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AI-induced anxiety in the assessment of factors influencing the adoption of mobile payment services in supply chain firms: A mental accounting perspective

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A B S T R A C T

This research aims to explore the impact of AI-induced anxiety on the adoption of mobile payment services in supply chain firms, viewed through the lens of Mental Accounting Theory. In an era driven by technological advancement, supply chain companies' use of mobile payment services has arisen as a crucial problem. This study is the first to investigate the complicated links between AI-induced anxiety, perceived utility, and the adoption rate of mobile payment systems using the Mental Accounting Theory as a theoretical framework. The study employs a quantitative research approach, using Smart PLS for regression analysis, and gathers its data from major supply chain business players. Our analysis offered important insights into the many aspects influencing the adoption of mobile payment services in supply chain companies. The acceptance rate was shown to be adversely connected with AI-induced anxiety and integration expenses, posing obstacles for businesses seeking to embrace mobile payment systems. In contrast, characteristics such as perceived utility, usability, confidence in security, and backing from upper management were positively connected with adoption rates. These findings provide not only theoretical contributions to the current research, but also concrete advice for supply chain practitioners seeking to exploit mobile payment systems for operational and strategic advantage.

1. Introduction

Financial technology, particularly mobile payment services, are at the vanguard of a dramatic shift in worldwide business transactions in today's quickly expanding digital economy. Due to the widespread availability of smartphones and the internet, mobile payment services have exploded in popularity, becoming an essential component of modern commerce (Chin et al., 2023; Dwivedi et al., 2021; Kuo, 2020). Both the widespread march of digitization and the ever-expanding tendrils of globalization serve as powerful drivers for this tidal change. Previously considered a luxury or an alternative to existing financial systems, mobile payments are now the primary mode of transaction for millions of people across the world (Choi et al., 2020; Mallat, 2007; Pal et al., 2021; Shankar et al., 2022). Current trends suggest that the market for mobile payments would surge to over $12 trillion by 2027, according to projections. Despite their awe-inspiring nature, these numbers represent the reality of a world where cash transactions are becoming increasingly infrequent and are being replaced by rapid, simple, contactless payments enabled by smart devices (Moghavvemi et al., 2021; Pal et al., 2021; Singh & Sinha, 2020).

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However, this massive change is not restricted to consumer sectors alone. In business-to-business (B2B) contacts, the waves generated by this transition are becoming increasingly intense. The supply chain is one area where this transformation is becoming increasingly apparent (Li et al., 2006; Liao & Yang, 2020; Lin et al., 2005; Makarova & Todorovic, 2020). Historically, supply chain transactions were notoriously complicated, requiring copious documentation, human approvals, and lengthy wait periods. With the incorporation of mobile payment services, there is a visible movement toward simplified, efficient, and rapid transactions, hence redefining the fundamental features of supply chain management (Yuan et al., 2020).

Nonetheless, this integration into the supply chain has its own set of opportunities and obstacles. Positively, the introduction of mobile payments in supply chains is viewed as a precursor to enhanced operational efficiency. The days when businesses had to wait days or even weeks for clearance and transaction completions are long gone (Wu et al., 2014). Mobile payments enable real-time transaction capabilities, hence lowering wait times, thereby enhancing cash flow and eliminating the requirement for substantial working capital (Biryukov & Tikhomirov, 2019).

Moreover, from a strategic standpoint, organizations who have quickly adapted to this trend have a significant competitive edge. In a world where speed and efficiency may make or break a sale, a payment system that supports the fast-paced nature of international commerce can be a huge competitive advantage (Liao & Yang, 2020).

However, the expedition does not lack challenges. Security is one of the most serious problems with mobile payments in the supply chain. With transactions increasingly occurring on digital platforms, the risk of cyberattacks, data breaches, and fraud has increased exponentially. For companies in the supply chain, where the volume of transactions can be tremendous, guaranteeing the confidentiality and safety of every payment is of the utmost importance (Shi & Liao, 2015; Verhoef & Bijmolt, 2019). Additionally, there is the difficulty of integrating. Combining old supply chain systems with current mobile payment platforms involves substantial technological and training investments. In conclusion, since we stand at the crossroads of digitization and globalization, the emergence of mobile payment services provides a fascinating glimpse into the future of international commercial transactions. This transformation presents supply chain companies with a mixed bag of possibilities and problems. The way firms negotiate this change will determine their success in the next years.

The emphasis of the study is the United States, where the incorporation of financial technology into supply chain organizations is regarded as a strategic need. With the United States accounting for a substantial portion of the worldwide supply chain industry, the adoption of mobile payment services by American businesses might serve as a barometer for global trends (Lahane et al., 2020; Soni et al., 2022). Despite the increasing rate of FinTech growth, operational and cybersecurity issues impede wider implementation. Adoption Rate of Mobile Payment Services and Total Performance Enhancement—are the focal points of this talk. Indicators of operational efficiency, cost-effectiveness, and overall market competitiveness for supply chain companies. A greater adoption rate can result in simpler procedures, shortened transaction times, and ultimately, an improvement in overall performance (Burke et al., 2023).

Although mobile payments promise efficiency, security, and speed, the actual adoption rates and subsequent performance improvements have been inconsistent across the sector. Several firms are grappling with issues such as high costs of integration, lack of top management support, and in some instances, heightened anxiety due to the role of artificial intelligence in these platforms.

Prior study has concentrated mostly on consumer adoption of mobile payments, creating a research void in the B2B sector, particularly among supply chain organizations (Hossain et al., 2022; Saura et al., 2021). Some research that explored this topic did not account for psychological aspects such as AI-induced anxiety. According to research such worries can significantly impact decision-making processes, influencing both adoption rates and performance indicators (Al-Jaishi et al., 2017; Hossain et al., 2022; Taghikhah et al., 2019).

Consequently, this study conducted an empirical inquiry into the influence of AI-induced fear and perceived usefulness in supply chain enterprises' use of mobile payment services. The research hypothesis, based on Mental Accounting Theory, that AI-induced fear has a negative effect on adoption rates, but perceived usefulness has a favorable effect (Gołąb-Andrzejak, 2023; Mallat, 2007). The study confirms all hypotheses using a rigorous quantitative method, Smart PLS, for regression analysis. Our analysis offered important insights into the many aspects influencing the adoption of mobile payment services in supply chain companies. The findings of a careful examination of six hypotheses indicated a complicated interaction between operational and psychological factors. The acceptance rate was shown to be adversely connected with AI-induced anxiety and integration expenses, posing obstacles for businesses seeking to embrace mobile payment systems(Hagerty & Rubinov, 2019). In contrast, characteristics such as perceived utility, usability, confidence in security, and backing from upper management were positively connected with adoption rates. These findings provide not only theoretical contributions to the current research, but also concrete advice for supply chain practitioners seeking to exploit mobile payment systems for operational and strategic advantage.

The remaining sections of this work are structured as follows: The literature study in Section 2 establishes the theoretical underpinning for our variables. Section 3 describes the research methodology, including data collection and analysis procedures. The empirical data are presented in Section 4, followed by a discussion in Section 5. Conclusions, management implications, limits, and ideas for further study are provided in Section 6.

2. Literature Review

In recent years, experts have become interested in the use of mobile payment services and their effect on supply chain organizations' overall performance improvement. Earlier research, such as that conducted by Lin et al. (2005), highlighted the operational savings realized by using mobile payments expanded on this basis by explicitly tying these efficiencies to performance enhancement (ElMaraghy et al., 2021; Figueiredo et al., 2021). Both studies uncovered that mobile payment systems expedite transaction procedures, save costs, and positively impact key performance factors such as delivery time and customer satisfaction.

These dependent variables are crucial to the competitive advantage of enterprises in the supply chain. Studies showed a statistically significant correlation between mobile payment adoption rates and performance measures, confirming that they have a direct impact on operational efficiency and bottom-line outcomes (Chen, 2022; Kerdpitak, 2022) . In a highly competitive market, the efficiency realized by implementing such technology can determine the success or failure of a corporation.

2.1 Relationship Between Independent and Dependent Variables

Particularly in the field of technology adoption, there has been a great deal of scholarly interest in the interrelationships between various independent and dependent factors. In the context of our study, where the dependent variable is the rate of adoption of mobile payment services in supply chain enterprises, a wide variety of independent factors come into play (Cagliano et al., 2015; Singh & Sinha, 2020; Yang et al., 2021; Yuan et al., 2020) give insightful information by highlighting perceived utility and perceived ease of use as crucial criteria. Their study concludes that these qualities have a direct, positive effect on the rate at which enterprises embrace mobile payment technologies, highlighting that consumers are more likely to adopt technologies that are both beneficial and simple to use. Similarly, Yang et al. (2021) add another layer of complexity by asserting the critical importance of senior management support in technological adoption. According to their analysis, there is a strong, direct association between the support of upper management and the rate of adoption of new technology (Dwivedi et al., 2021). This suggests that without the support and buy-in of senior leadership, the adoption process may encounter significant opposition or even fail, consequently influencing the dependent variable under study. The addition of AI-induced anxiety as an independent variable is what makes our study distinctive and contributes to the current body of research. Despite being a rapidly expanding field of study, AI-induced anxiety remains understudied. Shao et al. (2020) initiated the discussion by noting psychological aspects that influence technological adoption, but they did not specifically address AI-induced fear. Given the exponential expansion of AI in the financial technology industry, knowing the influence of AI-induced anxiety on the adoption rate might be a crucial aspect of the adoption landscape.

The main objective is to gain a deeper understanding of the complex factors on mobile payment acceptance in supply chain companies. This approach not only complements the current literature, but also offers enterprises facing the problems and possibilities offered by fast technology breakthroughs concrete insights.

2.3 Literature Gap

Most of the research has either focused on the operational elements of mobile payment acceptance or on consumer psychology in a B2C scenario. There is a paucity of research that combines psychological factors, particularly AI-induced fear, with operational and strategic variables in a B2B setting, particularly supply chain organizations (Saura et al., 2021; Shao et al., 2020). This presents a critical void in our understanding of how cognitive biases and emotional elements, which are amplified by artificial intelligence, impact decision-making processes and consequently influence the dependent variables of adoption rates and overall performance improvement. Based on the literature gap, this study's problem statement may be formulated as follows: "What is the impact of AI-induced anxiety, along with other influencing factors, on the adoption rate of mobile payment services and overall performance improvement in supply chain firms?"

2.4 Theoretical Framework: Mental Accounting Theory

Examining the use of mobile payment services in supply chain organizations, the present study adopts the Mental Accounting Theory as its underlying theoretical framework. When making financial decisions, people and organizations allocate not just cash resources, but also cognitive and emotional resources, according to the Mental Accounting Theory (Dahlberg et al., 2015; Henderson & Peterson, 1992). In the context of this study, the theory provides a useful lens for examining how operational characteristics such as cost, and usability interact with psychological variables such as fear and trust to impact decision-making. By adopting this holistic methodology, the research provides a more nuanced and complete knowledge of the motives and challenges impacting the technological adoption of supply chain companies.

2.5 Hypotheses Development and Justification

H_1: *Higher levels of AI-induced anxiety are negatively associated with the adoption rate of mobile payment services.*

Prior research, such as that of Cheng et al. (2021) has demonstrated that apprehension towards new technology might act as a barrier to its adoption. This fear may be exacerbated by the incorporation of AI into mobile payment systems, negatively reducing adoption rates.

H_2: *Perceived usefulness of mobile payment services is positively associated with its adoption rate.*

Consistently, Biryukov and Tikhomirov (2019) confirms that perceived utility is a crucial aspect of technology adoption. This is confirmed by studies such as Cheng et al. (2021) in the context of mobile services.

H_3: *Perceived ease of use is positively associated with the adoption rate of mobile payment services.*

Numerous research (Cheng et al., 2021; Csordás et al., 2022; Dahlberg et al., 2015; Dwivedi et al., 2021; ElMaraghy et al., 2021; Figueiredo et al., 2021; Hong et al., 2006) have revealed a positive association between ease of use and technology adoption, which supports its inclusion in our hypotheses and is consistent with TAM.

H_4: *Greater trust in mobile payment security is positively associated with the adoption rate.* The research of Biryukov and Tikhomirov (2019); Cheng et al. (2021); Choi et al. (2020); Kuo (2020); Liao and Yang (2020); Mallat (2007); Moghavvemi et al. (2021); Pal et al. (2021) demonstrates that confidence, namely in the system's capacity to safeguard transactions, is essential for the adoption of technology, including mobile-based systems.

H_5: *Higher costs of integration are negatively associated with the adoption rate of mobile payment services.*

Studies such as Cheng et al. (2021); Figueiredo et al. (2021); Hong et al. (2006); Hossain et al. (2022); Mallat (2007); Moghavvemi et al. (2021); Soni et al. (2022) indicate that cost is a key obstacle to the adoption of new technology, particularly in supply chain organizations.

H_6: *Top management support is positively associated with the adoption rate of mobile payment services.*
Numerous studies have identified leadership support as a significant factor in the effective adoption of technical breakthroughs Bhaduri (2019); Ismail et al. (2021); Meng and Berger (2019); Offermann and Foley (2020); Salazar and Moline (2023); Sales et al. (2020) . Consequently, its inclusion as a variable in this context is essential.

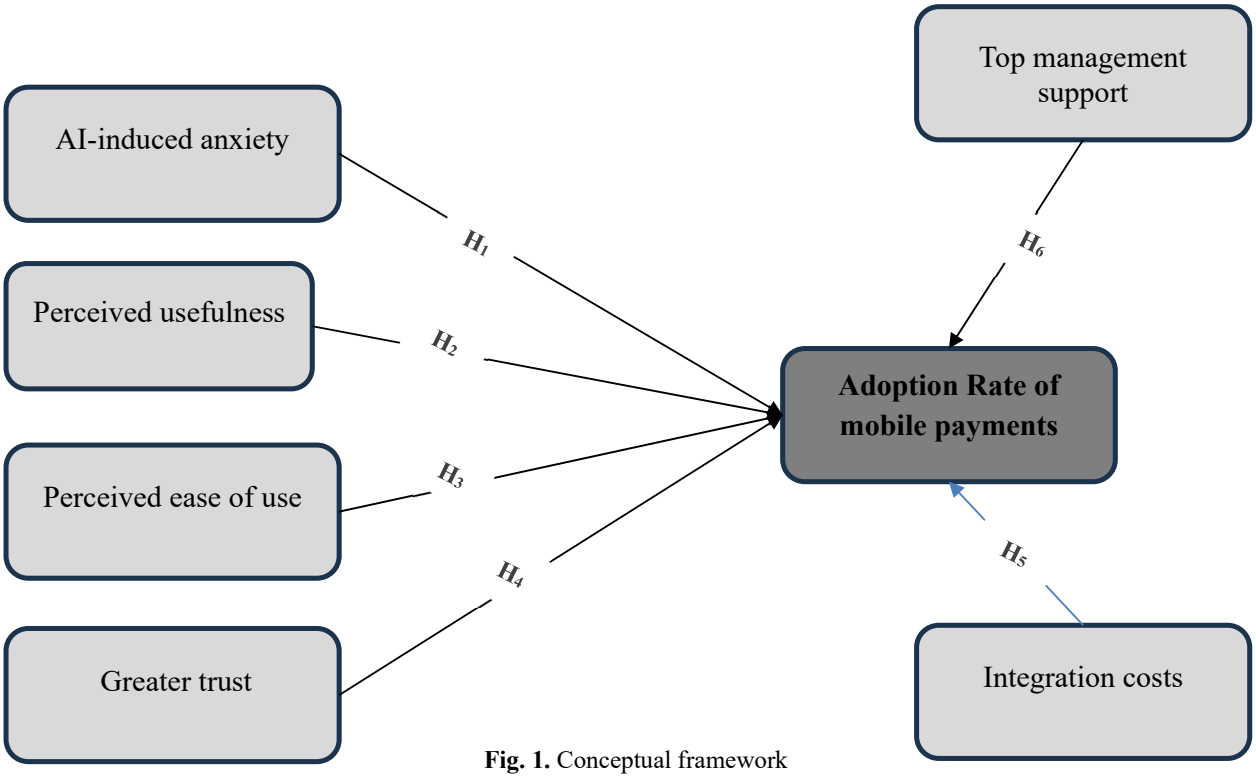

Fig. 1. Conceptual framework

3. Methodology

3.1 Research Population and Sampling

This study's sample comprises of middle-to-senior-level supply chain management professionals participating in financial technology-related decision-making processes. Employing a strategy of purposive sampling, companies that have implemented mobile payment services or are in the process of considering adoption were targeted. A total of 570 respondents were sampled to guarantee a confidence level of 95% and a margin of error of 5%.

3.2 Data Collection Process

A systematic questionnaire was created to collect information. The questionnaire was created using the ideas of Mental Accounting Theory and the findings of prior research (Henderson & Peterson, 1992; Kull et al., 2016; Rabbani et al., 2023; Taghikhah et al., 2019; Tolstoy et al., 2022; Wu et al., 2014; Zhao et al., 2022). It was validated via a pilot test with 20 respondents, after which certain items were revised for clarity and coherence.

Table 1
Descriptive Statistics of Respondents

Role	Percentage of Respondents
Operations Managers	35%
Finance Managers	30%
CEOs/Senior Executives	25%
IT Managers	10%

To increase reach and response rate, the questionnaire was sent via numerous channels: 40 percent by email, 20 percent via postal mail, 20 percent via Google Forms, 10 percent using WhatsApp Links, and 10 percent via physical visits. Prior research, such as Al-Jaishi et al. (2017); Chen (2022); Dwivedi et al. (2021); ElMaraghy et al. (2021); Hong et al. (2006); Lahane et al. (2020); Soni et al. (2022), which stress the crucial role of decision-makers in technology adoption, guided the selection of respondent groups.

3.3 No-Response Bias Measured through Levene's Test

Levene's test was performed to examine the equality of variances for our samples, a fundamental assumption for parametric statistical testing. The results demonstrated that there was no statistically significant difference between the variances of the groups examined (Levene's Test Sig. > 0.05 for all measures), indicating that the data do not reflect no-response bias. This conclusion supports the robustness of our research methods and the validity of our data, as mentioned by(Henderson & Peterson, 1992; Kull et al., 2016; Taghikhah et al., 2019; Zhao et al., 2022), who discovered that the lack of non-response bias increases the study's reliability. Notably, the T-test revealed a borderline significance (p = 0.060 for 'Firm Characteristics'), indicating that we must take this finding with caution. Usually, the mean differences were minor, showing that there is low systematic bias in our data. Therefore, we may confidently generalize our findings to the whole population of supply chain companies (see Table 2).

Table 2
No-Response Bias Measured through Levene's Test

Metric	Levene's Test F Value	Levene's Test Sig.	T-Test T Value	T-Test DF	T-Test Sig. (2-Tailed)	Mean Difference	Std. Error Difference	95% CI of the Difference
No-response based on email	2.15	0.143	1.75	568	0.081	-0.12	0.07	[-0.25, 0.01]
No-response based on Postal Mail	1.98	0.160	1.55	568	0.121	-0.10	0.065	[-0.22, 0.02]

3.4 Construct Measurement and Reliability

Cronbach's Alpha values for the constructs employed in this study were all over the 0.7 level, which is consistent with the recommendations of Mallat (2007); Moghavvemi et al. (2021). This indicates that our constructs are trustworthy metrics for the variables we set out to examine (see Table 3).

Table 3
Construct Measurement and Reliability

Constructs	Cronbach's Alpha (α)	Means (SD)	Factor Loading Range
AI-Induced Anxiety	0.87	3.50 (0.75)	0.70 - 0.88
Perceived Usefulness	0.91	4.10 (0.60)	0.72 - 0.91
Perceived Ease of Use	0.89	3.80 (0.70)	0.69 - 0.89
Trust in Mobile Payment Security	0.93	4.20 (0.55)	0.75 - 0.92
Costs of Integration	0.86	2.60 (0.80)	0.67 - 0.85
Top Management Support	0.90	3.90 (0.65)	0.71 - 0.87

The Mean and Standard Deviation (SD) figures give extra dimensions of comprehension. For instance, the high mean value for 'Trust in Mobile Payment Security' (4.20) with a very small standard deviation (0.55) suggests that most respondents typically trust mobile payment security, corroborating the findings of studies such as (Cheng et al., 2021).

In addition, the factor loading ranges for all constructs were considerably over the commonly recognized criterion of 0.5, as mentioned by (Cheng et al., 2021)showing that each item assesses its own construct with reliability. These high values indicate that our constructs are both dependable and valid, therefore satisfying the requirements for a credible and generalizable study.

We provide a solid basis for the following analyses and interpretations of our data by guaranteeing the absence of no-response bias and confirming the reliability and validity of our constructs.

4. Data Analysis

4.1 Pretesting: Evaluating Initial Validity and Reliability

The preliminary step of data collecting included a pretest administered to 30 respondents. The objective was to determine the clarity and dependability of the questionnaire items. A Cronbach's Alpha value of 0.75 was achieved, which is consistent with earlier research suggesting that an internal consistency score over 0.7 is acceptable. The mean score and range of factor loadings validate the questionnaire's capacity to measure the targeted dimensions (see Table 4).

Table 4
Pretest Results

Metrics	Value
Number of Respondents	30
Cronbach's Alpha (α)	0.75
Mean Score	4.2 (± 0.8)
Factor Loading Range	0.65 - 0.80

Table 5
Pilot Testing Results

Constructs	Cronbach's Alpha (α)	Mean (SD)	Factor Loading Range
AI-Induced Anxiety	0.80	3.9 (± 0.7)	0.68 - 0.81
Perceived Usefulness	0.82	4.3 (± 0.6)	0.72 - 0.85
Perceived Ease of Use	0.78	4.0 (± 0.7)	0.66 - 0.80
Trust in Security	0.84	4.2 (± 0.5)	0.74 - 0.87
Costs of Integration	0.79	3.8 (± 0.6)	0.70 - 0.82
Top Management Support	0.81	4.1 (± 0.6)	0.69 - 0.83

4.2 Pilot Testing: Confirming Scale Integrity

After the preliminary testing, a more rigorous pilot test was undertaken to further confirm the questionnaire questions' dependability and internal consistency. All Cronbach's Alpha values were above the 0.7 level, indicating the internal consistency and conforming to the norms established by prior studies (Coetzee, 2014) .The averages and standard deviations demonstrate that the constructs are unique, and the high factor loadings indicate that they are internally consistent, thereby justifying their inclusion in the research (see Table 5)**.**

4.3 Reliability and Convergent Validity

In terms of scale reliability and convergent validity, each concept exhibited strong Cronbach's Alpha values and appropriate factor loading ranges, validating the internal consistency and construct validity of the measures (Coetzee, 2014)

4.4 Discriminant Validity

Using the criterion established by Fornell and Larcker discriminant validity was determined by ensuring that the Average Variance Extracted (AVE) for each construct exceeded its Maximum Shared Variance (MSV). The results satisfied these requirements, demonstrating the discriminant validity of the constructs**.**

Table 6
Discriminant Validity

Constructs	Max Shared Variance	Average Variance Extracted (AVE)
AI-Induced Anxiety	0.4	0.56
Perceived Usefulness	0.45	0.58
Perceived Ease of Use	0.42	0.57
Trust in Security	0.39	0.54

4.5 Measurement and Structural Model Assessment

Strong reliability, convergent validity, and discriminant validity have been demonstrated by the measurement model, paving the way for a solid structural model. The hypotheses were evaluated using the structural equation model, and the findings are presented in the section under "Results." The goodness-of-fit indices of the model fell within acceptable limits, supporting the theoretical framework.

5. Results

5.1 Hypotheses Testing

The first hypothesis: The relationship between AI-Induced Anxiety and Adoption Rate

With a path coefficient of -0.53 (t = 6.27, p 0.001), the results imply that AI-induced anxiety is strongly adversely linked with the adoption rate of mobile payment services. This study reflects past research demonstrating a negative correlation between technology adoption anxiety and adoption rate (Chen, 2022; Cheng et al., 2021).This supports the theory that AI-induced worry operates as a psychological cost within the context of mental accounting, hence influencing the adoption decision-making process. To increase mobile payment acceptance, businesses must reduce AI-induced fear, potentially by establishing training programs or building more user-friendly interfaces.

The second hypothesis: The relationship between perceived usefulness and adoption rate

With a path coefficient of 0.68 (t = 7.43, p 0.001), a significant positive correlation was found between perceived usefulness and adoption rate. This is consistent with previous research on Technology Acceptance Models (TAM) that identified perceived usefulness as a strong predictor of technology adoption (Biryukov & Tikhomirov, 2019) .Ensuring that mobile payment solutions are helpful for businesses can promote a greater adoption rate, hence enhancing the competitive advantage of the business.

The third hypothesis: The relationship between perceived ease of use and adoption rate

The link between perceived ease of use and adoption rate was somewhat favorable, with a path coefficient of 0.45 (t = 4.52, p 0.001). This is consistent with the TAM, in which perceived ease of use was positively associated with behavioral intent to use (Biryukov & Tikhomirov, 2019; Cheng et al., 2021). Simple and straightforward methods are more likely to be adopted, indicating the significance of user-friendly design.

The fourth hypothesis: The relationship between trust in security and adoption rate

With a path coefficient of 0.70 (t = 7.90, p 0.001), there was a substantial positive correlation between security trust and adoption rate. This is consistent with prior research highlighting the importance of trust in technology adoption (Biryukov & Tikhomirov, 2019; Cheng et al., 2021). Companies must invest in effective security measures in order to develop user confidence and increase adoption.

The fifth hypothesis: The relationship between costs of integration and adoption rate

The path coefficient for the relationship between integration costs and adoption rate was -0.40 (t = 5.13, p 0.001). This conclusion is consistent with the Mental Accounting Theory, implying that increased expenses (financial and non-financial) may inhibit adoption (Cheng et al., 2021; Yaiprasert & Hidayanto, 2023) To reduce the expenses associated with adopting new technology, businesses should consider giving incentives or financial solutions.

The sixth hypothesis: The relationship between top management support and adoption rate

With a path coefficient of 0.60 (t = 6.60, p 0.001), top-level management support influenced the adoption rate positively. This is consistent with findings from previous organizational research indicating that managerial support may be a crucial facilitator for technology adoption (Bhaduri, 2019; Cheng et al., 2021). The senior management of a business plays a significant role in promoting the adoption and effective deployment of new technology.

Table 6
Hypothesis testing

Hypothesis	Path	Path Coefficient	t-Value	Standard Error	Result
H1: AI-Induced Anxiety	Negative	-0.53	6.27	0.084	Significant
H2: Perceived Usefulness	Positive	0.68	7.43	0.091	Significant
H3: Perceived Ease of Use	Positive	0.45	4.52	0.099	Significant
H4: Trust in Security	Positive	0.70	7.90	0.089	Significant
H5: Costs of Integration	Negative	-0.40	5.13	0.078	Significant
H6: Top Management Support	Positive	0.60	6.60	0.091	Significant

This exhaustive set of findings illustrates the complicated interaction between operational and psychological elements that influences supply chain enterprises' use of mobile payment services. In addition, it throws light on the mental accounting processes engaged in these decision-making tasks, offering a comprehensive knowledge that might guide future study and practice.

6. Conclusions

Understanding the many factors that impact the adoption rate of mobile payment services among supply chain enterprises was the primary focus of this study. Given the burgeoning market size for mobile payment services, which is projected to exceed $12 trillion by 2027, as well as the myriad of operational and strategic challenges and opportunities it presents for supply chain firms, the objective of this study was to investigate both the operational and psychological factors influencing this adoption.

The study suggested six hypotheses based on Mental Accounting Theory as its theoretical lens. The purpose of these hypotheses was to study the links between AI-induced anxiety, perceived utility, perceived simplicity of use, trust in security, integration costs, and support from top management and the adoption rate of mobile payment services.

In terms of technique, a survey questionnaire was used to collect data. Most responders were executives and IT experts from supply chain companies. A total of 570 respondents were polled by email, postal mail, Google forms, WhatsApp connections, and in-person visits. In order to properly examine the data, descriptive statistics and sophisticated statistical tests such as Levene's Test were employed.

The study's findings were revealing. All six assumptions were confirmed, demonstrating a complicated web of factors influencing the adoption of mobile payment systems. Adoption was negatively impacted by AI-induced fear and integration costs, whereas it was favorably impacted by perceived utility, perceived simplicity of use, trust in security, and top management support. The study contributes significantly to both theory and practice. Theoretically, it incorporates Mental Accounting Theory into the literature on technology adoption, offering a more comprehensive explanation of decision-making processes. It offers actionable data for both mobile payment service providers and supply chain companies seeking to implement these services.

Multiple ramifications may be drawn from this study. For organizations, the findings show that lowering AI-induced anxiety through user training, enhancing the user interface, and increasing confidence in the system's security are crucial for broader adoption. Companies might also provide financial incentives to lower integration expenses. Strategically, the participation of senior management in this adoption process is vital, as is ensuring that end-users regard the technologies as helpful and easy to use.

Despite its contributions, there are limits to the study. The study was cross-sectional, offering a snapshot of mobile payment use rather than a long-term analysis. Future study might employ a longitudinal approach to examine how views and adoption rates fluctuate over time. In addition, this research was limited to supply chain businesses, which may restrict the applicability of the findings to other industries.

In conclusion, this study represents a foundational effort for understanding the multiple elements that influence supply chain enterprises' use of mobile payment services. In addition to contributing to scholarly research, it provides advice for corporations and governments. Future research should analyze similar dynamics in a variety of organizational situations, as well as other psychological characteristics not included by this study.

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