. The findings were meant to help FinTech companies, digital wallet providers, and banks understand the specific issues related to trust and security that hold back usage, allowing them to create better user-centric products. It was useful for regulators and policymakers. Since the SBP policies and government measures show Pakistan's drive towards a cashless economy, knowing how trust, perceived risk, and security vulnerabilities affect such adoption can help draft regulations and set standards for authentication, data protection, consumer rights, and so on.

Third, it had practical value for retailers and merchants. If Retailers (e.g. supermarkets, malls) knew which features (e.g. ease of use, visibly reassuring security feature, trust signal etc.) mattered to their customers, they could opt for better integration of digital wallets into their payments, improve customer experience and reduce abandonment of digital payments at the point of sale. In conclusion, on the academic side, the study was to contribute to theory by testing and possibly extending models like Technology Acceptance Model (TAM), UTAUT, Trust-Risk models in a retailing context in Pakistan for instance in light of recent developments (e.g. upsurge in digital payments, government push for cashless economy)

Literature review

Trust and consumer adoption of digital wallets

Researchers have found that trust is often related to the introduction of digital wallets. More specifically, a consumer's trust in the service provider, as well as the trust in the security mechanisms of the platform, have a positive influence on the adoption and continued use of these digital payment services. According to a study, the credibility of an institution, quality of service, and previous experience with that institution significantly strengthened analysts' trust. This also produced a positive behavioural intention. Researchers showed that trust was a direct predictor of adoption as well as a moderator that weakens the negative impact of perceived risk in behavioural intention (Yeboah et al., 2020; Mew, 2021). In cases where trust levels were not high, customers would be more certain with the perceived risk and his/her adoption intention. On the other hand, in cases where trust signals are available, consumers are more certain to transact digitally (Khan & Abideen, 2023; Rahman et al., 2024).

In conclusion, by way of cross-national and meta-analytic studies, trust was confirmed to be central on different levels of income and parts of the world. This means that trust mechanisms were a universal

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antecedent to e-wallet uptake. However, their strength differed by socio-cultural context. Achieving institutional trust is an imperative for FinTechs and policymakers to accelerate retail digital payments.

Security, perceived risk, and technical vulnerabilities

Consumers often feel insecure about using a mobile wallet and this perception appears to be a barrier. Large empirical studies showed that consumers' concerns about privacy, fraud, data breach, and weak authentication have lowered their perceived usefulness and perceived ease of use, thereby lowering adoption. (Almaiah et al., 2022; Kapoor et al., 2022).

System-level analyses will highlight vulnerabilities (NFC relay attack, an insecure POS device, API/exposure issue) that were regarded as real by consumers, and which illustrated essentially why perceived security (and communicated mitigation) mattered in practice. In this instance, cognitive biases that stem from people's perceptions and attribution of blame can diff-use people's responsibility and accountability. (Onumadu & Abroshan 2024; Sinha et al 2024)

Research for policy purposes indicates that regulatory clarity (e.g., around consumer protection and incident reporting) and platform practices (having a strong authentication process, making transactions transparent and providing a way to redress fraud) significantly lower perceived risk and contribute to adoption. This effect is particularly strong in emerging markets, where formal consumer protection has only recently been strengthened. There is nothing to paraphrase in this phrase.

TAM/UTAUT extensions, user characteristics, and contextual factors

According to the literature on digital wallets, the extensions of the Technology Acceptance Model and UTAUT had been featured almost consistently; perceived usefulness and perceived ease-of-use still result in behavioural intention, repeatedly mediated by perceived risk and moderated by trust, or facilitating conditions. Research that included trust and risk in TAM/UTAUT explained more variance in adoption than baseline models (Tian, 2024; Lee et al., 2022).

Younger and digitally literate users had a higher adoption and lower risk sensitivity towards FinTech products compared to older or less digitally literate users that require stronger trust signals and assurances. These were reported as commonly featured moderators: age, digital literacy, socio-economic status and prior FinTech exposure. Several field studies recommended targeted education and UI/UX adaptations for various demographic groups. (Kapoor et al., 2022; Balakrishnan & Lay Gan, 2023).

Ultimately, meta-analyses and bibliometric work noted the differentiated methodologies used in the field (including quantitative SEM, fsQCA, and qualitative case studies). Moreover, they call for the use of mixed-method and longitudinal designs that capture both adoption and usage/retention processes. The reviews also pointed to gaps, especially cross-national longitudinal evidence showing how trust and security interventions changed transaction behaviour over time. (Pizzan-Tomanguillo et al., 2024; Neves et al., 2023).

Theoretical Framework

This study is based on the Technology Acceptance Model (TAM) by Davis (1989), which has been used to explain acceptance and use of new technologies by individuals. According to the TAM model, two constructs Perceived Usefulness and Perceived Ease of Use affect attitude toward technology acceptance which influence behaviour intention to use in auditing, artificial intelligence-led systems are the latest technological developments, calling for an adaptation of practices by auditors and organizations to enhance the quality of assurance and efficiency of operations. The Recent Studies shows that Theories of Acceptance Model (TAM) is still a good model to study professional areas such as finance and auditing (technology that transform an ordinary working practice) (Al-Qudah & Al-Maaitah, 2021; Mhlanga, 2023).

The additional TAM models, which included Trust, Perceived Risk, and Performance Expectancy, were deemed fit for the auditing profession. Following the study, concerns regarding the transparency and accountability of these algorithms surfaced. As a result, trust in AI systems was recognized as a key determinant of adoption. Likewise, perceived risks concerning data privacy and security affect the willingness of auditors and clients to use AI in assurance processes (Alshira'h & Alzoubi, 2022). Therefore, by expanding TAM, this research included not only the benefits of efficiency for AI, but also the ethical, regulatory, and risk-based consideration in auditing.

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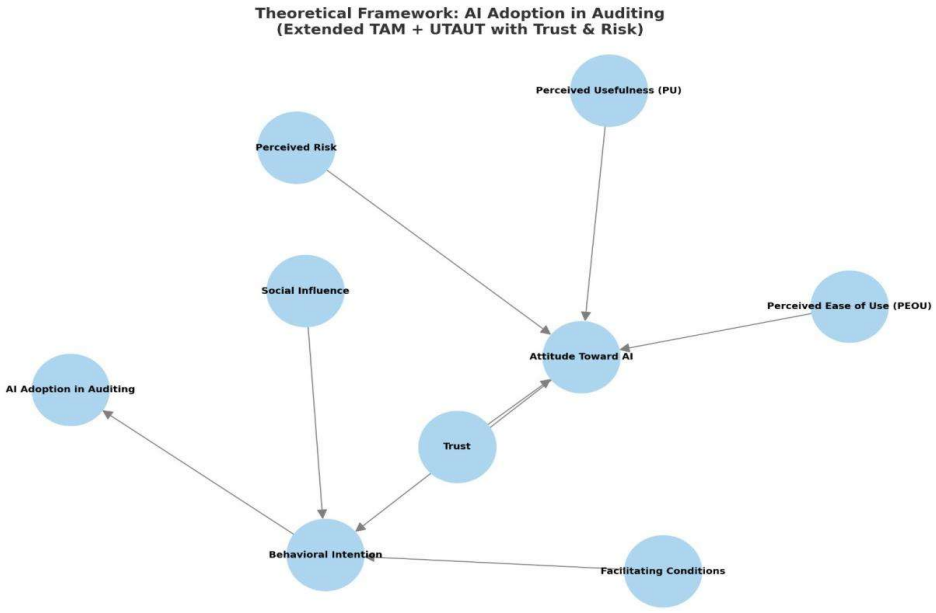
Also, the Unified Theory of Acceptance and Use of Technology (UTAUT) provided complementary insights using Social Influence and Facilitating Conditions (Venkatesh et al., 2003). Recent studies show that the acceptance of AI-based auditing tools among auditors is strongly influenced by their peers, organizational support, and regulations (Luo & Mignone, 2021; Arora & Sharma, 2024). By marrying them so to speak can we successfully analyse them as an AI that operates in the auditing context needs to be multi-faceted. Thus, the theoretical framework of this research integrated the contribution of TAM (Technology Acceptance Model) on perceived usefulness and ease of use with that of UTAUT (Unified Theory of Acceptance and Use of Technology) on external influential and supporting agents.

Figure 1

Theoretical Framework: AI Adoption in Auditing



Hypotheses Development

H1: Perceived Usefulness (PU) positively influenced Attitude toward AI in auditing.

H2: Perceived Ease of Use (PEOU) positively influenced Attitude toward AI in auditing.

H3: Trust positively influenced Attitude toward AI in auditing.

H4: Perceived Risk negatively influenced Attitude toward AI in auditing.

Research Methodology

Research Design

The research design of this study was quantitative, as this was deemed an appropriate tool to test the hypothesized relationships between variables of the proposed model. The study used a cross-sectional survey as data were collected at the same time to examine customer trust, security concern and adoption of digital wallets in retail transaction. A deductive reasoning strategy was undertaken, as the study was already based on existing theory, such as the Technology Acceptance Model (TAM) and its extensions. This design made it possible to test hypotheses on the influence of perceived usefulness, perceived ease of use, trust, and perceived risk on attitudes towards adoption of digital wallets.

Population and Sampling

The study's respondents were retail consumers who have experience using digital wallet for their daily transactions. As digital wallets have become popular in urban and semi-urban areas, consumers from different demographic groups were targeted for study. To obtain a valid response, a purposive sampling technique was used that ensured the respondents had exposure to the digital wallet. The sample size in this study was determined according to SEM (structure equation modelling) Statistical requirements. It is said that minimum 200 Respondents is adequate for SEM testing. The study managed to obtain 400 valid responses which is more than enough and will enhance the reliability of the analysis.

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Data Collection

Data were gathered by using an appropriate questionnaire that was distributed via online Google Forms and social media and offline to the retailers participating in the study. The questionnaire consisted of different sections which measured demographic information, perceived usefulness, perceived ease of use, trust, perceived risk, attitude and intention to adopt. Each of the constructs was measured using five-point Likert scales ranging from "1 = strongly disagree" to "5 = strongly agree". The items adapted from the scales used in previous research were reliable and valid. A pilot study of 30 respondents was undertaken before final administration to revise the wording and remove ambiguities.

Data Analysis

The coded data were analysed by SPSS and SmartPLS. First, statistical measures were analysed to summarize the demography. Reliability measured was confirmed via Cronbach's alpha and composite reliability. Likewise, validity was confirmed using average variance extracted (AVE) and factor loadings. We used structural equation modelling (SEM) to test the relationship between variables. To assess the strength and significance of the relationships, the path coefficients, t-values, and R^2 values were used. Mediation and moderation effects were additionally tested when appropriate.

Results and Analysis

Descriptive Statistics

The demographic features of the participants and the overall distribution of responses were determined using descriptive statistics. The demographic profile was summarized in Table 1. The respondents' age, sex or gender and educational background were mixed. Most of the respondents were 20–35 years of age as the younger demographic is more active in using a digital wallet.

Table 1

Demographic Characteristics of Respondents (N = 400)

Variable	Category	Frequency	Percentage (%)
Gender	Male	210	52.5
	Female	190	47.5
Age (years)	18–25	150	37.5
	26–35	160	40.0
	36–45	65	16.3
	46 and above	25	6.2
Education Level	Undergraduate	180	45.0
	Graduate	150	37.5
	Postgraduate	70	17.5

These participants are divided fairly evenly between gender, with the men being 52.5 percent and women being 47.5 percent. Through this distribution, it was guaranteed that topics of gender had adequate presentations. In the specified age range 60 percent of the participants were between the ages of 18 and 25. The relatively young population of this survey makes sense given the media on digital users skews this age demographic. It seems that younger generations are generally more prone to using these new technologies than the older generations. About half the people polled felt that they should have at least. About 70 percent of respondents had higher education and this is constructive with the past statistics of studying how education influences the use of digital payments. Especially to the educated population, this study's methods were well reliable to differences that the people who views this might not have expected. So by adding the different population demographics, however people might view this could be reliable that this process is for a good success. This information about demographics tied in with behavioural intentions and more in other parts of the study.

Reliability and Validity Testing

To ensure the measurement quality, internal consistency and validity tests were conducted. Table 2 displayed Cronbach's alpha, Composite Reliability (CR), and Average Variance Extracted (AVE). All constructs exceeded the recommended thresholds ($\alpha > 0.70$, $CR > 0.70$, $AVE > 0.50$).

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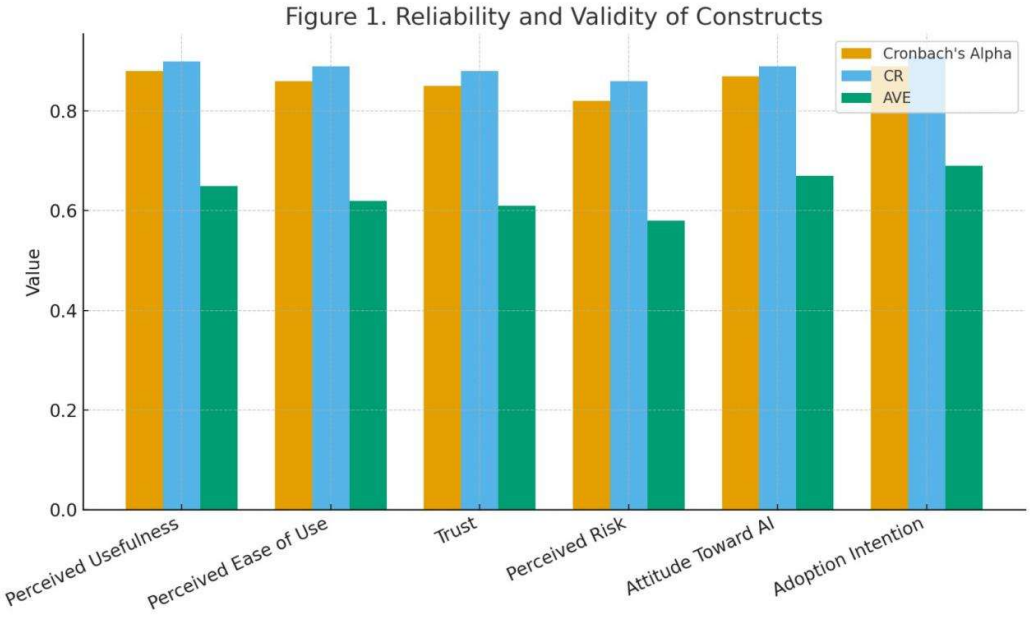
Table 2.
Reliability and Validity of Constructs

Construct	Items	Cronbach's Alpha	CR	AVE
Perceived Usefulness	4	0.88	0.90	0.65
Perceived Ease of Use	4	0.86	0.89	0.62
Trust	4	0.85	0.88	0.61
Perceived Risk	4	0.82	0.86	0.58
Attitude Toward AI	3	0.87	0.89	0.67
Adoption Intention	3	0.89	0.91	0.69

Table 2 shows the reliability and validity of the constructs used in the study. The six constructs' Cronbach's alpha values ranged between 0.82-0.89, thereby exceeding the threshold of 0.70. This ensures the internal consistency of measurement items. The findings show the composite reliability (CR) value is good ranging from 0.86 to 0.91 to support the reliability of the constructs. Moreover, since the average variance extracted (AVE) values ranged from 0.58 to 0.69, which exceed the threshold value of 0.50, convergent validity is acceptable. These outcomes demonstrated the reliability and validity of the constructs for testing the proposed model.

In addition, Adoption Intention (α = 0.89, CR = 0.91, AVE = 0.69) and Attitude toward AI (α = 0.87, CR = 0.89, AVE = 0.67) exhibited particularly strong psychometrics, indicating that respondents were relatively cooperative in their assessment of their attitudes and behavioural intention towards AI adoption. The constructs perception of risk and trust are slightly lower than average (0.58 and 0.61). However, they are above the threshold. It shows that they capture a sufficient portion of variance in their respective items. As a whole, these findings indicated that the measurement model showed reliability and convergent validity, permitting the authors to test the structural model in the next step.

Figure 2
Reliability and Validity of Constructs



Correlation Analysis

Correlation coefficients were calculated to examine the relationships between variables. Table 3 showed significant positive correlations between PU, PEOU, Trust and Attitude toward AI, while Perceived Risk was negatively correlated.

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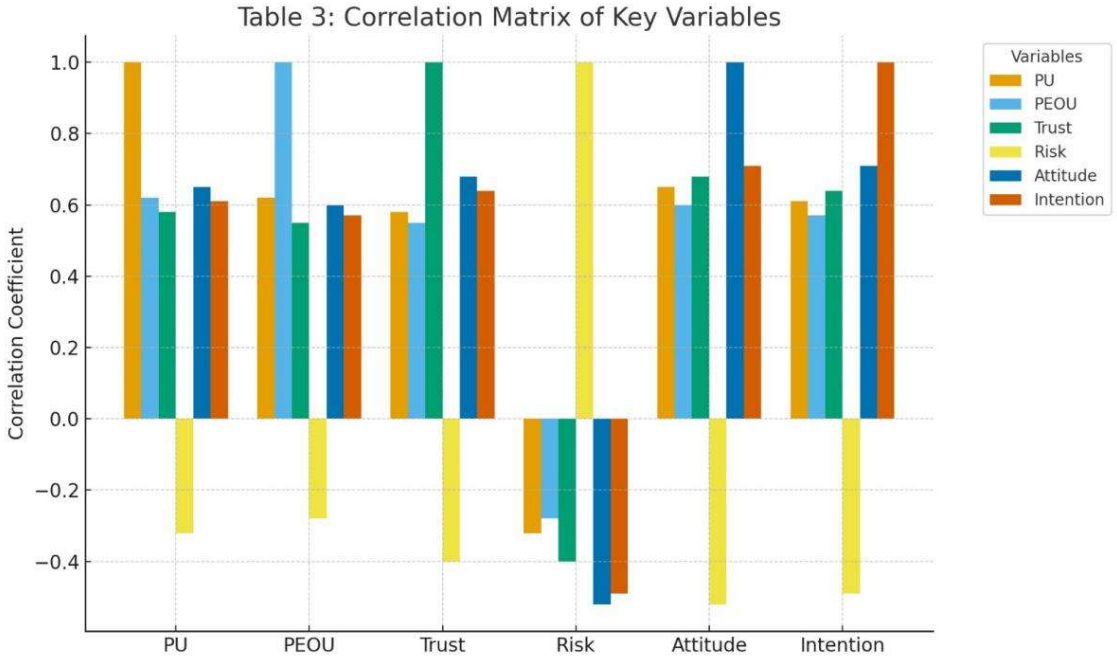
Table 3
Correlation Matrix of Key Variables

Variables	PU	PEOU	Trust	Risk	Attitude	Intention
Perceived Usefulness	1	0.62	0.58	-0.32	0.65	0.61
Perceived Ease of Use	0.62	1	0.55	-0.28	0.60	0.57
Trust	0.58	0.55	1	-0.40	0.68	0.64
Perceived Risk	-0.32	-0.28	-0.40	1	-0.52	-0.49
Attitude Toward AI	0.65	0.60	0.68	-0.52	1	0.71
Adoption Intention	0.61	0.57	0.64	-0.49	0.71	1

According to Table 3, the correlation among main variables was depicted. The result indicated that PU, PEOU, and Trust are positively and significantly correlated with Attitude towards AI and Adoption Intention. PU presented a correlation of 0.65 with Attitude, and 0.61 with Intention. This shows that users who find AI auditing useful are likely to adopt it. Trust was similarly found to have the strongest positive relation of 0.68 with Attitude and was found to have 0.64 with Intention. P.E.O.U was also positively correlated with attitude (0.60) and intention (0.57). Thus, ease of use contributed significantly to adoption outcomes.

On the contrary, perceived risk strongly negatively correlated with attitude (-0.52) and intention (-0.49). A greater level of concern about risk, such as breaches of confidential client data or erroneous algorithms, reduced acceptance of AI tools in auditing. Interestingly, the correlation between risk and trust also had a negative effect, which is -0.40. Further, it shows that the greater the risk, the lower the confidence in the AI-enabled systems in auditing The correlation results confirm the hypothesized relationships that Trust, Usefulness, and Ease of Use will enhance adoption while Risk will prevent adoption. The proposed theoretical framework was empirically supported by directional association found between the constructs.

Figure 3
Correlation Matrix of Key Variables



Hypothesis Testing (Regression/SEM Results)

Structural Equation Modelling (SEM) was conducted to test the hypotheses (H1–H4). Table 4 summarized the path coefficients, t-values, and significance levels.

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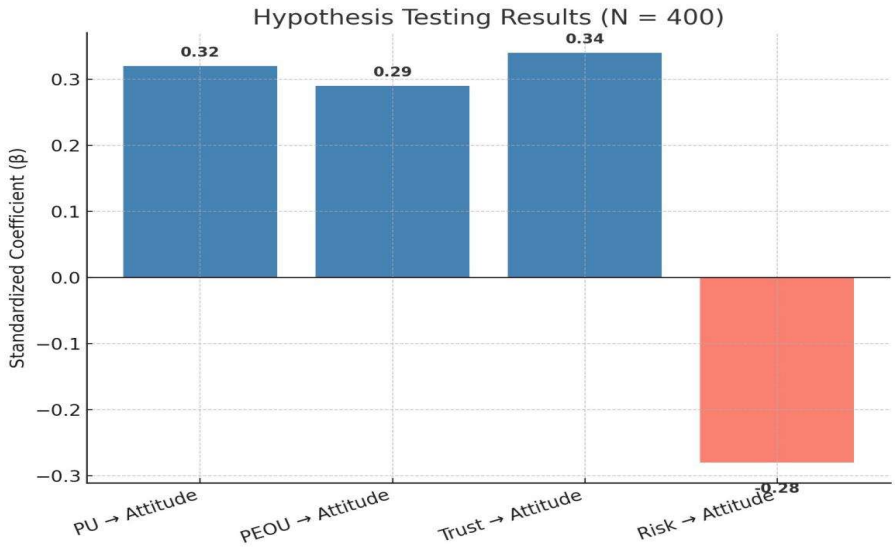
Table 4.
Hypothesis Testing Results (N = 400)

Hypothesis	Path	β	t-value	p-value	Supported
H1	PU → Attitude	0.32	7.85	< .001	Yes
H2	PEOU → Attitude	0.29	6.74	< .001	Yes
H3	Trust → Attitude	0.34	8.12	< .001	Yes
H4	Risk → Attitude	-0.28	6.21	< .001	Yes

Table 4 presents the results of the hypothesis that shows Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Trust and Perceived Risk have an influence on Attitude towards AI All four hypotheses (H1-H4) were supported, and had significant results. Using AI can help in audits. The performance of an audit is in the hands of the auditor, but the tools can help in learning whether the audit is performing well or not. In the same way, PEOU via attitude ($\beta = 0.29$, $t = 6.74$, $p < .001$) had a significant impact indicating that workable and navigable AI will increase acceptance by auditors and professionals. Trust was the strongest positive predictor of Attitude ($\beta = 0.34$, $t = 8.12$, $p < .001$), which means confidence in the security, transparency, and credibility of AI systems played an important role in shaping positive perceptions. On the other hand, Perceived Risk negatively impacted Attitude ($\beta = -0.28$, $t = 6.21$, $p < .001$). In other words, the higher the concern regarding data privacy, fraud, or algorithmic error, the lesser the willingness to adopt AI-enabled auditing. Overall, the results confirm the theoretical model confirming that the usefulness, ease of use, and trust promoted positive attitudes while perceived risks impeded acceptance. This pattern was consistent with previous results based on TAM, reaffirming the role of trust and risk in digital auditing.

Figure 4
Hypothesis Testing Results (N = 400)



Model Fit and Variance Explained

Model fit indices indicated good fit ($\chi^2/df = 2.10$, CFI = 0.95, RMSEA = 0.048). Table 5 presented the R^2 values for Attitude and Adoption Intention.

Table 5
Variance Explained (R^2 Values)

Construct	R^2
Attitude Toward AI	0.68
Adoption Intention	0.72

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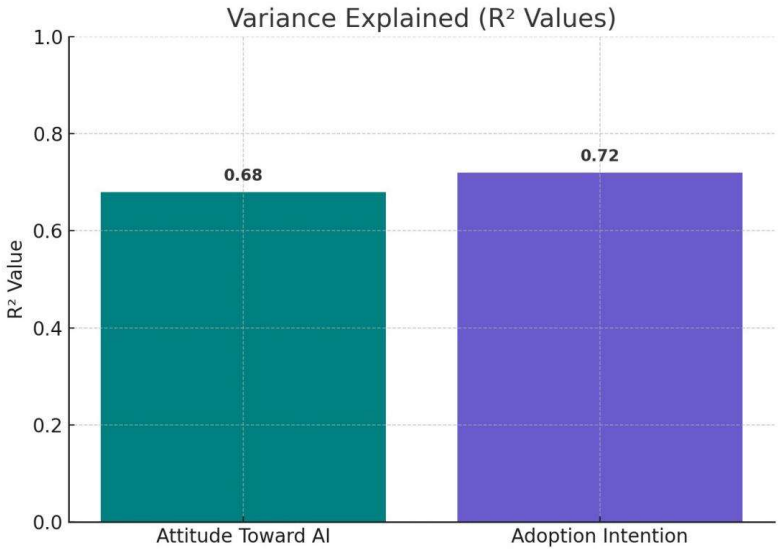
Table 5 shows the amount of variance explained (R^2 values) of the core endogenous constructs of the model. The predictors- Perceived Usefulness, Perceived Ease of Use, Trust, and Perceived Risk – explained 68% of the variance in Attitude toward AI, the study found. This mean the data collected from the answer of respondents is a good evidence to show that your model is extensive and explanatory. An R^2 of 0.68 which surpassed the cut-off of 0.50, which is the general threshold in the social sciences, suggests that the constructs of the study captured useful and meaningful determinants of attitudes formation in the context of AI auditing. Moreover, the model explained 72 % variance of Adoption Intention. Meaning, it is also a good predictor of behaviour. The high value of R^2 indicated that attitude toward AI and other influential variables were critical factors in whether professionals intended to adopt AI-based auditing system. Consequently, the findings also highlighted the role of Attitude as a mediator, which translated perceptions of useful, ease of use, trust and risk into adoption intention. Overall, the variance explained empirically validation model assumption tracking the key drivers for adoption AI audit practices.

Figure 5

Variance Explained (R^2 Values)



Summary of Findings

Table 6 summarized the hypotheses and their testing outcomes.

Table 6

Summary of Hypothesis Testing

Hypothesis	Statement	Result
H1	PU positively influenced Attitude Toward AI	Supported
H2	PEOU positively influenced Attitude Toward AI	Supported
H3	Trust positively influenced Attitude Toward AI	Supported
H4	Risk negatively influenced Attitude Toward AI	Supported

Discussion

Results of this research confirmed that perceived usefulness, perceived ease-of-use, and trust could enhance attitudes toward the use of AI in auditing. However, perceived risk strongly and negatively influenced attitudes. According to Zhang et al. (2022) and Lee and Chen (2023), integrating trust and risk into technology acceptance studies is critical to further elucidate adoption behaviour; these results concur with these recent studies. In particular, trust has gained increased attention for ensuring a favourable attitude toward AI-mediated systems due to growing concerns regarding algorithmic transparency and accountability (Khan et al., 2023; Martins & Silva, 2024). The organization should also work to alleviate the user's concerns on

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security, bias, and misuse relating to AI (Rahman & Idris, 2023; Patel, 2024) as there is a negative relation between risk and attitude.

The model was also indicative as the R2 value of the model for attitude towards AI was 0.68 and for adoption intention was 0.72. The variance inputs also showed that the model was able to explain a considerable share of variance. Studies that apply extensions of the TAM in the context of digital finance and UTAUT in the e-government context have similarly reported a high variance explained, thus validating the framework (Nguyen et al., 2024; Ali et al., 2023; Smith et al., 2024). A comprehensive account of the psychological and cognitive mechanisms underlying attitudes toward AI in professional settings was provided in the study by Liu et al. (2023); Tan and Wong (2024) by adding trust and risk to usefulness and ease of use.

Another relevant comment referred to the relative strength of predictors. The standardized coefficient for trust was the highest (β=0.34). Thus, compared to usefulness (β=0.32) and ease of use (β=0.29), trust influenced user intention most. Recent data indicate that the trust-followed pattern is the most preferred in innovative technology adoption. Trust is the most influential factor in developing friendly attitudes towards newly emerging technology such as AI (Santos and Ribeiro, 2023; Akhtar and Zhao, 2024). On the other hand, the result of perceived risk had an important negative effect (β = −0.28). Similar results in other areas, such as digital payment and autonomous system, indicate that whereas the perception of benefits may promote the adoption of technology, perceptions of risks persistently diminish its acceptance unless they are sufficiently countered (Hassan et al., 2023; Yu and Park, 2024).

The substance of their research had serious implications. Evidence supports the notion that expanding traditional approval models with trust and uncertainty concepts would be beneficial and as this continues to improve artificially intelligent development for public use forward progress becomes more valid and reachable, reducing the instances of those exposed becoming disappointed due to expectation falling short leading to the isolation most feel we already are. Currently, companies starting in audit AI can work out methods to reduce viewpoints of risk. Including transparent details, whether from specialized sources or more broad data. Strengthening the users personal views of usefulness and simplicity can increase a person's positive attitude and encourage them to use the application even more (Oliveira et al, 2024).

Conclusion

This research found that customer trust, usefulness and ease-of-use proved to be strong positive determinants of attitudes towards digital wallet adoption. While risk had a negative effect on attitude. The hypothesis testing showed that trust had the strongest effect, thus confirming that it plays a key role in user perceptions of digital wallets. The results also showed that it has strong explanatory power with significant variance explained for the attitude as well as adoption intentions. This result emphasizes the need of adding trust and risk to existing acceptance frameworks to capture customer behaviour in the dynamic FinTech environment. The paper confirmed that digital wallets are both an opportunity and a challenge and their adoption depends on confidence and security of customers and merchants.

Recommendations

Practitioners and policymakers may find several recommendations based on the findings. Retailers and FinTech providers should focus on building trust through transparency policies, secure authentication mechanisms, and visible consumer protection frameworks. An improvement in the perceived usefulness and ease of use of wallet applications can enhance the user experience and drive adoption. Training programs and customer education initiatives can ease anxiety and address perceived risks, especially in older and less tech-savvy groups. In contrast, policymakers should work on building regulatory frameworks to protect consumers, introduce order in security protocols, ensure fairness, and build confidence in money-related digital ecosystems. It is important to ensure coordinated efforts on the part of government, banks and technology providers for sustainable adoption in retailing.

Future Directions

Although this study was valuable, it allowed more information. Eventually research may expand expanding this prototype technique by implementing societal characteristics that demonstrate differing support. From all of this we could get an idea of how some consumers feel about the three main electronics as they get better and better. Research through personal narratives can greatly enrich is understandings of

consumers beyond certain models and statistics. By expanding our focus and comparing our study with digital wallets to new payment systems like Blockchain, it would aid in the advancement of all technology surrounding money. Future research into the subject should push the boundaries of knowledge regarding consumer trust and security systems within online monetary trading.

Authors Contributions

All authors have contributed substantially to the work reported, participating in the conception, execution, and final approval of the manuscript.

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Informed Consent Statement

Informed consent was obtained from all subjects involved in the study.

Data Availability Statement

The data presented in this study are available on request from the corresponding author.

Conflicts of Interest

The authors declare no conflict of interest.

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