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Article

Determinants of Attitude and Blockchain Adoption in United Arab Emirates

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Abstract

This study examines the determinants of Blockchain adoption, with a specific focus on the mediating role of attitude within an extended Technology Acceptance Model (TAM) framework. The proposed model integrates social influence, perceived usefulness, and perceived ease of use as key antecedents shaping user attitude, which subsequently affects Blockchain adoption behavior. A quantitative research design was employed to test the hypothesized relationships. Primary data were collected from 196 employees working in service sector organizations across banking, healthcare, supply chain, and education industries in the United Arab Emirates. Convenience sampling was used for respondent selection. The data were analyzed using SmartPLS software through Partial Least Squares Structural Equation Modeling (PLS-SEM), enabling simultaneous assessment of direct and indirect relationships among constructs. The empirical findings highlight attitude as a central mediating mechanism in the Blockchain adoption process. The results indicate that cognitive and social factors collectively contribute to the formation of positive user attitudes, which in turn significantly influence adoption behavior. The study further demonstrates the applicability of the extended TAM framework in explaining Blockchain adoption in organizational settings. This research contributes to the existing literature by extending TAM to emerging Blockchain technology and providing empirical evidence from a developing economy context. The findings offer practical insights for managers and policymakers aiming to enhance user acceptance and successful implementation of Blockchain-based systems in service sector organizations.

Keywords: perceived ease of use; perceived usefulness; social influence; attitude; blockchain adoption

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1. Introduction

The rapid advancement of digital technologies has significantly transformed the way organizations operate, communicate, and deliver services. Among these emerging technologies, Blockchain has gained substantial attention due to its decentralized structure, transparency, security features, and potential to enhance trust in digital transactions (AlShamsi et al., 2022). Originally introduced as the underlying technology for cryptocurrencies, Blockchain has now expanded its applications across multiple sectors, including banking, healthcare, supply chain management, education, and public administration (Queiroz & Wamba, 2019). Despite its potential benefits, the adoption of Blockchain technology in organizational settings, particularly in developing economies, remains limited and uneven. In recent years, organizations in the United Arab Emirates (UAE) have increasingly explored Blockchain technology as part of their digital transformation strategies. The UAE government has also demonstrated strong interest in adopting Blockchain-based solutions to improve efficiency, transparency, and service delivery. However, successful implementation of such technologies largely depends on user acceptance and willingness to adopt (Iyengar et al., 2023). Understanding the behavioral and perceptual factors that influence adoption is therefore

critical for ensuring successful integration of Blockchain systems within organizational processes (Angelis & Da Silva, 2019).

Technology adoption research has long been grounded in established theoretical frameworks, with the Technology Acceptance Model (TAM) being one of the most widely used models. TAM suggests that perceived usefulness (PU) and perceived ease of use (PEOU) are key determinants of user attitude, which in turn influences behavioral intention and actual usage. However, given the complexity of modern technologies such as Blockchain, traditional TAM constructs alone may not fully explain user adoption behavior. Therefore, researchers have increasingly extended TAM by incorporating additional social and contextual variables to better capture adoption dynamics.

In this study, social influence (SI) is introduced alongside PU and PEOU as an external determinant of attitude. Social influence refers to the extent to which individuals perceive that important others, such as colleagues, supervisors, or professional networks, believe they should use a particular technology. In organizational environments, especially within service sector industries, social factors often play a significant role in shaping employee attitudes and technology-related decisions. Attitude is conceptualized as a mediating construct that reflects an individual's overall positive or negative evaluation of using Blockchain technology. It is expected to serve as a key mechanism through which PU, PEOU, and SI influence Blockchain adoption behavior.

Despite growing interest in Blockchain, empirical studies focusing on its adoption in developing countries remain limited (Prewett et al., 2020; Loukil et al., 2021; Rubino et al., 2025). In particular, there is a lack of research examining the combined effect of cognitive and social factors on Blockchain adoption within organizational contexts. Moreover, the mediating role of attitude in this relationship has not been sufficiently explored, especially in service sector industries where digital transformation is rapidly evolving.

To address this gap, the present study investigates the determinants of Blockchain adoption by extending the TAM framework to include social influence and attitude as a mediating construct. The study focuses on employees working in banking, healthcare, supply chain, and education sectors in the UAE, providing insights from a diverse service-oriented economy. A quantitative research approach is employed, and data are analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM) to assess both direct and indirect relationships among the variables.

By integrating cognitive and social dimensions, this study aims to provide a more comprehensive understanding of Blockchain adoption behavior. The findings are expected to contribute to both theory and practice by enhancing the explanatory power of TAM in the context of emerging technologies and by offering actionable insights for policymakers and organizational leaders seeking to promote effective Blockchain implementation.

2. Literature Review and Hypotheses Development

2.1. Blockchain Technology and Adoption Context

Blockchain technology has emerged as one of the most transformative innovations in the digital era. It is a decentralized, distributed ledger system that enables secure, transparent, and tamper-resistant recording of transactions without the need for intermediaries (Clohessy & Acton, 2019). Its applications extend beyond cryptocurrencies to diverse domains such as supply chain management, healthcare records, financial services, and education systems. The inherent characteristics of Blockchain—immutability, transparency, traceability, and cryptographic security—make it particularly attractive for organizations seeking to enhance operational efficiency and trust in data-driven environments (Mishra et al., 2025).

Despite these advantages, Blockchain adoption remains in its early stages in many developing and emerging economies. Organizations often face challenges such as technological complexity, lack of awareness, regulatory uncertainty, and resistance to change (AlShamsi et al., 2022). In service sector industries, where human interaction and information systems are deeply integrated, user acceptance plays a critical role in determining whether Blockchain technologies are successfully implemented (Queiroz & Wamba, 2019). As such, understanding the behavioral determinants of adoption is essential for both theory and practice.

2.2. Technology Acceptance Model

The Technology Acceptance Model (TAM), introduced by Davis (1989), is one of the most widely applied frameworks for understanding user acceptance of information systems. TAM posits that two key beliefs—perceived usefulness (PU) and perceived ease of use (PEOU)—determine an individual's attitude toward using a technology, which subsequently influences behavioral intention and actual usage. Perceived usefulness refers to the degree to which an individual believes that using a system will enhance job performance, while perceived ease of use refers to the degree to which a system is perceived as free of effort. Over the years, TAM has been extensively validated across various technological contexts, including e-commerce, mobile applications, and enterprise systems. However, with the emergence of complex technologies such as Blockchain, researchers argue that traditional TAM constructs may not fully capture adoption behavior (Almekhlafi & Al-Shaibany, 2021). This has led to the development of extended

TAM models that incorporate additional external variables such as social influence, trust, perceived risk, and facilitating conditions.

2.3. Perceived Ease of Use and Attitude

Perceived ease of use is a fundamental determinant in shaping user attitude toward technology adoption. When users perceive a system as easy to understand and operate, they are more likely to develop a positive evaluation of it. In the context of Blockchain technology, ease of use becomes particularly important due to its technical complexity and unfamiliarity among non-technical users (Namahoot & Rattanawiboonsom, 2022). Prior research has consistently demonstrated that PEOU has a significant positive effect on attitude across various technological domains (Junejo et al., 2024). Users who believe that Blockchain systems are simple and user-friendly are more likely to perceive them favorably and show willingness to engage with them. Therefore, it is expected that:

H1: Perceived ease of use has a significant positive effect on attitude toward Blockchain adoption.

2.4. Perceived Usefulness and Attitude

Perceived usefulness reflects the extent to which individuals believe that using Blockchain technology will improve their job performance, efficiency, and decision-making processes. In organizational settings, employees are more likely to adopt technologies that provide clear functional and operational benefits (Shrestha et al., 2021). Blockchain technology offers several potential advantages, such as improved data security, reduced fraud, enhanced transparency, and streamlined transaction processes (Grover et al., 2019). These benefits contribute to users' perceptions of its usefulness. Extensive literature in TAM-based studies confirms that PU is a strong predictor of attitude formation (Sciarelli et al., 2022). When users perceive Blockchain as beneficial and performance-enhancing, they are more likely to develop favorable attitudes toward its adoption. Thus, the following hypothesis is proposed:

H2: Perceived usefulness has a significant positive effect on attitude toward Blockchain adoption.

2.5. Social Influence and Attitude

Social influence refers to the extent to which individuals perceive that important others—such as colleagues, supervisors, or professional peers—believe they should use a particular technology. In organizational environments, social norms and peer expectations can significantly shape individual attitudes and decision-making behavior. Within the context of Blockchain adoption, employees may be influenced by organizational leadership, industry trends, or peer adoption behavior (Chen, 2023). When influential stakeholders support Blockchain implementation, individuals are more likely to perceive it positively and develop a favorable attitude toward its use (Pérez-Sánchez et al., 2021). Social Influence has been widely recognized in technology adoption models such as the Unified Theory of Acceptance and Use of Technology (UTAUT), where it plays a critical role in shaping behavioral intentions. In developing economies, where organizational hierarchies and collective decision-making are often strong, social influence becomes even more relevant. Accordingly, the following hypothesis is developed:

H3: Social influence has a significant positive effect on attitude toward Blockchain adoption.

2.6. Attitude and Blockchain Adoption

Attitude is defined as an individual's overall evaluative judgment—positive or negative—toward performing a specific behavior. Within TAM, attitude serves as a central mediating construct between belief variables (PU and PEOU) and behavioral intention. In the context of Blockchain technology, attitude reflects users' psychological readiness and willingness to engage with the system. (Alshurafat et al., 2023) A positive attitude increases the likelihood of adoption, while a negative attitude may hinder acceptance regardless of perceived benefits. Prior studies consistently confirm that attitude is a strong predictor of technology adoption behavior (Liang & Chi, 2021). Therefore, in the context of Blockchain, individuals with favorable attitudes are expected to be more willing to adopt and use the technology in their work processes. Thus, the following hypothesis is proposed:

H4: Attitude has a significant positive effect on Blockchain adoption.

2.7. Mediating Role of Attitude

Attitude not only functions as a direct predictor of behavior but also serves as a mediating mechanism through which cognitive and social beliefs influence adoption outcomes. In extended TAM frameworks, PU, PEOU, and SI

shape user perceptions, which are subsequently translated into behavioral responses through attitude formation. In this study, attitude is proposed as a mediator between PU, PEOU, SI, and Blockchain adoption. This implies that the influence of these determinants on adoption is not only direct but also indirect through attitude formation. Users may first evaluate Blockchain based on its usefulness, ease of use, and social acceptance, which collectively shape their overall attitude toward the technology (Kumari & Devi, 2023). This attitude then drives their actual adoption behavior. Empirical studies in information systems research have demonstrated that attitude mediation improves explanatory power in adoption models, particularly for complex technologies (Esfahbodi et al., 2022). Therefore, incorporating attitude as a mediating construct provides a more comprehensive understanding of Blockchain adoption behavior. Accordingly, the following mediation hypotheses are proposed:

H5: Attitude mediates the relationship between perceived ease of use and Blockchain adoption.
H6: Attitude mediates the relationship between perceived usefulness and Blockchain adoption.
H7: Attitude mediates the relationship between social influence and Blockchain adoption.

Figure 1 presents research model.

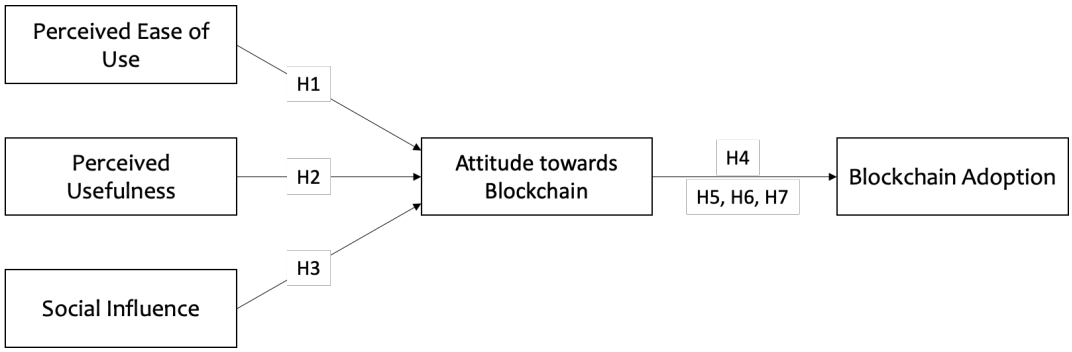

Figure 1. Research model.

3. Methodology

This study adopts a quantitative research design to examine the determinants of Blockchain adoption and the mediating role of attitude within an extended TAM model. A cross-sectional survey approach was employed to collect data from respondents at a single point in time. This design is appropriate for testing hypothesized relationships among variables and for providing empirical evidence on technology adoption behavior in organizational settings.

The target population of the study consists of employees working in service sector organizations in the United Arab Emirates, specifically within the banking, healthcare, supply chain, and education industries. These sectors were selected due to their increasing engagement with digital transformation initiatives and the growing relevance of Blockchain technology. A convenience sampling technique was used to collect data due to accessibility and time constraints. A total of 196 valid responses were obtained and used for analysis. Although convenience sampling may limit the generalizability of findings, it is widely accepted in technology adoption research where access to respondents is constrained.

Data were collected through a structured online questionnaire. The instrument was designed using a five-point Likert scale, where 1 = strongly agree, 2 = agree, 3 = neutral, 4 = disagree, and 5 = strongly disagree. The questionnaire consisted of two sections. Section A included demographic information such as gender, age, and work experience. Section B contained measurement items related to PU, PEOU, SI, attitude, and Blockchain adoption. All responses were kept strictly confidential to ensure anonymity and reduce response bias.

The measurement items for all constructs were adapted from previously validated scales to ensure reliability and validity. PEOU was measured using four items adapted from Davis (1989) and Godoe and Johansen (2012), focusing on the ease, clarity, and usability of Blockchain systems. PU was measured using four items adapted from Davis (1989), and Godoe and Johansen (2012), assessing the extent to which Blockchain improves performance, productivity, and efficiency. SI was measured using four items derived from Taylor and Todd (1995), capturing the impact of peers and organizational expectations on adoption decisions. Attitude was measured using four items adapted from Davis (1989), and Taylor and Todd (1995), reflecting respondents' overall evaluation of Blockchain technology. Blockchain adoption was measured using three items adapted from Hsu et al. (2004), and Venkatesh and Zhang (2010), assessing the likelihood of future use and implementation. Minor modifications were made to align all items with the context of Blockchain technology. The collected data were analyzed using SmartPLS software through Partial Least Squares Structural Equation Modeling (PLS-SEM).

4. Results

Table 1 presents the demographic profile of the study participants. The age distribution shows that most respondents are in the 25–30 years category (40.8%), followed by 30–35 years (27.0%), indicating a predominantly young workforce with high exposure to emerging technologies such as Blockchain. Overall, 93.9% of participants are below 45 years of age, reflecting a youthful sample drawn from banking, healthcare, education, and supply chain sectors. In terms of gender, the sample is largely male (72.4%), while females account for 27.6%, indicating a noticeable gender imbalance typical in technology-oriented service sectors in the region. Regarding work experience, the majority of respondents have moderate experience levels, with 51.0% having 2–4 years and 23.0% having 4–6 years of experience. Overall, 85.7% fall within the 2–8 years experience range, suggesting that the sample mainly consists of early- to mid-career professionals who are likely to be involved in or influence technology adoption decisions.

Table 1. Profile of study participants (N = 196).

Variable	Category	Frequency	Percent (%)
Age	25–30	80	40.8
	30–35	53	27.0
	35–40	31	15.8
	40–45	20	10.2
	45–50	12	6.1
Gender	Male	142	72.4
	Female	54	27.6
Work Experience	1–2 years	7	3.6
	2–4 years	100	51.0
	4–6 years	45	23.0
	6–8 years	16	8.2
	8–10 years	28	14.3

Table 2 presents the results of the measurement model assessment, confirming that all constructs demonstrate acceptable levels of reliability and validity, thereby supporting their suitability for further structural analysis using PLS-SEM. For PEOU, the factor loadings range from 0.72 to 0.86, exceeding the recommended threshold of 0.70 and indicating satisfactory indicator reliability. The construct demonstrates adequate internal consistency with a Cronbach's alpha of 0.76 and composite reliability of 0.78. The Average Variance Extracted (AVE = 0.60) confirms acceptable convergent validity, indicating that the construct explains more than 60% of the variance in its indicators. For PU, the loadings range from 0.73 to 0.84, reflecting good item reliability. Cronbach's alpha (0.78) and composite reliability (0.83) indicate satisfactory internal consistency. The AVE value of 0.72 exceeds the minimum required level, confirming strong convergent validity. The SI construct shows loadings between 0.72 and 0.80, indicating acceptable indicator reliability. Cronbach's alpha (0.81) reflects good internal consistency, while composite reliability (0.79) remains within acceptable limits. The AVE value of 0.67 confirms adequate convergent validity. For attitude, the loadings range from 0.75 to 0.88, indicating strong item reliability, particularly for ATT3, which shows the highest loading. The construct demonstrates good reliability with Cronbach's alpha (0.80) and composite reliability (0.82). The AVE value of 0.64 confirms satisfactory convergent validity. Finally, Blockchain adoption exhibits strong loadings ranging from 0.79 to 0.88. Cronbach's alpha (0.77) and composite reliability (0.74) indicate acceptable reliability, while the AVE value of 0.67 confirms adequate convergent validity.

Table 2. Measurement model.

Constructs	Items	Loadings	Cronbach's Alpha	Composite Reliability	AVE
Perceived Ease of Use (PEOU)	PEOU1: I feel that the features of Blockchain technology will be easy to use.	0.72	0.76	0.78	0.60
	PEOU2: I think Blockchain technology is clear and understandable.	0.78			
	PEOU3: I believe it will be easy for me to remember and perform tasks using Blockchain technology.	0.86			
	PEOU4: Blockchain technology will be easier to use compared to conventional systems in supply chain, healthcare, and education sectors.	0.81			
Perceived Usefulness (PU)	PU1: Using Blockchain technology will help minimize transaction delays.	0.73	0.78	0.83	0.72
	PU2: Using Blockchain technology would improve job performance.	0.77			
	PU3: Using Blockchain technology would enhance productivity.	0.75			
	PU4: Using Blockchain technology would improve effectiveness in organizational processes.	0.84			
Social Influence (SI)	SI1: Most of my colleagues expect my organization to use Blockchain technology.	0.80	0.81	0.79	0.67

Constructs	Items	Loadings	Cronbach's Alpha	Composite Reliability	AVE
	SI2: Most of my colleagues believe using Blockchain technology is a wise decision.	0.73			
	SI3: People whose opinions I value prefer that my organization use Blockchain technology.	0.72			
	SI4: Competitive pressure encourages my organization to adopt Blockchain technology.	0.79			
Attitude (ATT)	ATT1: It is desirable to use Blockchain technology.	0.75	0.80	0.82	0.64
	ATT2: I believe using Blockchain technology is a good idea.	0.77			
	ATT3: Overall, my attitude toward Blockchain technology is favorable.	0.88			
	ATT4: I would feel happy if my organization implements Blockchain technology.	0.76			
Blockchain Adoption (BA)	BA1: My organization will use Blockchain technology on a regular basis in the future.	0.84	0.77	0.74	0.67
	BA2: My organization will use Blockchain technology in the future.	0.79			
	BA3: I expect that my organization will adopt Blockchain or similar systems.	0.88			

Table 3 presents the results of discriminant validity using the Heterotrait-Monotrait (HTMT) ratio. The findings indicate that all HTMT values among the constructs—Attitude, Blockchain Adoption, Perceived Ease of Use, Perceived Usefulness, and Social Influence—are below the recommended threshold of 0.85. The highest value is observed between Social Influence and Perceived Usefulness (0.806), which remains within acceptable limits. These results confirm that all constructs are empirically distinct and do not exhibit issues of multicollinearity or conceptual overlap. Therefore, the measurement model demonstrates satisfactory discriminant validity, supporting the reliability and robustness of the constructs used in this study.

Table 3. Discriminant validity with Hetrotrait-Monotrait Ratio (HTMT).

	ATT	BA	PEOU	PU	SI
ATT					
BA	0.468				
PEOU	0.557	0.707			
PU	0.194	0.585	0.6		
SI	0.335	0.624	0.584	0.806	

Table 4 presents the results of the structural model analysis, including direct, indirect (mediation), and hypothesis testing outcomes. The findings indicate that PEOU has a significant positive effect on attitude ($\beta = 0.533$, $t = 4.882$, $p < 0.001$), thereby supporting H1. This suggests that when users perceive Blockchain technology as easy to use, they are more likely to develop a favorable attitude toward it. In contrast, PU ($\beta = 0.188$, $t = 1.088$, $p = 0.138$) and SI ($\beta = 0.152$, $t = 1.112$, $p = 0.133$) do not show statistically significant effects on attitude. Therefore, H2 and H3 are not supported. This indicates that usefulness perceptions and social pressure do not significantly shape users' attitudes toward Blockchain adoption in the studied context. The results further reveal that attitude has a strong and significant positive effect on Blockchain adoption ($\beta = 0.441$, $t = 4.509$, $p < 0.001$), supporting H4. This confirms that attitude plays a central role in determining users' intention to adopt Blockchain technology.

Regarding mediation effects, attitude significantly mediates the relationship between PEOU and Blockchain adoption ($\beta = 0.235$, $t = 3.921$, $p < 0.001$), supporting H5. This finding highlights that ease of use influences adoption behavior primarily through the formation of positive attitudes. However, the mediation effects of PU (PU → ATT → BA) ($\beta = 0.083$, $p = 0.292$) and SI (SI → ATT → BA) ($\beta = 0.067$, $p = 0.277$) are not significant. Thus, H6 and H7 are not supported, indicating that these factors do not indirectly influence Blockchain adoption through attitude.

Table 4. Path coefficients.

Relationship	Beta	Std. Deviation	t-Statistics	p-Value	Decision
PEOU → ATT	0.533	0.109	4.882	0.000	H1 Supported
PU → ATT	0.188	0.173	1.088	0.138	H2 Not Supported
SI → ATT	0.152	0.137	1.112	0.133	H3 Not Supported
ATT → BA	0.441	0.098	4.509	0.000	H4 Supported
PEOU → ATT → BA (Mediation)	0.235	0.113	3.921	0.000	H5 Supported
PU → ATT → BA (Mediation)	0.083	0.107	1.054	0.292	H6 Not Supported
SI → ATT → BA (Mediation)	0.067	0.088	1.087	0.277	H7 Not Supported

Table 5 presents the results of the coefficient of determination (R^2) and effect size (f^2) analysis for the structural model. The R^2 value for Attitude (0.281) indicates that Perceived Ease of Use, Perceived Usefulness, and Social

Influence collectively explain 28.1% of the variance in Attitude, reflecting a moderate level of explanatory power. Similarly, the R^2 value for Blockchain Adoption (0.195) suggests a weak to moderate level of predictive accuracy, indicating that Attitude explains 19.5% of the variance in Blockchain Adoption, while additional factors outside the model may also contribute. In terms of effect size, Perceived Ease of Use demonstrates a medium to large effect on Attitude (f^2 = 0.263), confirming it as the most influential predictor in the model. Attitude also shows a moderate effect size on Blockchain Adoption (f^2 = 0.242), highlighting its strong role as a key driver of adoption behavior. In contrast, Perceived Usefulness (f^2 = 0.025) and Social Influence (f^2 = 0.017) exhibit small effect sizes, indicating minimal contribution to Attitude formation in this context.

Table 5. Effect size.

Variables	R^2	f^2	Effect Size Interpretation
ATT	0.281	0.242	Moderate
BA	0.195	—	Weak to Moderate (predictive power)
PEOU	—	0.263	Medium to Large
PU	—	0.025	Small
SI	—	0.017	Small

5. Discussion

This study examined the determinants of Blockchain adoption using an extended TAM, incorporating PEOU, PU, and SI as antecedents of attitude, with attitude acting as a mediator toward Blockchain adoption. The findings provide important theoretical and practical insights into user acceptance behavior in service sector organizations in the United Arab Emirates. The results indicate that PEOU significantly influences attitude, and it emerges as the most dominant predictor in the model. This finding is consistent with TAM literature, which emphasizes that users are more likely to develop favorable attitudes when they perceive a technology as easy to use. In the context of Blockchain, which is often considered complex, ease of use plays a critical role in reducing cognitive barriers and enhancing positive evaluations (Iyengar et al., 2023). The strong effect size of PEOU further confirms its central influence in shaping ATT.

In contrast, PU does not significantly influence attitude, which deviates from classical TAM assumptions where usefulness is typically a key determinant of acceptance. This may be due to the early-stage awareness of Blockchain, where users may not yet fully recognize or experience its performance benefits (Angelis & Da Silva, 2019; Loukil et al., 2021). Similarly, SI also shows no significant effect on attitude, suggesting that adoption decisions are primarily driven by individual cognition rather than social or normative pressure in the studied context.

The findings further confirm that attitude significantly influences Blockchain adoption, highlighting its critical role in translating beliefs into adoption behavior. This supports TAM's core proposition that attitude serves as a key psychological mechanism in technology acceptance. Additionally, the mediation analysis shows that attitude significantly mediates the relationship between PEOU and Blockchain adoption, indicating that ease of use indirectly drives adoption through the formation of positive attitudes. However, the mediation effects of PU and SI through attitude are not significant, suggesting limited indirect influence on Blockchain adoption. The relatively low R^2 for Blockchain adoption also indicates that other factors such as trust, perceived risk, or organizational readiness may further explain adoption behavior.

The findings of this study offer several important theoretical and practical implications. From a theoretical perspective, the study extends the TAM by incorporating SI and examining attitude as a mediating construct in the relationship between PEOU, PU, and Blockchain adoption. The results demonstrate that PEOU is the most influential determinant of attitude, which challenges the traditional TAM assumption that PU is the primary driver of technology acceptance. This suggests that in the context of emerging and complex technologies such as Blockchain, ease of use plays a more critical role in shaping user perceptions than perceived functional benefits or social pressure.

From a practical perspective, the findings provide valuable insights for organizations and policymakers involved in Blockchain implementation. Since PEOU has the strongest impact on attitude and indirectly on Blockchain adoption, organizations should prioritize system design that emphasizes simplicity, usability, and user-friendly interfaces. Providing adequate training, technical support, and user guidance can further reduce perceived complexity and enhance acceptance. Similarly, the weak role of SI indicates that adoption decisions are more individually driven rather than socially influenced, implying that organizations should focus more on individual user readiness rather than peer pressure or normative influence.

6. Conclusions

The study examined the determinants of Blockchain Adoption by extending the TAM, incorporating PEOU, PU, and SI as antecedents of attitude, with attitude acting as a mediating construct. The empirical findings provide clear evidence that PEOU is the most significant driver of attitude, which in turn has a strong and significant effect on Blockchain adoption. This confirms that ease of use plays a central role in shaping user attitudes and ultimately

influencing adoption behavior in the context of Blockchain technology. In contrast, PU and SI were found to have no significant direct or indirect effects on attitude and Blockchain, indicating that functional benefits and social pressures are not strong determinants of adoption in the studied context. This suggests that users prioritize simplicity and usability over perceived performance advantages or external influence when evaluating Blockchain technology. The mediation analysis further confirms that attitude serves as a key mechanism through which PEOU translates into actual adoption behavior, highlighting its critical role in the decision-making process. Blockchain adoption suggests that additional factors such as trust, perceived risk, organizational readiness, or facilitating conditions may further enhance the model in future studies.

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Writing –review & editing: Stephen Olabode.
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