



# Interdisciplinary Journal of Information, Knowledge, and Management

An Official Publication  
of the Informing Science Institute  
[InformingScience.org](http://InformingScience.org)

[IJIKM.org](http://IJIKM.org)

Volume 20, 2025

## EXAMINING BLOCKCHAIN ADOPTION: INSIGHTS FROM THE PROTECTION MOTIVATION THEORY

Rand Abdel-Wahad	King Talal School of Business Technology, Princess Sumaya University for Technology, Amman, Jordan	<a href="mailto:randhaber@outlook.com">randhaber@outlook.com</a>
Ammar Abdallah *	King Talal School of Business Technology, Princess Sumaya University for Technology, Amman, Jordan	<a href="mailto:a.gasaimh@psut.edu.jo">a.gasaimh@psut.edu.jo</a>
Chahd El-Qutob	King Talal School of Business Technology, Princess Sumaya University for Technology, Amman, Jordan	<a href="mailto:cha20248132@std.psut.edu.jo">cha20248132@std.psut.edu.jo</a>
Fandi Omiesh	King Talal School of Business Technology, Princess Sumaya University for Technology, Amman, Jordan	<a href="mailto:f.omeish@psut.edu.jo">f.omeish@psut.edu.jo</a>
Mohammad Abuhashesh	King Talal School of Business Technology, Princess Sumaya University for Technology, Amman, Jordan	<a href="mailto:m.abuhashesh@psut.edu.jo">m.abuhashesh@psut.edu.jo</a>

\* Corresponding author

### ABSTRACT

Aim / Purpose	This study examines the cognitive factors that shape blockchain adoption among Jordanian consumers. Guided by Protection Motivation Theory (PMT), this study explores threat and coping appraisals. It also explored electronic Word-of-Mouth (e-WOM) as a moderating factor, as it is an understudied variable in blockchain research. Integrating e-WOM as a behavioral driver offers a novel contribution to blockchain literature.
Background	Although blockchain ensures transparency and decentralization, its adoption in the Middle East and North Africa (MENA) regions remains slow due to trust and awareness gaps. Several factors, including psychological and perceptual influences on its adoption, have yet to be examined more specifically within the MENA region. Jordanian consumers are actively utilizing e-commerce; however, they are cautious about new technologies. To encourage the adoption of

Accepting Editor Ahmad Samed Al-Adwan | Received: August 26, 2025 | Revised: October 26,  
November 4, November 18, 2025 | Accepted: November 20, 2025.

Cite as: Abdel-Wahad, R., Abdallah, A., El-Qutob, C., Omiesh, F., & Abuhashesh, M. (2025). Examining blockchain adoption: Insights from the protection motivation theory. *Interdisciplinary Journal of Information, Knowledge, and Management*, 20, Article 36. <https://doi.org/10.28945/5667>

(CC BY-NC 4.0) This article is licensed to you under a [Creative Commons Attribution-NonCommercial 4.0 International License](https://creativecommons.org/licenses/by-nc/4.0/). When you copy and redistribute this paper in full or in part, you need to provide proper attribution to it to ensure that others can later locate this work (and to ensure that others do not accuse you of plagiarism). You may (and we encourage you to) adapt, remix, transform, and build upon the material for any non-commercial purposes. This license does not permit you to use this material for commercial purposes.

	blockchain, there should be a deep understanding of the cognitive influences and impact of e-WOM.
Methodology	A cross-sectional quantitative survey was conducted to collect data from 351 Jordanian individuals aged 18-45 years, all of whom had prior experience with e-commerce and blockchain technology. To conduct a suitable analysis for this research, Statistical Package for Social Sciences (SPSS) (v28) and Analysis of Moment Structures (AMOS) (v26) were utilized while implementing Structural Equation Modeling (SEM).
Contribution	This study extends PMT by integrating e-WOM, offering a novel behavioral dimension within the blockchain adoption literature. It provides regional insights for emerging economies such as Jordan and deepens the understanding of consumer cognitive behavior toward blockchain technology.
Findings	The constructs of PMT explain 51.9% of the variation in adoption behavior. The integration of e-WOM as a moderating factor increased explanatory power to 59.3%. Self-efficacy and response efficacy were the most influential factors, while e-WOM significantly moderated the effects of both threat and coping appraisals on the intention to adopt. These findings can inform policymakers and industry leaders in developing awareness and trust-building strategies.
Recommendations for Practitioners	Emphasize response efficacy in messaging (demonstrable security and transparency gains) and provide user training/onboarding to raise self-efficacy. Systematically leverage positive e-WOM (testimonials, community Q&A, and creator reviews) to reinforce confidence and reduce uncertainty at the evaluation/adoption stages. Align communication with trust-building cues (interoperability, data control, and auditability).
Recommendations for Researchers	Extend PMT and e-WOM models with longitudinal and cross-cultural designs, test additional moderators (such as trust, digital literacy, and perceived value), and examine post-adoption outcomes (use/continuance). Compare coping versus threat pathways across different sectors (finance, healthcare, supply chains) to generalize the findings.
Impact on Society	This study demonstrates the importance of cognitive perception, trust, and e-WOM in technology adoption. These findings inform policymakers and industry leaders to develop awareness and trust-building strategies. This study extends the PMT with e-WOM and provides practical guidelines for trust-driven blockchain adoption in emerging markets.
Keywords	blockchain technology adoption, PMT, e-WOM, e-commerce, Jordanian consumers

## INTRODUCTION

---

Despite blockchain's global potential, its adoption in Jordan and the wider Middle East and North Africa (MENA) region remains limited. With the evolution of digital technology, blockchain technology has become a significant force owing to its potential to transform the digital landscape. Financial services have the potential to leverage blockchain technology to conduct secure, efficient, and authentic transactions, thereby minimizing fraud in various processes, including international transactions (Ali et al., 2020). Authentic transactions ensure that the data collected within the blockchain is precise. The immutability of blockchain and its cryptographic capabilities play a vital role in validating transactions and documentation (Cai et al., 2023), particularly in minimizing counterfeiting (such as the creation of

imitations or deceptive versions of goods or products to deceive others into believing that they are authentic). The transparent and anti-counterfeit characteristics of blockchain technology can significantly diminish counterfeiting by offering a secure and unchangeable record of transactions and product details, which aids in tracing the origin of goods and deterring the circulation of counterfeit products, as outlined by Afrin and Pathak (2023). Blockchain technology has emerged from the evolution of computer networks through three distinct stages: centralized, decentralized, and distributed. These stages indicate a transition from centralized to decentralized and distributed models, highlighting the evolution of more advanced and powerful network architectures. Blockchain is a decentralized and distributed ledger technology, characterized by a collection of transactions recorded in multiple locations at the same time. This innovation offers enhanced security, transparency, and reliability compared with conventional centralized systems (Esmailian et al., 2020). However, this technological evolution does not guarantee adoption, especially in developing economies such as Jordan, where infrastructure and trust remain critical challenges.

Blockchain technology finds practicality across a multitude of sectors, such as healthcare, finance, and e-commerce, and promises improved transparency and efficiency, yet its adoption remains inconsistent (Dutta et al., 2020; Nuseir et al., 2023). In this context, the key benefits of employing blockchain technology in online shopping can be outlined as follows (Kharche et al., 2024):

- *Advancement of enhanced security measures:* The application of blockchain technology employs encryption to protect data and transactions, thereby improving e-commerce security. The decentralized design of blockchain networks enhances their resistance to fraud and hacking, thereby maintaining the confidentiality and integrity of sensitive data. Employing blockchain cryptographic technologies and decentralization enhances security by safeguarding transactions and data, thereby reducing vulnerability to hacking and fraud.
- *Information security:* Strategies and protocols established with a focus on confidentiality, integrity, and availability of sensitive information against unauthorized access, exposure, modification, or loss. Blockchain technology improves data protection by utilizing encryption techniques, decentralization, and immutability (Esmailian et al., 2020). Cryptographic techniques ensure data encryption and security, whereas the decentralized architecture of blockchain networks reduces the likelihood of a single point of failure (Afrin & Pathak, 2023). Moreover, the blockchain ledger guarantees a significant level of data integrity and security because of its immutability, indicating that once information is documented, it cannot be modified or deleted without the consent of the network participants (Kharche et al., 2024).
- *Trust:* Within the world of data protection and blockchain technology, trust signifies the assurance that users have regarding the confidentiality and security of their personal information. Blockchain technology enhances trust through a transparent and verifiable ledger that records data transactions in a decentralized manner (Kharche et al., 2024). Consensus mechanisms play a crucial role in establishing trust by guaranteeing the accuracy of transactions and authenticity of information (Afrin & Pathak, 2023).
- *Cost efficiency:* Enhancing resource utilization and minimizing expenses associated with data security and management (Arunmozhi et al., 2022). Blockchain technology enhances cost efficiency by removing intermediaries in data exchanges, streamlining processes, and reducing operational costs (J. Li & Kassem, 2021). The implementation of trust mechanisms through smart contracts streamlines data processing and guarantees secure and efficient data exchanges (Arunmozhi et al., 2022). Reducing reliance on manual processes and intermediaries allows blockchain technology to deliver substantial savings for organizations while enhancing data protection measures (J. Li & Kassem, 2021).

Smart contracts have the potential to automate operations, thereby reducing the need for human labor and associated costs (Arunmozhi et al., 2022). Smart contracts built on blockchain technology enable secure and reliable automation of processes without intermediaries. Their capacity to facilitate a range

of transactions and agreements, such as payments, money transfers, and communication within supply chains, is noteworthy. Smart contracts enable organizations to enhance efficiency, minimize manual operations, and streamline business processes (J. Li & Kassem, 2021).

Furthermore, consumers' perceived self-efficacy refers to their belief in their ability to perform the behaviors required to use blockchain effectively, while response efficacy reflects the belief that using blockchain will achieve the desired outcomes. User confidence in the effective application of blockchain technology and the expectation of achieving desired outcomes significantly enhance their intention to utilize the technology (Miraz et al., 2022). There is a high likelihood that users will utilize blockchain technology frequently when they acknowledge their ability to use it effectively (perceived self-efficacy) and believe it will yield the desired outcomes (response efficacy) (Mweetwa & Mwangi, 2023). Y. Li et al. (2023) asserted that risk and survivability assessments affect users' willingness to adopt blockchain technology.

Blockchain provides a decentralized infrastructure that enhances data integrity and reduces counterfeiting; therefore, limited awareness and trust continue to hinder adoption. This study addresses the gap in the adoption of blockchain technology by examining cognitive components, including threat appraisal and coping appraisal, and the influence of electronic Word-of-Mouth (e-WOM) on this adoption process. The current research utilizes Protective Motivation Theory (PMT) to understand better the behavioral changes associated with perceived vulnerability, perceived threat severity, response efficacy, and self-efficacy as defense and protection mechanisms in online and technologically mediated environments.

The research objectives are articulated as follows:

1. To analyze the influence of perceived vulnerability on the adoption of blockchain technology through a PMT lens.
2. To analyze the influence of perceived severity on the adoption of blockchain technology through a PMT lens.
3. To analyze the influence of response efficacy on the adoption of blockchain technology through a PMT lens.
4. To analyze the influence of self-efficacy on the adoption of blockchain technology through the lens of the PMT.
5. To analyze the moderating effect of e-WOM on the relationships between threat appraisal, coping appraisal, and blockchain adoption.

To attain the objectives, the researchers propose the following research questions:

1. To what extent does perceived vulnerability impact the adoption of blockchain technology?
2. To what extent does the perceived severity of threats affect the adoption of blockchain technology?
3. To what extent does response efficacy impact the adoption of blockchain technology?
4. To what extent does self-efficacy impact the adoption of blockchain technology?
5. To what extent does e-WOM moderate the relationship between threat appraisal, coping appraisal, and adoption of blockchain technology?

This study aims to explore the psychological and cognitive factors that influence decisions related to the adoption of advanced technologies, specifically blockchain. It seeks to educate industry practitioners on the determinants of blockchain technology adoption, refine strategies by understanding these psychological elements, enhance trust, and inform regulatory frameworks, as blockchain technology gains traction in e-commerce. The insights from this research will be valuable to policymakers and regulatory authorities. Analyzing the factors influencing adoption can aid in developing informed policies that promote innovation and address security and privacy issues.

The remainder of this paper is structured as follows. The next sections present the literature review and the research methodology. The data analysis and results are then presented, followed by a discussion of

the research findings. Finally, the conclusion, implications for practitioners and researchers, and future work are presented.

## LITERATURE REVIEW

---

### *RELATED WORK*

Most previous research has described blockchain applications without explicitly linking them to the behavioral theories of technology adoption. Most recent studies track blockchain's cross-sector impact but remain descriptive rather than theoretically driven. Within the finance and e-commerce industries, previous research has highlighted security, privacy, and trust as central adoption drivers (Albshaier et al., 2024; Chowdhury et al., 2021; D. J. Kim et al., 2008). Collectively, these studies demonstrate how trust and security measures influence online customer engagement and decision-making. Conceptually, decentralization and immutability underpin these trust effects by reducing the single points of failure and improving verifiability. Blockchain's traceability and integrity benefits recur across supply chains, Industry 4.0, and healthcare (Bodkhe et al., 2020; Katsikouli et al., 2021; Musamih et al., 2021). Norisnita and Indriati (2022) examined theoretical models using the Theory of Planned Behavior (TPB) within the context of cryptocurrency investments, providing insights into the behavioral determinants of novel financial practices.

Within the region, MENA studies have shown growing practical interest but limited integration of behavioral theory. In Jordanian banking, the quality of the Accounting Information System (AIS) mediates blockchain performance links (Al-Dmour et al., 2024). Project management work highlights blockchain process advancement (Sharari et al., 2025), and start-up supply chain research integrates blockchain with trust (Trawnih et al., 2025). Reviews have noted a shortfall of nontechnical, behavior-focused evidence and called for interdisciplinary designs (cases, surveys) that align with real contexts (Happy et al., 2023). Technical barriers, privacy, ransomware, and fraud will persist (Nelufule et al., 2024).

Despite its considerable promise, the broad implementation of blockchain faces several obstacles (Al-Mekhlafi & Al-Shaibany, 2021). Researchers and practitioners are increasingly exploring and using blockchain solutions to harness its revolutionary capabilities (Arunmozhi et al., 2022), while also analyzing the challenges that hinder the extensive implementation of blockchain technology (Yadlapalli et al., 2022). The adoption of blockchain technology is significantly affected by perceived confidence, trust, and utility (Alfandi et al., 2021; Patrício & Ferreira, 2021). Perceived trust correlates with the strong security protocols necessary for protecting personal information and maintaining user privacy, particularly in industries subject to rigorous data protection laws. Perceived usefulness denotes the conclusion that blockchain technology may enhance efficacy, productivity, and overall experience by offering advantages, such as heightened transparency, record immutability, diminished transaction costs, and more efficient procedures. These impressions affect users' attitudes and intentions towards adopting blockchain technology, thereby enhancing the probability of its integration into corporate and individual practices.

Recent research by Marikyan et al. (2022) established a research foundation and model based on the PMT to examine the cognitive aspects influencing blockchain adoption. PMT explains how perceived threats and coping abilities shape behavior, while e-WOM adds a complementary social influence mechanism to adoption decisions. This study examined consumers' views on perceived threat vulnerability, reaction cost, response efficacy, and self-efficacy to influence their attitudes towards blockchain adoption. The results showed that reaction efficacy and self-efficacy considerably promoted adoption, but response costs impeded it. The perceived severity of the threats exhibited no significant impact, indicating that people can underestimate the security capabilities of blockchain technology. Moderating factors, including knowledge and innovativeness, were identified as influencing the function of self-efficacy in adoption; however, they demonstrated minimal influence on the other variables.

Despite extensive applied work, relatively few studies have integrated behavioral theory with social influencers to explain blockchain adoption in developing economies. Table 1 presents a comparative summary of related studies on blockchain adoption.

**Table 1. Comparative summary of related studies on blockchain adoption**

Study	Title	Methodology	Theoretical background	Contribution
(Akram et al., 2020)	Adoption of blockchain technology in various realms: Opportunities and challenges.	Comprehensive analysis of blockchain adoption methodologies, emphasizing advantages and disadvantages.	Examines the decentralization and transparency of blockchain, addressing its generations and architecture.	Discusses blockchain use across industries, emphasizing interoperability and governance.
(Ben Youssef & Dahmani, 2023)	Examining the drivers of e-commerce adoption by Moroccan firms: A multi-model analysis.	Multiple model analysis investigates the factors affecting Moroccan corporations' adoption of e-commerce using several statistical models.	Utilizing the Technology Acceptance Model (TAM) Theory of Planned Behavior (TPB), and Unified Theory of Acceptance and Use of Technology (UTAUT) frameworks to comprehend the determinants of technology adoption.	Emphasizes the significance of elements such as company age and digital competencies in the adoption of e-commerce and proposes enhancements in digital training.
(Voskobojnikov et al., 2021)	Non-adoption of crypto assets: Exploring the role of trust, self-efficacy, and risk.	Utilization of structural equation modeling to examine adoption intentions among those who do not already utilize crypto assets.	Analyzes trust, self-efficacy, and risk as critical determinants in technological uptake.	Analyzes the factors affecting non-users' intentions to use cryptocurrency assets and proposes strategies to mitigate entry hurdles.
(Grover et al., 2019)	Perceived usefulness, ease of use, and user acceptance of blockchain technology for digital transactions – insights from user-generated content on Twitter.	Collecting tweets relevant to blockchain and examining the factors influencing user acceptability based on structures such as security, privacy, transparency, trust, and traceability.	The study examined the advantages and disadvantages of blockchain, including a comprehensive analysis of its utility for Twitter.	This study improves users' comprehension of blockchain and its adoption by offering comprehensive information for scholars and users.
(Devčić & Vrček, 2021)	Organizational challenges of blockchain adoption: an exploratory literature review.	Comprehensive literature research to ascertain organizational obstacles in blockchain implementation.	Utilizes current studies on the adoption of blockchain technology.	Examines and encapsulates organizational obstacles in blockchain implementation, directing further study and policy development.

Study	Title	Methodology	Theoretical background	Contribution
(Zerbini et al., 2022)	Drivers of consumer adoption of e-commerce: A meta-analysis	Meta-analysis to examine the determinants of customer acceptance in e-commerce.	Examine theories related to consumer behavior and technological adoption.	Conducting a comprehensive analysis of factors impacting consumer behavior and the acceptance of novel technology in e-commerce.
(Bokolo, 2022)	Exploring interoperability of distributed ledger and decentralized technology adoption in virtual enterprises.	Examine the interoperability of decentralized and distributed ledger technologies with virtual enterprises.	Emphasizes previous research about interoperability, virtual enterprises, and blockchain technology.	Emphasizes the significance of compatibility for the usage of blockchain technology in virtual enterprises.

To the best of the authors' knowledge, PMT has not been empirically integrated with e-WOM to explain blockchain adoption within the MENA context. This study addresses this gap by positioning e-WOM as a moderator of both threat and coping appraisals, extending the PMT's explanatory power to include social influencer dynamics. The conceptual model in Figure 1 illustrates these proposed relationships and guides the development of subsequent hypotheses.

## ***HYPOTHESIS DEVELOPMENT***

### **Blockchain technology adoption**

Significant academic studies on blockchain adoption have been conducted (Dutta et al., 2020), and in recent years, blockchain technology has attracted significant interest owing to its capability to transform several sectors. Consequently, businesses and governments must recognize the determinants of consumer adoption of blockchain technology (Elliot et al., 2024). Several factors affect the use of blockchain technology in enterprises, including several aspects (Akram et al., 2020). These factors are categorized into three types: organizational, environmental, and technological (Al-Mekhlafi & Al-Shaibany, 2021). Organizational factors include perceived benefits, resource availability, and readiness, whereas technological factors include performance, scalability, security, and interoperability (Al-Mekhlafi & Al-Shaibany, 2021). Market conditions, industry standards, and legal and regulatory frameworks exemplify environmental effects. Key barriers include scalability, energy costs, regulatory uncertainty, interoperability, limited user education, and resistance to change (Al-Ashmori et al., 2022).

The research conducted by AlShamsi et al. (2022) emphasized PMT as a foundation for elucidating the decision-making process and as a significant model for the cognitive mechanisms that facilitate blockchain adoption, aiding stakeholders in formulating strategies to improve perceived efficacy, augment self-efficacy, and diminish perceived costs, thus promoting wider acceptance and utilization of blockchain technologies. This study suggests that threat appraisal, which involves assessing the severity and susceptibility to risks associated with blockchain, along with coping appraisal, which evaluates the effectiveness, self-efficacy, and costs related to blockchain adoption, significantly impacts the motivations of individuals and organizations to adopt this technology. Fear, as an element of PMT, also affects the urge to use blockchain as a preventive strategy.

The research conducted by Hussain et al. (2022) identified blockchain technology as a distributed database characterized by transparency, accountability, public accessibility, immutability, and traceability, and examined the many consequences of its implementation in Bangladesh. This study examines how the intrinsic features of blockchain, transparency, immutability, and traceability can enhance numerous sectors, with special emphasis on a nation's progress in sustainable development and poverty reduction.

Through a thorough assessment conducted from 2016 to 2020, the authors identified several areas in Bangladesh in which blockchain technology holds substantial promise, including healthcare, agriculture, financial services, and land management. This research underscores the crucial function of blockchain in improving data integrity, efficiency, and transparency in public and private sector endeavors while also recognizing the technological and infrastructural challenges that must be addressed for its adoption.

A comprehensive literature review by Al-Sakhnini and Al-Moaiad (2024) investigated the uses and prospects of blockchain technology within the Middle Eastern setting, including Jordan, Saudi Arabia, Bahrain, Yemen, Qatar, Lebanon, Palestine, Iraq, Egypt, Morocco, Tunisia, Libya, Algeria, and the UAE. Investigating several industries for blockchain use, these industries include, but are not limited to, banking, supply chain management, and public service delivery, while highlighting their capacity to develop and improve transparency, security, and efficiency. It also examines the difficulties and potential associated with blockchain adoption, emphasizing the necessity for a conducive regulatory environment. This paper continues by underscoring the significance of utilizing blockchain technology for economic modernization and resilience, urging collaboration among policymakers, industry professionals, and researchers to fully exploit its potential in the Middle East.

The authors in Al-Ashmori et al. (2022) investigated the adoption of blockchain technology from the perspective of sustainability. This study encompasses literature evaluation and bibliometric analysis to ascertain the trends, deficiencies, and motivations for implementing blockchain technology. This study elucidates the progress of research on blockchain adoption as well as the key nations, organizations, and thematic publications involved. A sustainable adoption framework is examined in relation to blockchain adoption, grounded in the principal identified factors and various adoption theories, including the Technology Acceptance Model (TAM), the Task Technology Fit Model, the Unified Theory of Acceptance and Use of Technology, and the Theory of Planned Behavior. The primary finding of this research is the heightened volume of articles on blockchain adoption from 2015 to 2020, signifying a growing interest in the subject. This study offers significant insights and establishes a basis for future research in the software development sector by identifying five clusters pertinent to blockchain adoption: user acceptability, blockchain technology, distributed ledgers, innovations, and logistics and supply chain management.

### **Theoretical background**

The PMT discusses the psychological mechanisms that drive the adoption of technologies and can be utilized to comprehend and forecast the motivations of individuals and organizations in adopting blockchain as a safeguard against threats or vulnerabilities (Joshi et al., 2022). The PMT identifies three essential components: threat appraisal, coping evaluation, and motivation (Degirmenci & Barros, 2021). Threat evaluation assesses the probability and severity of prospective threats, such as data breaches or fraud, and the effectiveness of a response in alleviating these concerns. In the context of blockchain technology, assessment may involve evaluating the gravity of challenges, including insufficient transparency and an organization's susceptibility to such risks. The perceived elevated risk of encountering such issues in the absence of blockchain protection may impact the choice to implement technology (Etemadi et al., 2021).

The evaluation of coping strategies involves assessing the perceived costs and challenges linked to adopting the suggested protective behavior in concurrence with self-efficacy. In the realm of blockchain, this pertains to confidence in the efficacy of blockchain technology in addressing perceived risks and an evaluation of one's ability to implement and utilize the technology effectively. When individuals or organizations perceive that blockchain has the potential to significantly mitigate or eradicate risks and possess assurance in their capacity to implement it, their likelihood of adoption increases (Al-Mansoori et al., 2023). Motivation reflects the interaction between threat and coping evaluations, suggesting that the probability of embracing the suggested response is shaped by the perceived seriousness of the threat and the feasibility of executing coping strategies. The notion that diminishing levels of danger perception, alongside elevated coping capabilities, may lead to a reduction in the motivation to engage

in the recommended behavior (Demirtaş-Madran, 2021). In technology adoption, PMT typically operationalizes threat appraisal as perceived severity and vulnerability and coping appraisal as response efficacy, self-efficacy, and response cost.

### **Threat appraisal**

In the realm of digital transformation, the research conducted by Sit et al. (2023) presented an analysis of threat appraisal using the concept of PMT within the e-commerce sector. Evaluating the risks and vulnerabilities associated with online transactions is crucial in e-commerce threat appraisal. This investigation highlights the importance of comprehensively evaluating potential harm or risk, considering the fluid and dynamic characteristics of retail environments and the interrelation between physical and digital domains. This is essential for a thorough understanding of threat appraisal in e-commerce, particularly through the lens of PMT. Threat appraisal in PMT refers to an individual's evaluation of the likelihood and severity of potential threats. In technology adoption, this captures users' perceptions of how risky or harmful not using a given technology might be (Abu Bakar & Rahmatullah, 2022).

### **Perceived threat vulnerability**

While blockchain technology has been recognized for its security and decentralization, it has recently garnered significant attention, particularly regarding perceived threat vulnerabilities. This ongoing concern contributes to the relatively low consumer adoption of blockchain technology (El-Mamy et al., 2020). The vulnerability to perceived threats is used to describe how likely someone is to suffer unfavorable outcomes or injuries as a result of a certain threat. Understanding the function of perceived threat vulnerability and its influence on PMT is essential for the adoption of blockchain technology. According to Y. Li et al. (2023), the examination of perceived threat vulnerability reveals that individuals who experience a heightened sense of vulnerability demonstrate a greater willingness to adopt precautionary measures in relation to technology. In a blockchain, perceived vulnerability commonly reflects risks related to data privacy, key loss, fraud, and irreversible transactions (Y. Li et al., 2023). This perspective highlights that blockchain technology introduces new threats to economic security, emphasizing the importance of auditing and control as proactive strategies to manage these risks. Analyzing customer adoption behavior necessitates an understanding of how customers view the risks associated with blockchain technology (Patrício & Ferreira, 2021).

The perception of vulnerability to threats linked to blockchain adoption significantly influences both threat and coping assessments (Al-Mansoori et al., 2023). The PMT elucidates the concept of fear appeals, indicating that individuals employ a range of self-defense strategies, such as perceived severity and perceived vulnerability. Increased susceptibility leads individuals to perceive threats as more significant and experience heightened feelings of vulnerability to adverse consequences. Consequently, they tended to implement additional protective measures. Similarly, those who are more susceptible to threat appraisal might believe that coping strategies can mitigate perceived threats (Y. Li et al., 2023). Therefore, in the implementation of blockchain technology, perceived vulnerability to threats is anticipated to influence both threat assessments and evaluations of coping appraisals. Furthermore, customers' perceptions of threat vulnerability greatly shape their adoption of blockchain technology (Ameyaw & De Vries, 2020). Based on previous research, the following hypothesis is developed:

**H1:** Perceived threat vulnerability is associated with blockchain adoption intention.

### **Perceived threat severity**

Perception of threat severity pertains to how an individual assesses the seriousness of a threat and the possible adverse outcomes associated with it. The perceived severity of a threat regarding the adoption of blockchain technology significantly affects consumers' decisions to embrace or dismiss a specific technology (Marikyan & Papagiannidis, 2023). Ameyaw and De Vries (2020) discovered that consumers' perceptions of the severity of risks linked to blockchain technology have a positive effect on their evaluations of risk and coping appraisal, subsequently enhancing their intent to adopt blockchain technology. Some experts argue that the correlation between perceived threat severity and PMT factors may

be influenced by individual differences, such as risk tolerance and technological readiness (Marikyan et al., 2022). Previous studies show inconsistent findings, and the effects may vary with risk tolerance and institutional trust. Based on previous research, the following hypothesis is developed:

**H2:** Perceived threat severity is associated with blockchain adoption intention.

### **Coping appraisal**

Coping appraisal serves as an essential element of PMT, understanding how individuals react to perceived threats by engaging in defensive behaviors. The coping appraisal evaluates response efficacy, self-efficacy, and response costs. A higher coping appraisal predicts stronger adoption intention in blockchain contexts, especially through response efficacy and self-efficacy (Oh et al., 2025; Wang et al., 2019). Numerous studies (Abu Bakar & Rahmatullah, 2022; Al-Mansoori et al., 2023) have examined the influence of coping appraisal on the factors of PMT within the framework of consumer acceptance of blockchain technology. Research has indicated that individual factors, including risk perception and trust, may affect the correlation between the components of the PMT, as discussed by Nguyen et al. (2024).

### **Response efficacy**

Response efficacy pertains to the way an individual views the effectiveness of suggested protective actions in mitigating or eradicating perceived danger. This study emphasizes the perceptions individuals hold regarding the efficacy of specific actions in mitigating the risks linked to hazards (Gaur et al., 2021). The efficiency of responses significantly influences individuals' motivations and intentions regarding defensive behavior, particularly in the context of embracing new technologies, such as blockchain. Perceived response efficacy, the belief that blockchain effectively mitigates targeted risks, is a consistently positive driver of adoption (Oh et al., 2025; Wang et al., 2019). Based on previous research, the following hypothesis is developed:

**H3:** Response efficacy is associated with blockchain adoption intention.

**Self-efficacy.** Self-efficacy is very important in PMT, which is defined as confidence in one's capability to use blockchain and is a robust predictor of adoption across contexts (Pekkala & Van Zoonen, 2022; Rahmawati, 2019; Voskobochnikov et al., 2021). In PMT-based models, self-efficacy systematically shapes adoption intentions and has a significant impact on consumers' decision-making processes, particularly their intention to adopt blockchain technology (AlShamsi et al., 2024). Based on previous research, the following hypothesis is developed:

**H4:** Self-efficacy is associated with blockchain adoption intention.

### **Electronic word-of-mouth (e-WOM)**

The concept of e-WOM refers to the sharing of information or opinions about products, services, or brands through online platforms such as social media, review sites, and online discussion forums. With the rise of e-WOM in the digital era, academics have explored its definitions, viewpoints, and effects in various industries. Irfan (2024) indicated that e-WOM has a positive impact on consumer attitudes and perceptions regarding a product or service. However, some experts have emphasized the negative aspects of e-WOM. According to Irfan (2024), favorable e-WOM regarding blockchain can enhance adoption rates by cultivating positive perceptions and reducing perceived risks. Nonetheless, various experts have expressed concerns about the negative impact of e-WOM on blockchain technology. For example, Santoso et al. (2023) explored how negative e-WOM could hinder acceptance of blockchain technology by spreading misinformation or raising concerns about its reliability and security. They suggest that potential users might view risk and uncertainty due to negative e-WOM.

The influence of e-WOM can moderate the links between PMT appraisals and adoption by amplifying or dampening perceived risks and coping beliefs (Mladenović et al., 2024). Through providing comfort and encouraging interactions, favorable e-WOM is anticipated to diminish customer vulnerability. Negative e-WOM can increase vulnerability to risks and affect user choices regarding the adoption of

blockchain technology. Furthermore, an investigation conducted by Irfan (2024) indicated that e-WOM can exert both positive and negative influences on the acceptance of blockchain technology. Favorable e-WOM can enhance the perceived value and reliability of the blockchain, subsequently fostering its adoption. Conversely, negative e-WOM can generate concerns, anxiety, and skepticism, potentially hindering the widespread adoption of blockchain technology. Therefore, it is essential to examine the moderating role of e-WOM in the adoption of blockchain technology by analyzing the connection between perceived threat vulnerability and the factors outlined in the PMT. Based on previous research, the following hypothesis is developed:

**H5:** e-WOM moderates the relationship between coping appraisal, threat appraisal, and blockchain adoption.

The influence of e-WOM on the connection between perceived threat severity and consumer adoption of blockchain technology has garnered significant interest in academia. The research conducted by Y. Li et al. (2023) examined how e-WOM influences the connection between perceived threat severity and PMT factors in the context of adopting blockchain food tracking systems. The results reveal that favorable e-WOM enhances the connection between perceived threat severity and consumers' threat ratings, survival assessments, and intentions to adopt. The influence of e-WOM enhances the connection between perceived threat severity and the PMT factors. Nonetheless, various perspectives highlight the importance of exploring individual differences and organizational elements in relation to perceived threat severity and factors associated with PMT. Based on previous research, the following hypotheses are developed:

**H5.1:** e-WOM moderates the relationship between perceived threat vulnerability and blockchain adoption.

**H5.2:** e-WOM moderates the relationship between perceived threat severity and blockchain adoption.

The research conducted by Nuseir et al. (2023) explored the moderating role of e-WOM in the relationship between consumers' intentions to adopt blockchain-based healthcare systems and their coping self-efficacy levels. Positive online recommendations can enhance the influence of self-efficacy on consumer adoption decisions. These findings indicate that positive e-WOM significantly strengthens the relationship between self-efficacy and adoption intention. For example, Santoso et al. (2023) examine the moderating influence of e-WOM on the connection between response efficacy and consumers' intention to embrace blockchain-based financial services. The findings indicate that favorable e-WOM considerably enhances the connection between response efficacy and intention to adopt, suggesting that positive online endorsements can intensify the impact of response efficacy on consumers' decisions to adopt. A significant factor affecting the speed at which consumers embrace blockchain technology is their perception of its effectiveness. The examination of consumer adoption of blockchain technology has rigorously explored the impact of response efficacy on factors within PMT, particularly regarding customer intention to adopt. The link between response efficacy and PMT is further enhanced by the moderating effect of e-WOM (Al-Mansoori et al., 2023). Based on previous research, the following hypothesis is developed:

**H5.3:** e-WOM moderates the relationship between response efficacy and blockchain adoption.

Mladenović et al. (2024) investigated the influence of e-WOM on users' expectations and behavioral intentions toward the adoption of emerging technologies. The findings show that the link between self-efficacy and adoption intention was notably enhanced by favorable e-WOM, implying that positive online endorsements can amplify the influence of self-efficacy on consumers' adoption choices.

**H5.4:** e-WOM moderates the relationship between self-efficacy and blockchain adoption.

Drawing on the PMT and e-WOM literature, Figure 1 presents the proposed model with e-WOM as a moderator for both threat and coping appraisals.

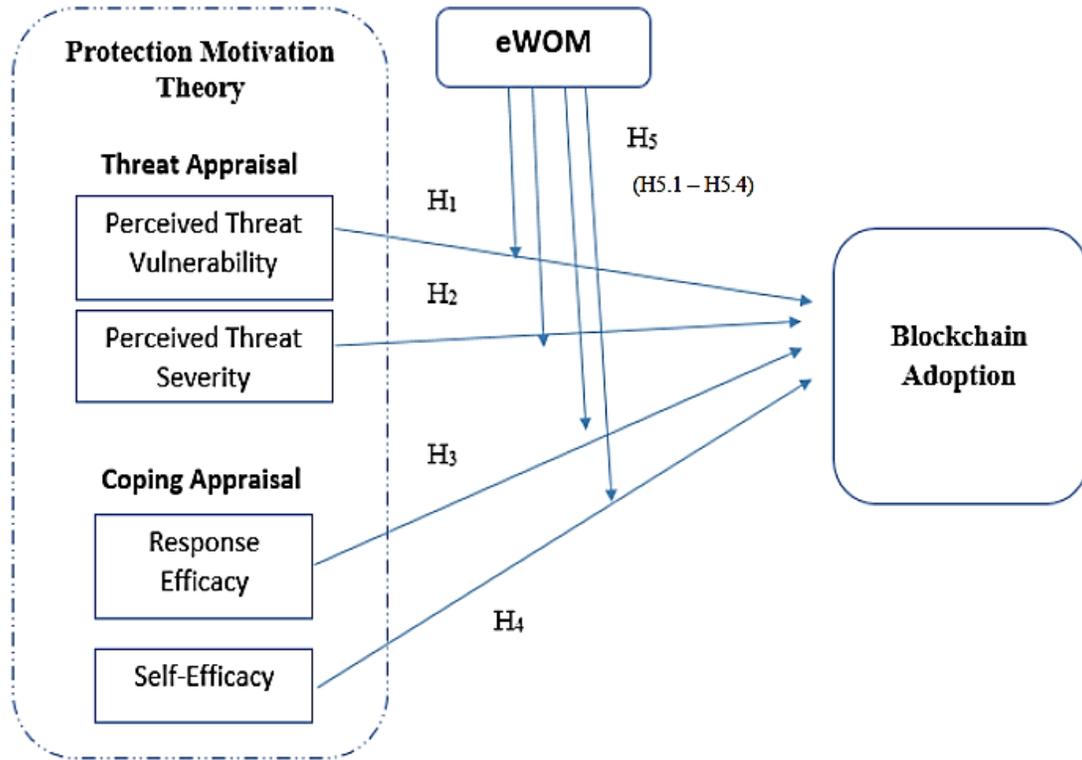


Figure 1. Proposed conceptual model

## RESEARCH METHODOLOGY

### *RESEARCH DESIGN AND DATA COLLECTION*

This study adopted a cross-sectional quantitative survey design to test theory-driven hypotheses derived from PMT and e-WOM. The online survey was developed using Google Forms, available in both Arabic and English. Two bilingual individuals back-translated the Arabic text into English to ensure linguistic consistency, accuracy, and the use of appropriate vocabulary following Brislin's (1986) procedure. A non-probability purposive sampling technique, commonly known as judgmental sampling, was employed to gather the data (Makwana et al., 2023). Participation was voluntary, and the survey took approximately 10–15 minutes to complete. Responses were kept anonymous to ensure the privacy of the participants. All participants provided informed consent prior to participation. A sample size of 384 participants was determined using the Raosoft sample size calculator, adhering to a 95% confidence level and 5% margin of error. This calculation was consistent with the sampling guidelines set forth by Krejcie and Morgan (1970).

In this sampling method, participants were chosen based on their relevance to the research objectives. Consequently, individuals with specific traits were included in the sample because of their value (Zickar & Keith, 2023). Therefore, the most appropriate participants for the study were individuals who possessed an understanding of blockchain technology and online purchasing. This prior knowledge regarding the adoption of blockchain technology in relation to the growth of the internet is crucial (Albshaier et al., 2024; Mattos et al., 2024). Non-probability purposive sampling was utilized to ensure the inclusion of participants with experience relevant to blockchain and e-commerce technologies. The initial reach-out targeted approximately 400 individuals who were initially selected based on their digital engagement with blockchain-related content and their participation in related digital communities. The

distribution of this selection focused on Jordanian nationals aged 18 to 45 who had previously engaged in online digital purchasing and had prior exposure to blockchain concepts. Sampling was conducted across various digital outlets, including Facebook, LinkedIn, and WhatsApp, with a focus on fintech, e-commerce, and university mailing lists of IT and business faculties. The inclusion criteria required participants to have experience with both digital shopping and being familiar with or using blockchain-enabled tools, such as digital wallets and crypto payments. The exclusion criteria eliminated individuals with no previous exposure to blockchain, incomplete responses, or individuals outside the targeted age group were excluded.

Upon distribution of the survey, the total estimated reach was approximately 3,550 individuals. This included members from various digital fintech and blockchain communities on Facebook (approximately 1,200 individuals), direct and group posts (approximately 700 individuals), WhatsApp groups (approximately 750 individuals), and university mailing lists (approximately 900 individuals). To enhance trust and authenticity throughout the research, a brief description of the research purpose and a disclaimer that ensured anonymity and the voluntary nature of participation accompanied the survey link. The survey was distributed and remained open for 24 days, which allowed sufficient time for responses across various waves of outreach.

To properly follow up with outreach, a reminder message was sent five days after the initial launch of the survey, utilizing the same channels and another 10 days after the first reminder to encourage participation among those who did not respond initially. The follow-up highlighted the short time commitment of the survey (10 to 15 minutes) and the relevance of their input to improving blockchain adoption in Jordan. No incentives were offered, whether monetary or otherwise, which maintained the voluntary and academic nature of participation.

A total of 400 responses were received. After excluding incomplete or ineligible entries, 351 responses were received. A total of 49 incomplete responses were excluded because recruitment occurred through digital channels, and responses may reflect a digital literacy bias. The survey was distributed to an estimated 3,550 individuals, resulting in a response rate of approximately 11.4%. Construct reliability, assessed using Cronbach's alpha ( $\alpha > 0.7$ ) and Composite Reliability (CR  $> 0.7$ ), was also established. Convergent validity was confirmed through the Average Variance Extracted (AVE  $> 0.5$ ). Model fit indices, including the Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA), indicate adequate measurement model fit (Hu & Bentler, 1999). Purposive sampling and cross-sectional design limit generalizability to broader populations.

### **Questionnaire design, measures, and scale development**

The survey used closed-ended items measured on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree). The constructs were adapted from the validated prior studies, as summarized below. Table 2 presents the survey questions designed to assess the participants' perceptions of *Threat Appraisal*. Threat appraisal is measured using two constructs: perceived threat vulnerability and severity. The present study employed measurement items adapted from Bosamia and Patel (2020) and Singh and Kalra (2021). Participants indicated their level of agreement with each statement using a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

The items for perceived threat vulnerability and severity demonstrated internal reliability ( $\alpha = 0.84$ ). Table 3 presents the survey questions designed to assess the participants' perceptions regarding *Coping Appraisal*. Coping appraisal was measured using two constructs: response efficacy and self-efficacy. The current study employed measurement items adapted from Marikyan et al. (2022). Participants were asked to express their level of agreement with subsequent statements; all items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

**Table 2. Survey questions on threat appraisal**

Variables	Measurement items	Sources
Perceived threat vulnerability	<ul style="list-style-type: none"> <li>• I know my data could be vulnerable to security breaches if I do not use a digital wallet.</li> <li>• I could fall victim to a malicious attack if I do not use a digital wallet.</li> <li>• I believe that trying to protect my data using a digital wallet would reduce illegal access to it.</li> <li>• My personal data and resources may be compromised if I do not use a digital wallet.</li> </ul>	(Bosamia & Patel, 2020)
Perceived threat severity	<ul style="list-style-type: none"> <li>• Having someone hacking my digital wallet is harmful.</li> <li>• Threats to the security of my personal data when using a digital wallet are harmful.</li> <li>• I view data security attacks on my digital wallet as harmful security attacks on my digital wallet are harmful.</li> </ul>	(Singh & Kalra, 2021)

**Table 3. Survey questions on coping appraisal**

Variables	Measurement items	Sources
Response efficacy	<ul style="list-style-type: none"> <li>• Using a blockchain-enabled digital wallet to protect my personal data would enable me to reduce the likelihood of security breaches.</li> <li>• If I use a blockchain-enabled digital wallet, the instances of security breaches will be fewer.</li> <li>• The regular usage of a blockchain-enabled digital wallet would help avoid security problems.</li> </ul>	(Marikyan et al., 2022)
Self-efficacy	<ul style="list-style-type: none"> <li>• It would be easy for me to switch to the usage of a blockchain-enabled digital wallet.</li> <li>• I could protect my data by using a blockchain-enabled digital wallet if there were no one around to tell me what to do.</li> <li>• I could comply with information security policies by myself when using a blockchain-enabled digital wallet.</li> </ul>	

Table 4 presents the survey questions designed to assess the participants' perceptions of the moderating role of e-WOM between PMT appraisal and blockchain adoption. The present study utilized inquiries and measurements sourced from Goldsmith et al. (2022) and Liu et al. (2022). Participants were asked to express their level of agreement with subsequent statements, and all items were measured on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 5 presents the survey questions designed to assess the participants' perceptions of the moderating role of e-WOM between PMT appraisal and blockchain adoption. The present study employed measurement items adapted from Bhaiswar et al. (2021) and Rabby et al. (2022). Participants were asked to indicate their level of agreement with the statements, and all items were measured on a 5-point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

Table 6 presents the survey questions designed to assess the participants' perceptions regarding the adoption of Blockchain. This study utilized inquiries and measurements from Albshaier et al. (2024). Participants were asked to express their level of agreement with subsequent statements. All items were measured on a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). All constructs were pretested with ten participants for clarity and face validity before full distribution.

**Table 4. Survey questions on the moderating role of e-WOM on threat appraisal**

Variables	Measurement items	Sources
e-WOM – perceived threat vulnerability	<ul style="list-style-type: none"> <li>Electronic word-of-mouth makes me feel more vulnerable to the risks associated with blockchain technology.</li> <li>The information I read online significantly influences my perception of vulnerability to blockchain’s potential risks.</li> <li>Electronic word-of-mouth about blockchain technology’s success stories increases my trust in its efficacy.</li> </ul>	(Goldsmith et al., 2022)
e-WOM – perceived threat severity	<ul style="list-style-type: none"> <li>Electronic word-of-mouth significantly influences my perception of the severity of risks associated with blockchain technology.</li> <li>Electronic word-of-mouth affects my assessment of the severity of potential threats in blockchain technology.</li> <li>My view of the seriousness of blockchain technology risks is shaped by the electronic word-of-mouth I encounter</li> </ul>	

**Table 5. Survey questions on the moderating role of e-WOM on coping appraisal**

Variables	Measurement items	Sources
e-WOM – response efficacy	<ul style="list-style-type: none"> <li>Electronic word-of-mouth discussions about blockchain enhance my confidence in its problem-solving abilities.</li> <li>Electronic word-of-mouth affects my belief in the effectiveness of blockchain solutions.</li> <li>Electronic word-of-mouth about blockchain technology’s success stories increases my trust in its efficacy.</li> </ul>	(Rabby et al., 2022) (Bhaiswar et al., 2021)
e-WOM – self-efficacy	<ul style="list-style-type: none"> <li>The experiences shared online about blockchain technology boost my confidence in my ability to use it effectively.</li> <li>Electronic word-of-mouth impacts my belief in my capacity to understand and engage with blockchain technology.</li> <li>Electronic word-of-mouth narratives about blockchain enhance my self-assurance in mastering this technology.</li> </ul>	

**Table 6. Survey questions on the adoption of blockchain**

Variables	Measurement items	Source
Blockchain adoption	<ul style="list-style-type: none"> <li>I intend to use the blockchain-based system.</li> <li>Compared to traditional e-commerce payment methods, I prefer to use the blockchain system.</li> </ul>	(Albshaier et al., 2024)

## DATA ANALYSIS AND RESULTS

### *DEMOGRAPHIC AND BEHAVIORAL RESULTS*

The respondents’ demographics and online shopping engagement using the frequency distribution are summarized in Tables 7 and 8.

### Distribution of occupation

The distribution of occupations among the respondents is presented in Table 7, which indicates that full-time employees were the largest group (50.1%).

**Table 7. Distribution of occupation**

Occupation	Frequency	Percent
Students	63	17.9
Full-time employee	176	50.1
Part-time employee	15	4.3
Self-employed	34	9.7
Unemployed	46	13.1
Retired	17	4.8
Total	351	100.0

### Distribution of online engagement

Table 8 presents the distribution of online engagement, indicating that most respondents shop online monthly (55.8%), 24.2% purchase weekly, and 8.3% shop daily. This confirms that a digitally active sample is appropriate for the adoption analysis.

**Table 8. Distribution of online engagement**

Answer	Frequency	Percent
Daily	29	8.3
Weekly	85	24.2
Monthly	196	55.8
Annual	41	11.7
Total	351	100.0

### *NORMALITY ASSESSMENT*

Univariate normality was assessed using skewness and kurtosis (Tables 9 and 10, respectively). Absolute skewness  $\leq 2$  and absolute kurtosis  $\leq 7$  are widely used acceptability benchmarks for normal-theory analyses with sample sizes comparable to this research (N, sample size  $\approx 351$ ) (H.-Y. Kim, 2013; West et al., 1995). All constructs showed modest negative skewness ( $-0.52$ – $-1.07$ ) and positive kurtosis ( $0.07$ – $2.32$ ), which fall within the commonly accepted thresholds for parametric analyses; therefore, no non-parametric correction was required. Histograms and quantile-quantile (Q–Q) plots were also inspected to corroborate distributional assumptions.

**Table 9. Skewness and kurtosis analyses for the constructs**

Construct	Skewness	Kurtosis
Perceived threat vulnerability	-.521	.068
Perceived threat severity	-.782	1.222
Response efficacy	-.811	2.319
Self-efficacy	-1.066	2.317
e-WOM – perceived threat vulnerability	-.831	1.511
e-WOM – perceived threat severity	-.933	1.991
e-WOM – response efficacy	-.800	1.314
e-WOM – self-efficacy	-.824	2.105
Blockchain adoption	-.868	1.390

**Table 10. Skewness and kurtosis analyses for the overall dataset**

Statistics		
SK		
N	Valid	351
	Missing	0
Skewness		-.863
Std. Error of Skewness		.130
Kurtosis		2.706
Std. Error of Kurtosis		.260

### *DESCRIPTIVE ANALYSIS*

Descriptive statistics were used to characterize the distribution of variables and their properties, providing insights into their ranges, variabilities, and central tendencies.

#### **Threat appraisal – perceived threat vulnerability**

Table 11 presents the descriptive statistics for perceived threat vulnerability.

**Table 11. Descriptive analysis for independent variable  
(threat appraisal – perceived threat vulnerability)**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
I know my data could be vulnerable to security breaches if I do not use a digital wallet.	351	1.0	5.0	3.462	.9369
I could fall victim to a malicious attack if I do not use a digital wallet.	351	1.0	5.0	3.405	.9267
I believe that trying to protect my data using a digital wallet would reduce illegal access to it.	351	1.0	5.0	3.590	.8123
My personal data and resources may be compromised if I do not use a digital wallet.	351	1.0	5.0	3.513	.8547

The mean values (3.41 - 3.59) exceeded the midpoint, indicating moderate agreement that not using digital wallets increases vulnerability. Dispersion is modest, with standard deviations (SD  $\approx$  0.81 - 0.94), which supports the relevance of threat-related items for H1.

#### **Threat appraisal – perceived threat severity**

Table 12 presents the descriptive statistics for perceived threat severity.

**Table 12. Descriptive analysis for independent  
variable threat appraisal – perceived threat severity**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Having someone hack my digital wallet is harmful.	351	1.0	5.0	4.154	.8581

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Threats to the security of my personal data when using a digital wallet are harmful.	351	1.0	5.0	3.963	.8151
I view data security attacks on my digital wallet as harmful security attacks on my digital wallet are harmful.	351	1.0	5.0	3.943	.8226

The perceived severity was high (mean values  $\approx 3.94 - 4.15$ ) with acceptable dispersion ( $SD \approx 0.82 - 0.86$ ). This indicates that respondents regarded security breaches as harmful and established construct salience for H2.

### Coping appraisal – response efficacy

Table 13 presents the descriptive statistics for response efficacy.

**Table 13. Descriptive analysis for independent variable (coping appraisal – response efficacy)**

Descriptive Statistics					
	N	Minimum	Maximum	Mean	Std. Deviation
Using a blockchain-enabled digital wallet to protect my personal data would enable me to reduce the likelihood of security breaches.	351	1.0	5.0	3.755	.7652
If I use a blockchain-enabled digital wallet, the instances of security breaches will be fewer.	351	1.0	5.0	3.741	.8061
The regular usage of a blockchain-enabled digital wallet would help avoid security problems.	351	1.0	5.0	3.761	.7288

### Coping appraisal – self-efficacy

Table 14 presents descriptive statistics for self-efficacy.

**Table 14. Descriptive analysis for independent variable (coping appraisal – self-efficacy)**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
It would be easy for me to switch to the usage of a blockchain-enabled digital wallet.	351	1.0	5.0	3.655	.7915
I could protect my data by using a blockchain-enabled digital wallet if there was no one around to tell me what to do.	351	1.0	5.0	3.584	.8901

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
I could comply with information security policies by myself when using a blockchain-enabled digital wallet.	351	1.0	5.0	3.658	.8053

### e-WOM – perceived threat vulnerability

Table 15 presents descriptive statistics for the moderating effects of e-WOM on perceived threat vulnerability.

**Table 15. Descriptive analysis for moderating variable (e-WOM – perceived threat vulnerability)**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
Electronic Word-of-Mouth makes me feel more vulnerable to the risks associated with blockchain technology.	351	1.0	5.0	3.584	.8473
The information I read online significantly influences my perception of vulnerability to blockchain's potential risks.	351	1.0	5.0	3.692	.8085
Positive or negative narratives about blockchain technology online alter my sense of risk vulnerability.	351	1.0	5.0	3.709	.7641

### e-WOM – perceived threat severity

Table 16 presents descriptive statistics for the moderating effects of e-WOM on perceived threat severity.

### e-WOM – response efficacy

Table 17 presents descriptive statistics for the moderating effects of e-WOM on response efficacy.

### e-WOM – self-efficacy

Table 18 presents descriptive statistics for the moderating effects of e-WOM on self-efficacy.

**Table 16. Descriptive analysis for moderating variable (e-WOM – perceived threat severity)**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
Electronic Word-of-Mouth significantly influences my perception of the severity of risks associated with blockchain technology.	351	1.0	5.0	3.655	.8372

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
Electronic Word-of-Mouth affects my assessment of the severity of potential threats in blockchain technology.	351	1.0	5.0	3.689	.7913
My view of the seriousness of blockchain technology risks is shaped by the electronic Word-of-Mouth I encounter.	351	1.0	5.0	3.678	.7646

**Table 17. Descriptive analysis for moderating variable (e-WOM – response efficacy)**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
Electronic Word-of-Mouth discussions about blockchain enhance my confidence in its problem-solving abilities.	351	1.0	5.0	3.684	.8105
Electronic Word-of-Mouth affects my belief in the effectiveness of blockchain solutions.	351	1.0	5.0	3.729	.7770
Electronic Word-of-Mouth about blockchain technology's success stories increases my trust in its efficacy.	351	1.0	5.0	3.721	.7457

**Table 18. Descriptive analysis for moderating variable (e-WOM – self-efficacy)**

Descriptive statistics					
	N	Minimum	Maximum	Mean	Std. deviation
The experiences shared online about blockchain technology boosted my confidence in my ability to use it effectively.	351	1.0	5.0	3.744	.8365
Electronic Word-of-Mouth impacts my belief in my capacity to understand and engage with blockchain technology.	351	1.0	5.0	3.732	.8226
Electronic Word-of-Mouth narratives about blockchain enhance my self-assurance in mastering this technology.	351	1.0	5.0	3.752	.7357

Across Tables 13-18, means exceeded the scale midpoint, and dispersions were modest, supporting the relevance of threat- and coping-appraisal items. Inter-construct correlations were within acceptable

bounds, and diagnostics indicated no multicollinearity. Together, these results justify the hypothesis tests summarized in the subsequent tables.

### ***RELIABILITY (CRONBACH'S ALPHA)***

Table 19 presents Cronbach's alpha coefficients for all constructs.

**Table 19. Cronbach's alpha**

Construct	Number of items	Cronbach's alpha
Perceived threat vulnerability	4	.841
Perceived threat severity	3	.772
Response efficacy	3	.793
Self-efficacy	3	.812
e-WOM – perceived threat vulnerability	3	.788
e-WOM – perceived threat severity	3	.866
e-WOM – response efficacy	3	.823
e-WOM – self-efficacy	3	.826
Blockchain adoption	2	.787

Internal consistency was acceptable across constructs: Cronbach's alpha ( $\alpha$ ) ranged from 0.77 to 0.89 for threat and coping appraisals,  $\alpha = 0.79$ – $0.87$  for e-WOM items, and  $\alpha = 0.79$  for adoption, as indicated in Table 19. Values  $\geq 0.70$  indicate adequate reliability for research purposes, and values  $\geq 0.80$  indicate good reliability (H.-Y. Kim, 2013; West et al., 1995). A Confirmatory Factor Analysis (CFA) was conducted to assess the adequacy of the measurement model prior to hypothesis testing. The model demonstrated acceptable fit indices: CFI = 0.94, TLI = 0.93, and RMSEA = 0.06, meeting conventional thresholds (CFI/TLI  $\geq 0.90$ – $0.95$ ; RMSEA  $\leq 0.06$ – $0.08$  (Hu & Bentler, 1999). Structural Equation Modeling (SEM) was used to test the hypothesized relationships among perceived threat appraisals, coping appraisals, e-WOM, and blockchain adoption. These results confirmed that the measurement model provided an adequate representation of the observed data.

### ***CORRELATION TEST***

To determine whether there is a correlation between the variables in the study, Table 20 shows Pearson's correlation coefficients. The pairwise correlations were  $<.90$ , suggesting no bivariate redundancy. The Variance Inflation Factors (VIF) were below the common concern thresholds ( $\leq 5$ ), indicating that multicollinearity is unlikely (Hair et al., 2019; Kutner et al., 2005). Correlation is significant at the 0.01 level (2-tailed). For brevity, the constructs are referred to in this table using the following codes: G01 = perceived threat vulnerability, G02 = perceived threat severity, G03 = response efficacy, G04 = self-efficacy, G05 = e-WOM – perceived threat vulnerability, G06 = e-WOM – perceived threat severity, G07 = e-WOM – response efficacy, G08 = e-WOM – self-efficacy, and DP01 = blockchain adoption.

**Table 20. Correlation test table**

		G01	G02	G03	G04	G05	G06	G07	G08	DP01
G01	Pearson Correlation	1	.331**	.539**	.538**	.418**	.418**	.407**	.477**	.491**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000
	N	351	351	351	351	351	351	351	351	351

Examining Blockchain Adoption

		G01	G02	G03	G04	G05	G06	G07	G08	DP01
G02	Pearson Correlation	.331**	1	.469**	.373**	.393**	.393**	.404**	.441**	.364**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.000	.000
	N	351	351	351	351	351	351	351	351	351
G03	Pearson Correlation	.539**	.469**	1	.651**	.545**	.545**	.579**	.586**	.643**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000
	N	351	351	351	351	351	351	351	351	351
G04	Pearson Correlation	.538**	.373**	.651**	1	.524**	.524**	.548**	.622**	.655**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.000	.000
	N	351	351	351	351	351	351	351	351	351
G05	Pearson Correlation	.418**	.393**	.545**	.524**	1	1.000**	.644**	.637**	.579**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000
	N	351	351	351	351	351	351	351	351	351
G06	Pearson Correlation	.418**	.393**	.545**	.524**	1.000**	1	.644**	.637**	.579**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000
	N	351	351	351	351	351	351	351	351	351
G07	Pearson Correlation	.407**	.404**	.579**	.548**	.644**	.644**	1	.730**	.587**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000
	N	351	351	351	351	351	351	351	351	351

		G01	G02	G03	G04	G05	G06	G07	G08	DP01
G08	Pearson Correlation	.477**	.441**	.586**	.622**	.637**	.637**	.730**	1	.689**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000		.000
	N	351	351	351	351	351	351	351	351	351
DP01	Pearson Correlation	.491**	.364**	.643**	.655**	.579**	.579**	.587**	.689**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	
	N	351	351	351	351	351	351	351	351	351

### *HYPOTHESES TESTING*

Multiple linear regression was employed to test H1-H4, and hierarchical regression to test e-WOM moderation (H5.1-H5.4). Standardized beta coefficients ( $\beta$ ), t-values, and p-values were reported, and multicollinearity was assessed using Variance Inflation Factors (VIF).

#### **Multiple regression analysis (H1, H2, H3, H4)**

Multiple linear regression was applied to examine the effects of perceived threat vulnerability, threat severity, response efficacy, and self-efficacy on the adoption of blockchain technology. The corresponding results are presented in Tables 21–23 and are summarized as follows:

- Perceived threat vulnerability is positively associated with blockchain adoption ( $\beta = .101$ ,  $t = 2.18$ ,  $p = .030$ ), supporting H1.
- Perceived threat severity did not significantly predict adoption ( $\beta = .038$ ,  $t = 0.89$ ,  $p = .376$ ), thus rejecting H2.
- Response efficacy exhibited a significant positive relationship with adoption ( $\beta = .328$ ,  $t = 6.11$ ,  $p < .001$ ), thus supporting H3.
- Self-efficacy was also positively related to adoption ( $\beta = .373$ ,  $t = 7.24$ ,  $p < .001$ ), thus supporting H4.
- The model explains 51.9% of the variance in blockchain adoption ( $R^2 = .519$ ; adjusted  $R^2 = .513$ ; Table 22).
- VIFs were all below three (Table 23), well under common thresholds (3 – 5), confirming no multicollinearity concerns (Hair et al., 2019).

**Table 21. Model summary of multiple regression analysis on (H1-H4)**

Model	R	R square	Adjusted R square	Std. error of the estimate
1	.720a	.519	.513	.53434
a. Predictors: (constant), self-efficacy, perceived threat severity, perceived threat vulnerability, and response efficacy				

**Table 22. Variance analysis (ANOVA<sup>a</sup>) multiple regression analysis on (H1-H4)**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	106.505	4	26.626	93.254	.000b
	Residual	98.791	346	.286		
	Total	205.296	351			
a. Dependent variable: blockchain adoption						
b. Predictors: (constant), self-efficacy, perceived threat severity, perceived threat vulnerability, and response efficacy						

**Table 23. Coefficients<sup>a</sup> of multiple regression analysis on (H1-H4)**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.	Collinearity statistics	
		B	Std. error	Beta			Tolerance	VIF
1	(Constant)	.180	.204		.884	.378		
	PTV	.107	.049	.101	2.180	.030	.645	1.552
	PTS	.042	.047	.038	.887	.376	.768	1.303
	RE	.390	.064	.328	6.112	.000	.482	2.073
	SE	.403	.056	.373	7.239	.000	.524	1.907
a. Dependent variable: blockchain adoption								

**Hierarchical regression analysis (H5.1)**

A hierarchical linear regression was conducted to examine the moderating effects of e-WOM on the relationship between perceived threat vulnerability and blockchain adoption. The results are presented in Tables 24, 25, and 26.

**Table 24. Model summary of hierarchical regression analysis on (H5)**

Model	R	R-squared	Adjusted R-squared	Std. error of the estimate	Change statistics				
					R-square change	F change	df1	df2	Sig. F change
1	.720a	.519	.513	.53434	.519	93.254	4	346	.000
2	.770b	.593	.588	.49185	.075	63.374	1	345	.000
a. Predictors: (constant), self-efficacy, perceived threat severity, perceived threat vulnerability, and response efficacy									
b. Predictors: (constant), self-efficacy, perceived threat severity, perceived threat vulnerability, and response efficacy, e-WOM									

**Table 25. Variance analysis (ANOVA<sup>a</sup>) of hierarchical regression analysis on (H5)**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	106.505	4	26.626	93.254	.000b
	Residual	98.791	346	.286		
	Total	205.296	351			
2	Regression	121.836	5	24.367	100.727	.000c
	Residual	83.460	345	.242		

Model	Sum of squares	df	Mean square	F	Sig.
Total	205.296	351			
a. Dependent variable: blockchain adoption					
b. Predictors: (Constant), self-efficacy, perceived threat severity, perceived threat vulnerability, and response efficacy					
c. Predictors: (Constant), self-efficacy, perceived threat severity, perceived threat vulnerability, and response efficacy, e-WOM					

**Table 26. Coefficients<sup>a</sup> of hierarchical regression analysis on (H5)**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	.180	.204		.884	.378
	PTV	.107	.049	.101	2.180	.030
	PTS	.042	.047	.038	.887	.376
	RE	.390	.064	.328	6.112	.000
	SE	.403	.056	.373	7.239	.000
2	(Constant)	-.202	.193		-1.045	.297
	PTV	.049	.046	.047	1.076	.283
	PTS	-.025	.044	-.023	-.568	.570
	RE	.240	.062	.202	3.895	.000
	SE	.243	.055	.224	4.400	.000
	e-WOM	.541	.068	.419	7.961	.000
a. Dependent variable: blockchain adoption						

The first model (main effects) explains 51.9% of the variance in blockchain adoption ( $R^2 = .519$ ). After introducing e-WOM,  $R^2$  increased to .593 ( $\Delta R^2 = .075$ ,  $p < .001$ ), indicating a significant improvement in the model's explanatory power (Table 24). The standardized coefficient for e-WOM is  $\beta = .419$  ( $t = 7.96$ ,  $p < .001$ ; Table 26). These findings indicate that e-WOM significantly strengthens the relationship between perceived threat vulnerability and blockchain adoption, thereby supporting H5.1.

**Hierarchical regression analysis (H5.3)**

Hierarchical linear regression was applied to test whether e-WOM moderates the relationship between response efficacy and blockchain adoption. The results are reported in Tables 27, 28, and 29, respectively.

**Table 27. Model summary of hierarchical regression analysis on (H5.3)**

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.643a	.414	.412	.58728	.414	246.241	1	349	.000
2	.752b	.566	.563	.50622	.152	121.712	1	348	.000
a. Predictors: (constant), response efficacy									
b. Predictors: (constant), response efficacy, e-WOM									

**Table 18. Variance analysis (ANOVA<sup>a</sup>) of hierarchical regression analysis on (H5.3)**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	84.928	1	84.928	246.241	.000b
	Residual	120.369	349	.345		
	Total	205.296	351			
2	Regression	116.118	5	58.059	226.562	.000c
	Residual	89.179	348	.256		
	Total	205.296	351			
a. Dependent variable: blockchain adoption						
b. Predictors: (Constant), response efficacy						
c. Predictors: (Constant), response efficacy, e-WOM						

**Table 29. Coefficients<sup>a</sup> of hierarchal regression analysis on (H5.3)**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	.783	.185		4.227	.000
	RE	.764	.049	.101	15.692	.000
2	(Constant)	-.153	.181		-.847	.397
	RE	.347	.056	.292	6.148	.000
	e-WOM	.676	.061	.524	11.032	.000
a. Dependent variable: blockchain adoption						

The initial model (response efficacy only) explained 41.4% of the variance in blockchain adoption ( $R^2 = .414$ ). When e-WOM was added, the variance increased to 56.6% ( $\Delta R^2 = .152$ ,  $p < .001$ ; Table 27). The standardized coefficient for e-WOM is  $\beta = .524$  ( $t = 11.03$ ,  $p < .001$ ; Table 29). These results confirm that e-WOM amplifies the positive relationship between response efficacy and blockchain adoption, thus supporting H5.3.

#### Hierarchical regression analysis (H5.4)

Hierarchical linear regression is used to evaluate the moderating effect of e-WOM on the relationship between self-efficacy and blockchain adoption. The results are presented in Tables 30, 31, and 32.

**Table 30. Model summary of hierarchical regression analysis on (H5.4)**

Model	R	R square	Adjusted R square	Std. error of the estimate	Change statistics				
					R square change	F change	df1	df2	Sig. F change
1	.655a	.429	.427	.57956	.429	262.208	1	349	.000
2	.756b	.571	.569	.50293	.142	115.441	1	348	.000
a. Predictors: (Constant), self-efficacy									
b. Predictors: (Constant), self-efficacy, e-WOM									

**Table 31. Variance analysis (ANOVA<sup>a</sup>) of hierarchical regression analysis on (H5.4)**

Model		Sum of squares	df	Mean square	F	Sig.
1	Regression	88.072	1	88.072	262.208	.000b
	Residual	117.224	349	.336		
	Total	205.296	351			
2	Regression	117.272	2	58.636	231.815	.000c
	Residual	88.024	348	.253		
	Total	205.296	351			
a. Dependent Variable: blockchain adoption						
b. Predictors: (Constant), self-efficacy						
c. Predictors: (Constant), self-efficacy, e-WOM						

The first model, including self-efficacy, explained 51.9% of the variance in blockchain adoption ( $R^2 = .429$ ). Adding e-WOM increased the explained variance by 57.1% ( $\Delta R^2 = .142$ ,  $p < .001$ ; Table 30). The standardized coefficient for e-WOM is  $\beta = .510$  ( $t = 10.74$ ,  $p < .001$ ; Table 32). These findings demonstrate that e-WOM significantly enhances the effect of self-efficacy on blockchain adoption, confirming the support for H5.4.

**Table 32. Coefficients<sup>a</sup> of hierarchical regression analysis on (H5.4)**

Model		Unstandardized coefficients		Standardized coefficients	t	Sig.
		B	Std. error	Beta		
1	(Constant)	1.074	.162		6.631	.000
	SE	.709	.044	.655	16.193	.000
2	(Constant)	-.007	.173		-.039	.969
	SE	.337	.051	.311	6.547	.000
	e-WOM	.658	.061	.510	10.744	.000
a. Dependent variable: blockchain adoption						

## ***HYPOTHESIS RESULTS***

The final findings of the hypotheses are displayed in Table 33 and are summarized as follows:

- Perceived threat vulnerability (H1), response efficacy (H3), and self-efficacy (H4) were all positively associated with blockchain adoption intention, whereas perceived threat severity (H2) showed no significant effect.
- The moderating hypotheses revealed that e-WOM significantly strengthened the associations for perceived threat vulnerability (H5.1), response efficacy (H5.3), and self-efficacy (H5.4) but not for perceived threat (H5.2).
- Overall, coping appraisal factors (response efficacy and self-efficacy) showed stronger predictive power than threat appraisal factors, and e-WOM consistently amplified appraisal adoption relationships, aligning with PMT's emphasis on coping mechanisms.
- This finding supports the transition in PMT research from fear-driven to efficacy-driven behavioral models, aligning with the broader literature emphasizing the self-regulatory and confidence-based determinants of digital adoption (Floyd et al., 2000; Maddux & Rogers, 1983). Compared to previous research that linked perceived threats directly to protective motivation, this research reinforces that, in technology contexts, users are more influenced by perceived competence and collective trust rather than fear of loss or harm.

**Table 33. Hypothesis testing results**

Hypothesis	P-value	Direction	Decision
H1: “Perceived threat vulnerability has an impact on the adoption of blockchain technology at a significance level of $\alpha \leq 0.05$ ”.	0.030	Positive	Accepted
H2: “Perceived threat severity has an impact on the adoption of blockchain technology at a significance level of $\alpha \leq 0.05$ ”.	0.376	----	Rejected
H3: “Response efficacy has a positive impact on the adoption of blockchain technology at a significance level of $\alpha \leq 0.05$ ”.	0.000	Positive	Accepted
H4: “Self-efficacy has a positive impact on adoption of blockchain technology at a significance level of $\alpha \leq 0.05$ ”.	0.000	Positive	Accepted
H5: “e-WOM moderates the relationship between coping appraisal, threat appraisal, and blockchain adoption at a significance level $\alpha \leq 0.05$ ”.	0.000	Positive	Accepted
H5.1: “e-WOM moderates the relationship between perceived threat vulnerability and blockchain adoption at a significance level $\alpha \leq 0.05$ ”.	0.000	Positive	Accepted
H5.2: “e-WOM moderates the relationship between perceived threat severity and blockchain adoption at a significance level $\alpha \leq 0.05$ ”.	0.376	----	Rejected
H5.3: “e-WOM moderates the relationship between response efficacy and blockchain adoption at a significance level $\alpha \leq 0.05$ ”.	0.000	Positive	Accepted
H5.4: “e-WOM moderates the relationship between self-efficacy and blockchain adoption at a significance level $\alpha \leq 0.05$ ”.	0.000	Positive	Accepted

## DISCUSSION

These findings highlight that coping appraisals, particularly response efficacy and self-efficacy, play a decisive role in shaping consumers’ adoption intentions. This suggests that adoption behavior is driven less by perceived threat and more by a sense of behavioral control and confidence, consistent with the PMT’s emphasis on adaptive motivation (Maddux & Rogers, 1983). Individuals who believe that blockchain effectively mitigates risks (response efficacy) and that they can competently use it (self-efficacy) experience greater perceived control, which is one of the strongest cognitive predictors of behavioral intention in protection-motivated contexts (Albshaier et al., 2024; Bodkhe et al., 2020; Chowdhury et al., 2021; Marikyan et al., 2022). Moreover, e-WOM moderated the relationship between coping appraisal factors and adoption, confirming that positive online narratives enhance individuals’ motivation to adopt new technologies. These findings highlight the growing social influence of digital communication and the integration of social components such as e-WOM into PMT-based adoption models.

Overall, the coping appraisal variables (response efficacy and self-efficacy) were stronger predictors than the threat appraisal variables, emphasizing that confidence and perceived usefulness outweigh perceived risk in driving blockchain adoption among Jordanian consumers. Six hypotheses were accepted, while the remaining two were rejected, based on the findings of prior regression analyses. Collectively, the results address the study’s research questions by showing that while perceived threats have a limited direct impact, coping appraisals and e-WOM interactions critically explain consumers’ adoption intentions. These insights align with the empirical findings of the theoretical model proposed in Chapter Two, demonstrating how PMT constructs function in a consumer technology adoption setting.

The research questions and findings are addressed as follows:

### **Research question 1:**

The main objective of this study is to determine whether Jordanian consumers' perceptions of vulnerability have a positive impact on their adoption of blockchain technology in the e-commerce industry. The hypothesis, which is based on the PMT, proposes a positive correlation between the intention to use blockchain technology and perceived threat vulnerability.

*“To what extent does perceived vulnerability impact the adoption of blockchain technology?”*

The first hypothesis (H1) examines whether perceived threat vulnerability influences blockchain adoption. Regression analysis indicated a significant positive effect ( $\beta = .101$ ,  $p = .030$ ), confirming that Jordanian consumers who perceived greater vulnerability were more inclined to adopt blockchain. This finding partially aligns with the PMT, emphasizing that vulnerability can motivate protective action, although its effect is weaker than that of coping beliefs. Prior studies similarly found that perceived vulnerability contributes to initial adoption intentions, but not long-term usage (Al-Mansoori et al., 2023).

### **Research Question 2:**

This question investigated how Jordanian customers' perceptions of the severity of threats affect their adoption of blockchain technology in e-commerce. According to the PMT principles, the hypothesis anticipated a correlation between perceived threat intensity and inclination to use blockchain.

*“To what extent does the perceived severity of threats affect the adoption of blockchain technology?”*

The second hypothesis (H2) proposes that perceived threat severity positively affects blockchain adoption. The results ( $\beta = .038$ ,  $p = .376$ ) indicate no significant relationship, suggesting that perceived severity does not motivate adoption in this context. One possible explanation lies in Jordan's cultural trust dynamics and technological familiarity. Consumers in collectivist cultures may rely more on social validation (peer influence or public reputation) than on personal threat assessments when deciding to adopt new technologies. Additionally, the abstract nature of blockchain and limited consumer understanding might reduce the perceived relevance of “threat severity,” shifting the focus toward trust and efficacy-based evaluations. This contrasts with Devčić and Vrček (2021), who found severity to be relevant in cybersecurity contexts. This finding suggests that, for emerging technologies such as blockchain, consumers are less driven by threat perceptions and more driven by confidence and perceived benefit.

### **Research Question 3:**

The current research question investigates the impact of response efficacy on Jordanian consumers' adoption of blockchain technology in the e-commerce sector. The hypothesis suggests that response efficacy positively influences adoption intention, which is consistent with PMT principles.

*“To what extent does response efficacy impact the adoption of blockchain technology?”*

The third hypothesis (H3) tested whether response efficacy influenced blockchain adoption. The analysis confirmed a significant positive effect ( $\beta = .328$ ,  $p < .001$ ), indicating that consumers who perceive blockchain to be effective in reducing security issues are more motivated to adopt it. This supports the PMT's coping appraisal mechanism and aligns with previous studies (Rahmawati, 2019; Voskoboynikov et al., 2021). This result underscores that emphasizing the tangible benefits of blockchain can enhance perceived effectiveness and adoption likelihood.

### **Research Question 4:**

This question examined the impact of self-efficacy on Jordanian consumers' adoption of blockchain technology in the e-commerce sector. The hypothesis suggests a positive correlation between self-efficacy and adoption intention, consistent with the principles of PMT.

*“To what extent does self-efficacy impact the adoption of blockchain technology?”*

The fourth hypothesis (H4) explores the effect of self-efficacy on blockchain adoption. The results ( $\beta = .373, p < .001$ ) supported a strong positive relationship, consistent with PMT and previous research (Pekkala & Van Zoonen, 2022). Consumers with a higher confidence in their ability to use blockchain technologies are more likely to adopt them. This suggests that improving users' digital competence through education and support programs can significantly enhance their adoption intentions.

#### **Research Question 5 (H5.1, H5.2, H5.3, and H5.4):**

This research question examines the moderating role of e-WOM in the relationships between coping appraisal, threat appraisal, and the adoption of blockchain technology in e-commerce among consumers in Jordan. The hypothesis proposes that e-WOM moderates these relationships, with positive e-WOM enhancing the influence of coping appraisal components on adoption.

*“To what extent does e-WOM moderate the relationship between threat appraisal, coping appraisal, and adoption of blockchain technology?”*

The fifth hypothesis examined the moderating role of e-WOM across threat and coping appraisal relationships, consistent with its conceptualization as a social influence moderator rather than a mediator. The results partially supported this hypothesis: e-WOM significantly strengthened the effects of response efficacy, self-efficacy, and perceived vulnerability on adoption (H5.1, H5.3, H5.4) but not perceived severity (H5.2). This underscores that peer communication and online discourse can amplify confidence and perceived benefits more effectively than threat-based appeals can. Practically, this means that consumer recommendations and online reviews may outweigh technical assurances in influencing adoption decisions.

## **CONCLUSION, IMPLICATIONS, & FUTURE WORK**

---

This study examines the factors influencing Jordanian consumers' adoption of blockchain technology through the lens of PMT and the moderating role of e-WOM. By empirically integrating PMT with social influence variables, this study advances our understanding of individual-level adoption in emerging markets.

The research's primary conclusions are as follows:

- Threat and coping appraisals through perceived threat vulnerability have a substantial impact on the adoption of blockchain technology.
- Threat appraisal and coping appraisal have a greater effect on consumers' tendencies to use blockchain technology than does perceived threat severity.
- Response efficacy has a beneficial impact on consumers' decisions to use blockchain technology.
- Consumers' intentions to use blockchain technology are significantly influenced by their level of self-efficacy.
- The relationship between threat appraisal, coping appraisal, and the adoption of blockchain technology is moderated by e-WOM.

These findings provide insight into the psychological aspects of PMT that influence blockchain adoption. They revealed how Jordanian consumers assess risk, evaluate coping mechanisms, and rely on the moderating influence of e-WOM when making adoption decisions. Techniques that enhance self-efficacy through user training, emphasize response efficacy through success stories, and promote positive e-WOM within online communities may strengthen consumer confidence in blockchain technology.

#### **Theoretical implications**

This study extends PMT by incorporating e-WOM as a moderating factor, demonstrating that social influence enhances the effect of coping appraisals on technology adoption. It provides empirical support for applying PMT to consumer-level blockchain adoption, thus strengthening its cross-context

validity within the MENA region. This is among the first studies to integrate PMT and e-WOM in a Jordanian blockchain context, emphasizing that coping beliefs and social influence play a more critical role than perceived threat in shaping adoption behavior.

### Practical implications

Industry stakeholders should emphasize blockchain's response efficacy and provide user training to enhance self-efficacy. Policymakers should promote awareness campaigns and establish interoperability standards to increase trust and accessibility. Leveraging positive e-WOM through testimonials and online communities can encourage adoption and confidence in blockchain applications.

### Limitations and future work

This study is limited by its convenience sampling method and single-country focus, which may affect the generalizability of its findings. Future research should employ longitudinal or cross-cultural designs to validate and expand these results. Comparative analyses across MENA and global contexts, as well as testing new moderators such as trust and digital literacy, would further strengthen the understanding of blockchain adoption behavior. Qualitative or mixed-method approaches can also provide deeper insights into post-adoption behavior and social influence dynamics.

## REFERENCES

---

- Abu Bakar, R., & Rahmatullah, B. (2022). Relationship between threat appraisal and security practice. *Journal of Information Security and Applications*, 20(4), 1118–1126.
- Afrin, N., & Pathak, A. (2023). Blockchain-powered security and transparency in supply chain: Exploring traceability and authenticity through smart contracts. *International Journal of Computer Applications*, 185(49). <https://doi.org/10.5120/ijca2023923318>
- Akram, S. V., Malik, P. K., Singh, R., & Anita, G. (2020). Adoption of blockchain technology in various realms: Opportunities and challenges. *Security and Privacy*, 3(5), e109–e122. <https://doi.org/10.1002/spy2.109>
- Al-Ashmori, A., Basri, S. B., Dominic, P., Capretz, L., Muneer, A., Balogun, A., & Ali, R. F. (2022). Classifications of sustainable factors in blockchain adoption: A literature review and bibliometric analysis. *Sustainability*, 14(9), 5176. <https://doi.org/10.3390/su14095176>
- Albshaier, L., AlMarri, S., & Hafizur Rahman, M. M. (2024). A review of blockchain's role in e-commerce transactions: Open challenges, and future research directions. *Computers*, 13(1), 27. <https://doi.org/10.3390/computers13010027>
- Al-Dmour, A., Al-Dmour, R., Al-Dmour, H., & Al-Adwan, A. S. (2024). Blockchain applications and commercial bank performance: The mediating role of AIS quality. *Journal of Open Innovation: Technology, Market, and Complexity*, 10, 100302. <https://doi.org/10.1016/j.joitmc.2024.100302>
- Alfandi, O., Khanji, S. I. R., Ahmad, L. A., & Khattak, A. M. (2021). A survey on boosting IoT security and privacy through blockchain. *Cluster Computing*, 24(1), 37–55. <https://doi.org/10.1007/s10586-020-03137-8>
- Ali, O., Ally, M., & Dwivedi, Y. K. (2020). The state of play of blockchain technology in the financial services sector: A systematic literature review. *International Journal of Information Management*, 54, 102199. <https://doi.org/10.1016/j.ijinfomgt.2020.102199>
- Al-Mansoori, A., Al-Emran, M., & Shaalan, K. (2023). Exploring the frontiers of cybersecurity behavior: A systematic review of studies and theories. *Applied Sciences*, 13(9), 5700. <https://doi.org/10.3390/app13095700>
- Al-Mekhlafi, S., & Al-Shaibany, N. (2021). The literature review of blockchain adoption. *Asian Journal of Research in Computer Science*, 7(2), 29–50. <https://doi.org/10.9734/ajrcos/2021/v7i230177>
- Al-Sakhnini, M., & Al-Moaiad, Y. (2024). A review of applications of blockchain technology in the Middle East. *Kurdish Studies*, 12(1), 103–130.

- AlShamsi, M., Al-Emran, M., Daim, T., Al-Sharafi, M. A., Bolatan, G. I. S., & Shaalan, K. (2024). Uncovering the critical drivers of blockchain sustainability in higher education using a deep learning-based hybrid SEM-ANN approach. *IEEE Transactions on Engineering Management*, *71*, 8192-8208. <https://doi.org/10.1109/tem.2024.3365041>
- AlShamsi, M., Al-Emran, M., & Shaalan, K. (2022). A systematic review on blockchain adoption. *Applied Sciences*, *12*(9), 42–45. <https://doi.org/10.3390/app12094245>
- Ameyaw, P. D., & De Vries, W. T. (2020). Transparency of land administration and the role of blockchain technology, a four-dimensional framework analysis from the Ghanaian land perspective. *Land*, *9*(12), 491. <https://doi.org/10.3390/land9120491>
- Arunmozhi, M., Venkatesh, V. G., Arisian, S., Shi, Y., & Sreedharan, V. R. (2022). Application of blockchain and smart contracts in autonomous vehicle supply chains: An experimental design. *Transportation Research Part E: Logistics and Transportation Review*, *165*, Article 102864. <https://doi.org/10.1016/j.tre.2022.102864>
- Ben Youssef, A., & Dahmani, M. (2023). Examining the drivers of e-commerce adoption by Moroccan firms: A multi-model analysis. *Information*, *14*(7), 378. <https://doi.org/10.3390/info14070378>
- Bhaiswar, R., Meenakshi, N., & Chawla, D. (2021). Evolution of electronic word of mouth: A systematic literature review using bibliometric analysis of 20 years (2000–2020). *FIIB Business Review*, *10*(3), 215–231. <https://doi.org/10.1177/23197145211032408>
- Bodkhe, U., Tanwar, S., Parekh, K., Khanpara, P., Tyagi, S., & Kumar, N. (2020). Blockchain for industry 4.0: A comprehensive review. *IEEE Access*, *8*, 79764–79800. <https://doi.org/10.1109/access.2020.2988579>
- Bokolo, A. J. (2022). Exploring interoperability of distributed ledger and decentralized technology adoption in virtual enterprises. *Information Systems and e-Business Management*, *20*, 685–718. <https://doi.org/10.1007/s10257-022-00561-8>
- Bosamia, M., & Patel, D. (2020). Comparisons of blockchain based consensus algorithms for security aspects. *International Journal of Emerging Technology*, *11*(3), 427–434.
- Brislin, R. W. (1986). The wording and translation of research instruments. In W. J. Lonner & J. W. Berry (Eds.), *Field methods in cross-cultural research* (pp. 137–164). Sage Publications.
- Cai, C., Hao, X., Wang, K., & Dong, X. (2023). The impact of perceived benefits on blockchain adoption in supply chain management. *Sustainability*, *15*, 6634. <https://doi.org/10.3390/su15086634>
- Chowdhury, M. U., Suchana, K., Alam, S. M., & Khan, M. (2021). Blockchain application in banking system. *Journal of Software Engineering and Applications*, *14*(7), 298–311. <https://doi.org/10.4236/jsea.2021.147018>
- Degirmenci, K., & Barros, A. (2021). How secure is blockchain? Extending the protection motivation theory with trust. In *Proceedings of the 27th Americas Conference on Information Systems (AMCIS)*. Association for Information Systems. Montreal, Canada, August 12–14, 2021.
- Demirtaş-Madran, H. A. (2021). Accepting restrictions and compliance with recommended preventive behaviors for COVID-19: A discussion based on the key approaches and current research on fear appeals. *Frontiers in Psychology*, *12*, 558437. <https://doi.org/10.3389/fpsyg.2021.558437>
- Devčić, A., & Vrčec, N. (2021). Organizational challenges of blockchain adoption: An exploratory literature review. In 2021 IEEE Technology & Engineering Management Conference – Europe (TEMSCON-EUR). *IEEE*. <https://doi.org/10.1109/temskon-eur52034.2021.9488598>
- Dutta, P., Choi, T.-M., Somani, S., & Butala, R. (2020). Blockchain technology in supply chain operations: Applications, challenges and research opportunities. *Transportation Research Part E: Logistics and Transportation Review*, *142*, 102067. <https://doi.org/10.1016/j.tre.2020.102067>
- Elliot, V., Flodén, J., Overland, C., Raza, Z., Staron, M., Woxenius, J., Basu, A., Rajput, T., Schneider, G., & Stefansson, G. (2024). CEOs' understanding of blockchain technology and its adoption in export-oriented companies in West Sweden: A survey. *Journal of Global Operations and Strategic Sourcing*, *17*(4), 661–684. <https://doi.org/10.1108/jgoss-07-2020-0038>

- El-Mamy, S. B., Mrabet, H., Gharbi, H., Jemai, A., & Trentesaux, D. (2020). A survey on the usage of blockchain technology for cyber-threats in the context of industry 4.0. *Sustainability*, *12*(21), 9179. <https://doi.org/10.3390/su12219179>
- Esmaelian, B., Sarkis, J., Lewis, K., & Behdad, S. (2020). Blockchain for the future of sustainable supply chain management in Industry 4.0. *Resources, Conservation and Recycling*, *163*, 105064. <https://doi.org/10.1016/j.resconrec.2020.105064>
- Etemadi, N., Borbon-Galvez, Y., Strozzi, F., & Etemadi, T. (2021). Supply chain disruption risk management with blockchain: A dynamic literature review. *Information*, *12*(2), 70. <https://doi.org/10.3390/info12020070>
- Floyd, D. L., Prentice-Dunn, S., & Rogers, R. W. (2000). A meta-analysis of research on Protection Motivation Theory. *Journal of Applied Social Psychology*, *30*(2), 407-429. <https://doi.org/10.1111/j.1559-1816.2000.tb02323.x>
- Gaur, L., Afaq, A., Singh, G., & Dwivedi, Y. K. (2021). Role of artificial intelligence and robotics to foster the touchless travel during a pandemic: A review and research agenda. *International Journal of Contemporary Hospitality Management*, *33*(11), 4079–4098. <https://doi.org/10.1108/ijchm-11-2020-1246>
- Goldsmith, L., Shaikh, A. K., Tan, H. Y., & Raahemifar, K. (2022). A review of contemporary governance challenges in Oman: Can blockchain technology be part of sustainable solutions? *Sustainability*, *14*(19), 11819. <https://doi.org/10.3390/su141911819>
- Grover, P., Kar, A. K., & Janssen, M. (2019). Perceived usefulness, ease of use and user acceptance of blockchain technology for digital transactions: Insights from user-generated content on Twitter. *Enterprise Information Systems*, *13*(6), 771–800. <https://doi.org/10.1080/17517575.2019.1599446>
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2019). *Multivariate data analysis (8th ed.)*. Cengage Learning Publisher.
- Happy, A., Chowdhury, M. M. H., & Hossan, M. (2023). Antecedents and consequences of blockchain adoption in supply chains: A systematic literature review. *Journal of Enterprise Information Management*, *36*(2), 629–654. <https://doi.org/10.1108/jeim-03-2022-0071>
- Hu, L.-T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal*, *6*(1), 1–55. <https://doi.org/10.1080/10705519909540118>
- Hussain, A., Emon, M. A., Tanna, T. A., & Iqbal, E. R. (2022). A systematic literature review of blockchain technology adoption in Bangladesh. *Annals of Emerging Technologies in Computing*, *6*(3), 1–30. <https://doi.org/10.33166/aetic.2022.01.001>
- Irfan, M. (2024). The role of trust in mediating the impact of electronic word of mouth and security on cryptocurrency purchase decisions. *Journal of Current Research in Blockchain*, *1*(3). <https://doi.org/10.47738/jcrr.v1i3.18>
- Joshi, S., Pise, A. A., Shrivastava, M., Revathy, C., Kumar, H., Alsetoohy, O., & Akwafo, R. (2022). Adoption of blockchain technology for privacy and security in the context of Industry 4.0. *Wireless Communications and Mobile Computing*, *2022*, 1–14. <https://doi.org/10.1155/2022/4079781>
- Katsikouli, P., Wilde, A. S., Dragoni, N., & Jensen, H. H. (2021). On the benefits and challenges of blockchains for managing food supply chains. *Journal of the Science of Food and Agriculture*, *101*(13), 5233–5240. <https://doi.org/10.1002/jsfa.10883>
- Kharche, A., Badholia, S., & Upadhyay, R. K. (2024). Implementation of blockchain technology in integrated IoT networks for constructing scalable ITS systems in India. *Blockchain: Research and Applications*, *5*(2), 100188. <https://doi.org/10.1016/j.bcra.2024.100188>
- Kim, D. J., Ferrin, D. L., & Rao, H. R. (2008). A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents. *Decision Support Systems*, *44*(2), 544–564. <https://doi.org/10.1016/j.dss.2007.07.001>
- Kim, H.-Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and kurtosis. *Restorative Dentistry & Endodontics*, *38*(1), 52–54. <https://doi.org/10.5395/rde.2013.38.1.52>

- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
- Kutner, M. H., Nachtsheim, C. J., Neter, J., & Li, W. (2005). *Applied linear statistical models (5th ed.)*. McGraw-Hill/Irwin.
- Li, J., & Kassem, M. (2021). Applications of distributed ledger technology (DLT) and blockchain-enabled smart contracts in construction. *Automation in Construction*, 132, 103955. <https://doi.org/10.1016/j.autcon.2021.103955>
- Li, Y., Cao, K., & Jenatabadi, K. S. (2023). Effect of entrepreneurial education and creativity on entrepreneurial intention in college students: Mediating entrepreneurial inspiration, mindset, and self-efficacy. *Frontiers in Psychology*, 14, 1104213. <https://doi.org/10.3389/fpsyg.2023.1240910>
- Liu, X., Ahmad, S. F., Anser, M. K., Ke, J., Irshad, M., Ul-Haq, J., & Abbas, S. (2022). Cybersecurity threats: A never-ending challenge for e-commerce. *Frontiers in Psychology*, 13, Article 902798. <https://doi.org/10.3389/fpsyg.2022.927398>
- Maddux, J. E., & Rogers, R. W. (1983). Protection motivation and self-efficacy: A revised theory of fear appeals and attitude change. *Journal of Experimental Social Psychology*, 19(5), 469-479. [https://doi.org/10.1016/0022-1031\(83\)90023-9](https://doi.org/10.1016/0022-1031(83)90023-9)
- Makwana, D., Engineer, P., Dabhi, A., & Chudasama, H. (2023). Sampling methods in research: A review. *International Journal of Trending Sciences*, 7(6), 762–768.
- Marikyan, D., & Papagiannidis, S. (2023). Protection motivation theory: A review. In *TheoryHub Book* (pp. 78–93). TheoryHub.
- Marikyan, D., Papagiannidis, S., Rana, O. F., & Ranjan, R. (2022). Blockchain adoption: A study of cognitive factors underpinning decision making. *Computers in Human Behavior*, 131, 107236. <https://doi.org/10.1016/j.chb.2022.107207>
- Mattos, C. S., Pellegrini, G., Hagelaar, G., & Dolfsma, W. (2024). Systematic literature review on technological transformation in SMEs: A transformation encompassing technology assimilation and business model innovation. *Management Review Quarterly*, 74, 1057–1095. <https://doi.org/10.1007/s11301-023-00327-7>
- Miraz, M. H., Hasan, M. T., Rekabder, M. S., & Akhter, R. (2022). Trust, transaction transparency, volatility, facilitating condition, performance expectancy towards cryptocurrency adoption through intention to use. *Journal of Management Information and Decision Sciences*, 25, 1–20.
- Mladenović, D., Bruni, R., Filieri, R., Ismagilova, E., Kalia, P., & Jirásek, M. (2024). The power of electronic word of mouth in inducing adoption of emerging technologies. *Technology in Society*, 79, 102724. <https://doi.org/10.1016/j.techsoc.2024.102724>
- Musamih, A., Salah, K., Jayaraman, R., Arshad, J., Debe, M., Al-Hammadi, Y., & Ellahham, S. (2021). A blockchain-based approach for drug traceability in healthcare supply chain. *IEEE Access*, 9, 9728–9743. <https://doi.org/10.1109/access.2021.3049920>
- Mweetwa, L., & Mwangi, A. (2023). Major models and theories of cryptocurrency technology adoption: A theoretical review. *International Journal of Multidisciplinary Research and Growth Evaluation*, 4(5), 661–673. <https://doi.org/10.54660/ijmrge.2023.4.5.661-673>
- Nelufule, N., Singano, T., Senamela, P., Masemola, K., Shadung, D., & Mangole, T. (2024, November). A survey on the application of blockchain technology for cyber-physical systems. In *Proceedings of the 2024 5th International Conference on Data Intelligence and Cognitive Informatics (ICDICI)* (pp. 1–8). IEEE. <https://doi.org/10.1109/ICDICI62993.2024.10810909>
- Nguyen, V. H., Nguyen, T. P. L., Nguyen, T. T. P., & Nguyen, T. V. H. (2024). Citizens' intention toward sustainable tourism through integrating protection motivation theory (PMT) and theory of interpersonal behavior (IIB). *Tourism Review*, 79(9), 1525–1541. <https://doi.org/10.1108/TR-06-2023-0375>
- Norisnita, M., & Indriati, F. (2022). Application of theory of planned behavior (TPB) in cryptocurrency investment prediction: A literature review. *Economics and Business Quarterly Reviews*, 5(2), 181–188. <https://doi.org/10.31014/aior.1992.05.02.424>

- Nuseir, M. T., Aljumah, A. I., Refae, G. E., Awawdeh, A. E., Baadhem, A. M., & Urabi, S. (2023). The role of social media usage, e-WOM, and perceived enjoyment in shaping customer attitudes and blockchain adoption loyalty in UAE banking: A quantitative investigation. In *2023 International Conference on Intelligent Computing, Communication, Networking and Services (ICCNS)* (pp. 141–148). IEEE. <https://doi.org/10.1109/ic-cns58795.2023.10193614>
- Oh, S. J., Xiao, S., Park, B. I., & Roh, T. (2025). Coping or threat? Unraveling the mechanisms enabling user acceptance of blockchain technologies. *Information Technology and Management*, *26*, 219–233. <https://doi.org/10.1007/s10799-023-00409-8>
- Patrício, L. D., & Ferreira, J. J. (2021). Blockchain security research: Theorizing through bibliographic-coupling analysis. *Journal of Advances in Management Research*, *18*(1), 1–35. <https://doi.org/10.1108/jamr-04-2020-0051>
- Pekkala, K., & Van Zoonen, W. (2022). Work-related social media use: The mediating role of social media communication self-efficacy. *European Management Journal*, *40*(1), 67–76. <https://doi.org/10.1016/j.emj.2021.03.004>
- Rabby, F., Chimhundu, R., & Hassan, R. (2022). Blockchain technology transforms digital marketing by growing consumer trust. In S. M. Idrees & M. Nowostawski (Eds.), *Transformations through blockchain technology* (pp. 265–289). Springer. [https://doi.org/10.1007/978-3-030-93344-9\\_12](https://doi.org/10.1007/978-3-030-93344-9_12)
- Rahmawati, R. N. (2019). Self-efficacy and use of e-learning: A theoretical review of the technology acceptance model (TAM). *American Journal of Humanities and Social Sciences Research*, *3*(1), 41–55. <https://doi.org/10.33395/owner.v3i2.151>
- Santoso, E., Erinda, J. L., & Andrian, T. (2023). The influence of perceived risk, trust, e-WOM, and awareness on behavioral intention to cryptocurrency. In *Proceedings of the 2023 14th International Conference on E-Business, Management and Economics (ICEME '23)* (pp. 336–343). ACM. <https://doi.org/10.1145/3616712.3616763>
- Sharari, H., Qawasmeh, R., Al-Mu'ani, L., & Halteh, K. (2025). Blockchain project management: Exploring potential advancements. *Humanities and Social Sciences Letters*, *13*(2), 603–617. <https://doi.org/10.18488/73.v13i2.4242>
- Singh, A., & Kalra, A. (2021). Impact of mobile wallets security on consumer attitude towards use. *Psychology and Education*, *58*(2), 3140–3146.
- Sit, J., Ballantyne, E., & Gorst, J. (2023). Consumers' price sensitivity (CPS) during times of a financial-hardship event: A critical literature review. *Proceedings of the 8th Colloquium on European Research in Retailing (CERR)*, Sheffield, United Kingdom, 99–104.
- Trawnih, A., Yaseen, H., Alsoud, M. A., Al-Salim, M. A., & Hattar, C. (2025). Empowering startup supply chain: Exploring the integration of SCF, AI, blockchain, and trust. *Logistics*, *9*(2), 69. <https://doi.org/10.3390/logistics9020069>
- Voskobojnikov, A., Abramova, S., Beznosov, K., & Böhme, R. (2021). Non-adoption of crypto-assets: Exploring the role of trust, self-efficacy, and risk. In *Proceedings of the European Conference on Information Systems (ECIS)*.
- Wang, Q., Zhu, X., Ni, Y., Gu, L., & Zhu, H. (2019). Blockchain for the IoT and industrial IoT: A review. *Internet of Things*, *11*, 100229. <https://doi.org/10.1016/j.iot.2019.100081>
- West, S. G., Finch, J. F., & Curran, P. J. (1995). Structural equation models with non-normal variables: Problems and remedies. In R. H. Hoyle (Ed.), *Structural equation modeling: Concepts, issues, and applications* (pp. 56–75). Sage.
- Yadlapalli, A., Rahman, S., & Gopal, P. (2022). Blockchain technology implementation challenges in supply chains: Evidence from the case studies of multi-stakeholders. *The International Journal of Logistics Management*, *33*(5), 278–305. <https://doi.org/10.1108/ijlm-02-2021-0086>
- Zerbini, C., Vergura, D., & Pizzi, G. (2022). Drivers of consumer adoption of e-commerce: A meta-analysis. *Journal of Business Research*, *143*, 555–569. <https://doi.org/10.1016/j.jiresmar.2022.04.003>
- Zickar, M. J., & Keith, M. G. (2023). Innovations in sampling: Improving the appropriateness and quality of samples in organizational research. *Annual Review of Organizational Psychology and Organizational Behavior*, *10*(1), 315–337. <https://doi.org/10.1146/annurev-orgpsych-120920-052946>

## AUTHORS

---



**Rand Abdel-Wahad** is a Marketing Specialist and a Master's graduate from Princess Sumaya University for Technology in Amman, Jordan. She holds a bachelor's degree in English Language and Literature from the University of Jordan. Her professional background encompasses experience in digital marketing, social media management, and brand communication. Rand currently works with Zain Jordan as a Social Media Specialist, where she contributes to the planning and execution of social media campaigns, content development, and performance analysis to strengthen the brand's digital presence. Prior to that, she worked with The Hub Agency and UBlac Marketing Agency, focusing on social media strategy, content creation, and influencer collaborations. Her research interests include digital marketing strategies, social media analytics, branding, and consumer engagement in digital environments.



**Dr Ammar Abdallah** is an Assistant Professor at King Talal School of Business Technology, Princess Sumaya University for Technology in Jordan. He holds a PhD in Software Engineering & IT from the University of Québec, Ecole de Technologie Supérieure (Canada), a master's degree in Quality Systems Engineering from Concordia University (Canada), and a bachelor's degree in Computer Science from Al-Balqa Applied University (Jordan). In addition to his academic work, he has extensive consulting experience as a web analytics specialist and senior analyst, having developed and implemented successful digital analytics strategies for various businesses, including Accenture, Avanquest, and Toromont CAT in Canada. His research interests include software measurement, enterprise architecture, quality systems engineering, business information technology, and digital analytics.



**Chahd El-Qutob** is a digital marketing specialist and a master's student in Electronic Marketing and Social Media at Princess Sumaya University for Technology (PSUT), Jordan. Her professional experience spans client- and agency-side leadership roles across the Middle East, the United States, and Europe, where she has led data-driven marketing initiatives in mobility technology, telecommunications, and e-commerce sectors. Her research interests focus on digital innovation, marketing analytics, consumer behavior, and the strategic role of marketing in corporate growth and transformation. She is also committed to educational outreach, having served as a digital marketing trainer at the American Embassy in Jordan.



**Dr Fandi Omeish** is the Head of the E-Marketing and Social Media department and a distinguished scholar and expert in the field of digital marketing. He earned his PhD from the prestigious Peking University, one of the top-ranked universities globally. Additionally, he holds a Master's degree in International Marketing Strategies from Hasselt University in Belgium. Dr Omeish's research interests are diverse and cutting-edge, encompassing Tourism Marketing, Virtual Influencers, Social Media, and Digital Marketing. His academic contributions have significantly advanced these fields, making him a respected voice in the marketing community. Before his current role at Princess Sumaya University for Technology (PSUT), Dr Omeish served as the Marketing and Public Relations Director at the American Uni-

versity of Madaba. In this capacity, he played a pivotal role in shaping the university's marketing strategies and public image. He also has extensive experience as a Marketing Lecturer, where he has been instrumental in laying the foundational knowledge of marketing for numerous students. Dr Omeish's professional journey is further enriched by his practical experience in an international advertising agency, where he honed his skills in global marketing campaigns and strategic communication.



**Dr Mohammad Abuhashesh** is an accomplished scholar and professional with over 16 years of experience in e-marketing in the United States. He holds a Bachelor's and Master's degree from Governors State University in Illinois, as well as a Doctorate in Business Administration (DBA) with a specialization in E-marketing from Argosy University in Chicago. Currently, Dr Abuhashesh serves as an Associate Professor at the King Talal School of Business Technology (KTSBT) at Princess Sumaya University for Technology (PSUT) in Amman, Jordan. Throughout his academic tenure, Dr Abuhashesh has held several key leadership positions at PSUT, including serving as the President's Assistant and as Head of the E-Marketing Department and Social Media. His extensive research portfolio encompasses areas such as e-marketing, social media, consumer behavior, marketing communi-

cation, sustainability, and business entrepreneurship.