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Antecedents of blockchain adoption success: The mediating effect of user satisfaction to enhance project management information systems

Ra'ed Masa'deh[a*], Hussein Almajali[b], Mohammad Nurul Alam[c], Nadeem El-Adaileh[d], Khalid Altarawneh[d] and Dmaithan Almajali[e]

[a]*The University of Jordan, Jordan*
[b]*Al Ain University, United Arab Emirates*
[c]*University of Tabuk, Saudi Arabia*
[d]*Mutah University, Jordan*
[e]*Applied Science Private University, Jordan*

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This paper examined how information quality within project management information systems is being improved through the use of blockchain technology. A conceptual framework was developed based on past findings and relevant theories. User satisfaction determinants affecting blockchain adoption success in Jordan were examined in this paper. A cross-sectional design and Random sampling technique were employed. Data collection involved the use of questionnaires. Data obtained from 393 responses were analyzed using AMOS software. The findings showed a significant impact of system quality, information quality, ease of use on user satisfaction, whereas service quality did not show a similar impact. Also, ease of use impacted blockchain adoption success, but user satisfaction did not. In addition, user satisfaction did not mediate the relationship between ease of use and Blockchain adoption success. Results had implications on blockchain use in Jordan. Several recommendations were proposed for forthcoming scholarly works and blockchain actual adoption, in Jordan especially.

1. Introduction

Businesses today are increasingly relying on projects, and project-based businesses currently make up a large percentage of the global economy (McKevitt et al., 2017; Al-Rawashdeh & AlHalaseh, 2025). In dealing with the erratic and constantly shifting environment, more and more project managers are being recruited, as can be observed happening in a number of industries (Turner et al., 2013; Alnwairan, 2022). At the same time, these industries need to strive to sustain their reliability and control (Crawford et al., 2013; Turner et al., 2013). However, environments with varied or complex projects pose challenges to these project-based organizations. For instance, managers in project-based would find that paper-based data collections and old-style data management tools (e.g., spreadsheets) are insufficient in satisfying the information requirements of intricate projects (Kautz et al., 2017). Not only that, it can be challenging to combine the cutting-edge project management information systems (PMIS) with present systems (Kautz et al., 2017).

In project environments, the use of blockchain is promising. Hence, organizations that are considering the use of blockchain should have their managers working closely with the technical experts, to gain understanding on the feasibility, risks, and integration paths of blockchain implementation. Such collaboration could facilitate organization in preventing hidden complexity or scope creep. Blockchain could reshape how trust, transparency, and control in projects are managed, and blockchain increases the confidence and efficiency of project professionals in dealing with complex ecosystems, especially in tracking, approving and verifying the work. As the technology matures, the use of blockchain intensifies in sectors that require

* Corresponding author
E-mail address r.masadeh@ju.edu.jo (R. Masa'deh)

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thorough audit trails, secure collaboration, and automated acquiescence. Blockchain has thus become a vital addition to the toolkit of project managers. This technology is now a promising solution in addressing challenges and transforming the PMIS landscape (Lu et al., 2022).

Blockchain is an increasingly popular technology today. This innovative and promising technology entails a digital, decentralized and distributed ledger that allows chronological transaction recording and accumulation, resulting in records that are both lasting and secure (Treiblmaier, 2018; Gurtu & Johny, 2019). Aside from assuring data security, this promising innovative technology also increases visibility and digitalization scope, and creates smart contracts (Karajeh et al., 2014; Alalwan, 2022). Owing to these advantages offered by blockchain technology, supply chain management (SCM) could be greatly improved with the integration of this promising technology (Wang et al., 2019; Wen et al., 2021a, b). Firms that employ blockchain saw improvement in their product returns and waste control (Centobelli et al., 2022). Furthermore, Chang et al. (2020) stated that transactions and customs paperwork become simpler with blockchain, and being a single window system, blockchain makes tasks significantly more efficient especially in customs clearance. The use of blockchain can be observed in various industries including logistics and supply chains as well (Queiroz et al., 2019).

Clearly, the acceptance of blockchain in various industries and domains is increasingly common today. Still, many barriers have emerged with regards to the acceptance of potential users of this promising technology, as reported by Fu and Zhu (2019) and Toufaily et al. (2021), and according to Saberi et al. (2019), interorganizational barriers, intraorganizational barriers, technical barriers and external barriers are the four major barriers in blockchain technology uptake. Relevantly, lack of expertise, scalability, computing power, future legal and regulatory acquiescence, refusal of organization towards accepting the technology, and availability of ideal platform, were discussed by Min (2019) as the potential challenges in blockchain technology. Additionally, involvement of varied parties, immature technology, and vague regulations, were reported by Petersen et al. (2018) as the challenges faced in blockchain technology implementation.

The ability to benefit from correct adoption of blockchain have been discussed in studies such as Roeck et al. (2019) and Dong et al. (2021), but notably, the incorporation of blockchain and supply chain is a concept that many are still unfamiliar with. Additionally, blockchain impact on the conventional business models is unknown as well, and so, as indicated by Queiroz and Wamba (2019), this technology needs to be examined more deeply in order to increase the knowledge of it. Furthermore, for user firms, Cole et al. (2019) stated that having deep understanding of blockchain technology is highly useful. Treiblmaier (2018) and Toufaily et al. (2021) relevantly indicated that more exploration on blockchain technology will make firms more interested to invest in the usage of this technology. Blockchain technology, despite its massive potential, remains an unfamiliar concept among many users. Wamba and Queiroz (2020) have indeed reported the uncertainly among these User s concerning how blockchain could be used in obtaining value for both their businesses and supply chains.

2.Theoretical Model and Hypotheses Development

2.1 Blockchain Technology

In essence, the economic, political and legal systems would require contracts, transactions and documentations or records, and these contracts, transactions and documentations or records would bind and govern the people, organizations and nations (Kouhizadeh et al., 2021). Today's era, known as the digital era, the traditional administration methods are increasingly becoming irrelevant, signifying the need for transformations. Following the transformation of the landscape of business, Telukdarie et al. (2018) highlighted the need for organizations to adapt to survive. As an emerging technology, blockchain, which is an open distributed technology grounded upon ledger, allows permanent recording of transaction details in an efficient manner (Lansiti & Karim, 2019).

As a promising technology in this digital era, blockchain is grounded upon five fundamental principles as follows: 1) distributed database that allows direct access to all parties on its transaction history and each party could also verify the records, 2) direct communication and peer-to-peer transmission, 3) transparent transactions but user can opt to stay anonymous and private, 4) unamendable transaction recording, and 5) computational logic that allows incorporation of transaction comprising computational logic and programs (Lansiti & Karim, 2019).

Blockchain was initiated with bitcoin use in making payments, and within the last decade, the technology has evolved. Indeed, blockchain technology of bitcoin has been regarded as a vital innovation, because it shows the potential of separating and utilizing some technological base for other interorganizational cooperation. Another vital innovation are smart contracts that ease financial instruments. Additionally, "proof of the stake" through the "proof of work" as the fourth vital innovation, encompasses the mechanism used for blockchain protection. Through this mechanism, the cluster with the highest computing power all in all, makes the decisions. Another important innovation is blockchain scaling that entails a safe scaled blockchain fast-track procedures. As explained by Gupta (2019), blockchain scaling determines the number of firms that is necessary to validate specific dealings and to distribute the tasks efficiently. All these innovations, when applied, can decrease costs.

Blockchain could transform businesses. However, as indicated by Lansiti and Karim (2019), transforming a business is a long process owing to the requirement of comprehensive use of technology, and the regulatory and social coordination. Firms that intend to apply blockchain technology needs to know their internal resources, activities and skills (Tönnissen & Teuteberg, 2020). Firms also need to know what resources they need in applying blockchain (Tönnissen & Teuteberg, 2020). However,

being fairly new, blockchain technology has not been adequately examined, especially with respect to its theoretic roots, methodological range and its analytically grounded work (Frizzo-Barker et al., 2020). This has created a literary gap, which was tackled in this study.

2.2 Theoretical Background

DeLone and McLean (2003) had introduced a model called the D&M IS success model. This model evaluates complex information systems, and allows procedural information and causal dimension to be constructed, distributed and applied, which could affect user. The original D&M model presented by DeLone and McLean in 1992 had six (6) latent variables on the success of information system. These variables are: system quality (SysQ), information quality (InfQ), user satisfaction (USat), use, individual impact and organizational impact. On the other hand, the revised model has one additional variable namely "service quality", while the variables "individual impact" and "organizational impact" were removed and the variable "net benefits" was added as substitute. The revised model has been used at various analytical levels (see: Chou & Hong, 2013; Kharuddin et al., 2015). In some blockchain studies, this model has been used in evaluating the impact of blockchain systems usage on organizations, particularly in terms of performance. In most of these studies, this model was used in the evaluation of blockchain success. However, as reported (see: Ifinedo et al., 2010; Almazan et al., 2017), the success of blockchain was not examined at the organizational level.

2.3 Hypothesis Formulation and Research Model

The success factors of IS success model depend on the character of the system and the analysis level of a given study (DeLone & McLean, 2016). In this study, the model was used as the theoretical model (see Fig. 1) comprising seven research hypotheses. Organ (1977) was among those reporting the impact of user satisfaction on performance, which means that the increase in the satisfaction of sales staff will make them more willing to enrich their skills, resulting in more efficient sales. In examining user satisfaction and job performance, Jaworski and Kohli (1991) reported a positive relationship between both. Furthermore, user satisfaction has impact on personal response, and pertinently, Seashore and Taber (1975) found significant connection between user satisfaction and performance. As user satisfaction affects individual performance, the satisfaction of blockchain user is expected to have great impact on performance of user (see: Al-Jabri & Roztocki, 2015; Ifinedo & Olsen, 2015). Therefore:

H_1: *User satisfaction impacts Blockchain adoption success, positively.*

DeLone and McLean (2003) elaborated the concept of InfQ as the semantic quality of outputs. Meanwhile, the outputs are resultants of IS. Within the viewpoint of user, InfQ can be understood as data corresponding to their needs and desires. In their D&M model, DeLone and McLean (2003) showed that InfQ is expected to have a direct impact on the satisfaction of blockchain user. In InfQ evaluation within blockchain setting, information accurateness, information understandability, information distribution aptness and the worth of information linked to decision-making, were constructed and also tested (see: Lin et al., 2006; Chou & Hong, 2013). Furthermore, user will feel more satisfied when user is sure that the information is inclusive, accurate, dependable, revised, pertinent and presented using a format that is simple to understand (DeLone & McLean, 2016; Ouiddad et al., 2021). As such, the hypothesis below was proposed:

H_2: *Information quality impacts User satisfaction, positively.*

System quality (SysQ) can make system usage more efficient, particularly when user is performing certain tasks and during system settings optimization. A sound SysQ imparts user with better experience while also reinforcing user actions. Measurement of SysQ utilizes perceptual measures that are denoted by flexibility, reliability, quick responses from the system, as well as ease of use (Rai et al., 2002; DeLone & McLean, 2003; Lin et al., 2006). Dependent on the specific Blockchain domain, SysQ is evident through global system performance. Additionally, global system performance is quantifiable through measurement of perceptions of individual on usage and satisfaction (see: Gorla et al., 2010; Chou & Hong, 2013). System quality gives user three main attributes of system performance that affect user satisfaction namely, flexibility, reliability and ease of use (DeLone & McLean, 1992). Improvement of system can increase user satisfaction, as reported in some past studies (e.g., Costa et al., 2020; Shim & Jo, 2020). Thus:

H_3: *System quality impacts User satisfaction, positively.*

Access to or use of a system may appear difficult to Blockchain User s, and so, SerQ should be used as a major indicator to provide assurance of bugs issues resolution, while also providing assistance and support to users who face technical difficulties. A service that is well designed will increase satisfaction of user (USat) (Pitt et al., 1995; Petter et al., 2008). In the use of blockchain, Chou and Hong (2013) and Ifinedo et al. (2010) reported positive correlation between service quality and user satisfaction. DeLone and McLean (2003), in their revised model, suggested that providing user with problem with timely solution and meeting both their interests and their needs, would affect user satisfaction. Additionally, significant effect of service quality on user satisfaction has been documented in several studies including Chou and Hong (2013), Hsu et al. (2012), and Rana et al. (2015). Hence:

H_4: *Service quality impacts User satisfaction, positively.*

Ease of use in technology usage concerns the level to which technology usage is without much exertion (Davis et al., 1989). Ease of use can also be perceived as a belief embraced by user that a technology is easy to use. When there is alternative, a fully or partially complex technology or system is likely to be abandoned by potential user. Notably, under purposeful settings, it is not easy to review technology usage of technology operator (Abbas, 2016; Al-Sherideh & Ismail, 2020). Hence:

H_5: *Ease of use impacts User satisfaction, positively.*

Past findings were demonstrating the potential of ease of use in affecting the success of blockchain implementation, but, owing to the complexity of blockchain software, it is necessary for staff of firm to learn this new methods and tools of work (blockchain). As stated by Nah et al. (2007), supporting organizational towards open communications can ease organizational learning process, facilitating the successful implementation of blockchain system owing to improved rapport and enhanced communication between blockchain ideas and users. As such:

H_6: *Ease of use impacts Blockchain adoption success, positively.*

Significant mediating impact of user satisfaction has been documented in studies including Zhu et al. (2010) and Masa'deh et al. (2014). For instance, Zhu et al. (2010) reported that user satisfaction somewhat mediated the link between participation through ease of use and job performance. The authors further reported partial mediation of job performance, and also a direct connection between participation and user satisfaction, that is, a mediating relationship was found with user satisfaction.

H_7: *User satisfaction mediates the relationship between Ease of use and Blockchain adoption success.*

3. Research Methodology

This study was carried out in Jordan. Jordan is a suitable study location since the unearthing of diamonds and gold has led to the country's economic transformation. The financial system of Jordan also was transformed by the unearthing of these commodities. The survey was conducted in Jordan and included companies listed in the country's business directory. Choosing companies from this source enables for generalization of results because the companies chosen represent the larger business community.

In the operationalization of the study constructs, the employed measures were adapted from past relevant works. In order to fit with the study context, the scale measures were rephrased. The five-point Likert scale (1 = "strongly disagree" to 5 = "strongly agree") was used to measure the items. Four items from Nelson et al. (2005) were used to evaluate system quality. Five items adapted from Torres and Sidorova (2019) and Nelson et al. (2005) were used in measuring information quality. Five items adapted from Petter et al. (2008) were used in service quality measurement. Five items adapted from Harr et al. (2019) were used in evaluating user satisfaction. In addition, blockchain adoption success was assessed through five items from Sabherwal and Kirs (1994). Moreover, ease of use was assessed through six items from Davis et al. (1989).

The online survey started at the end of May 2024. A total of 600 potential respondents were randomly selected and invited to participate in the survey. Ninety-three (93) completed questionnaires were returned. Follow-up calls and online reminders were given to the remaining targeted respondents, resulting in the research team receiving an additional 300 completed surveys by early September 2024. Overall, 393 responses were collected; these were used for data analysis. The demographic characteristics of the study respondents are provided in the following Table 1.

3.1 Data Analysis Procedure

The procedure for data analysis was conducted using AMOS software to ensure a comprehensive and robust examination of the relationships among variables. The process began with data screening and cleaning to address missing values, outliers, and inconsistencies. Descriptive statistics were calculated to summarize respondent characteristics and variable distributions. Normality was assessed using skewness and kurtosis values. For reliability and convergent validity, they were determined through Cronbach's alpha (α), Composite Reliability (CR), and Average Variance Extracted (AVE). Discriminant validity was ascertained using the Fornell-Larcker criterion. This was to make sure that the square root of AVE of every construct was greater than its correlations with other constructs. Probable common method bias (CMB) was determined based on Harman's single-factor test, confirming that a single factor illuminated less than 50% of the variance. Structural Equation Modeling (SEM) was conducted in AMOS for the testing of the relationships hypothesized in this study, allowing simultaneous evaluation of multiple paths. Path coefficients, standard errors, critical ratios (C.R.), and p-values were used to assess the significance of relationships. Additionally, mediation analysis was executed in AMOS in the testing of the mediating impact of the construct of User Satisfaction (US) on the relationship between Ease of Use (EU) and Blockchain Adoption Success (BAS), focusing on the indirect effects and their significance.

4. Results

4.1 Characteristics of the Study Respondents

Table 1 display the demographic information of the participants.

Table 1
Demographic profile of the participants (n=393).

Variable	Category	Frequency	Percent
Gender	Female	121	30.8
	Male	272	69.2
Age	From 30 to 40 years old	35	8.9
	From 40 to 50 years old	9	2.3
	Less than 30 years old	349	88.8
Education	Bachelor	250	63.6
	Diploma or less	106	27.0
	Master	19	4.8
	PhD	18	4.6
Position level	Executive Management	144	36.6
	Middle Management	123	31.3
	Operational Management	126	32.1

Table 1 provides a clear demographic overview of the respondents, highlighting key characteristics such as gender, age, education, and position level. It reveals a gender imbalance, with males comprising a significant majority (69.2%) compared to females (30.8%). The age distribution indicates that the majority of participants (88.8%) were under 30 years old, with relatively few falling into the 30-40 (8.9%) and 40-50 (2.3%) age brackets. In terms of education, most respondents held a bachelor's degree (63.6%), while a smaller percentage possessed a diploma or less (27.0%), and only a minority had attained higher qualifications such as a master's (4.8%) or PhD (4.6%). Regarding position levels, there is a fairly balanced distribution across the categories, with a slight majority in executive management (36.6%), followed by operational management (32.1%) and middle management (31.3%).

4.2 Measurement Model: Reliability and validity test

Table 2 presents the reliability and convergent validity indices for six constructs: System Quality (SQ), Information Quality (IQ), Service Quality (SERQ), Ease of Use (EU), User Satisfaction (US), and Blockchain Adoption Success (BAS). The outer loadings for each item indicate strong relationships with their respective constructs, with the range between 0.617 and 0.934. Cronbach's alpha values, which measure internal consistency, are all larger than the 0.7 threshold, with the highest being 0.905 for User Satisfaction, suggesting good reliability across all constructs. Composite Reliability (CR) values also surpass the recommended value of 0.7. This demonstrates strong internal consistency. Additionally, the values of Average Variance Extracted (AVE) are all above 0.5 for each construct, confirming tolerable convergent validity (Cheung et al., 2024). The attained results demonstrate that the study's measurement model exhibits both reliable and valid characteristics, making it suitable for further analysis.

Table 2
Reliability and convergence validity indices.

Variables	Items	Outer loadings	Cronbach's α	CR	AVE
System Quality	SQ4	0.817	0.857	0.600	0.856
	SQ3	0.756			
	SQ2	0.687			
	SQ1	0.83			
Information Quality	IQ5	0.634	0.82	0.610	0.825
	IQ4	0.617			
	IQ3	0.794			
	IQ2	0.739			
	IQ1	0.694			
Service Quality	SERQ5	0.828	0.900	0.798	0.898
	SERQ4	0.804			
	SERQ3	0.774			
	SERQ2	0.823			
	SERQ1	0.764			
Ease of Use	EU5	0.728	0.872	0.747	0.881
	EU4	0.798			
	EU3	0.719			
	EU2	0.797			
	EU1	0.819			
User Satisfaction	US1	0.867	0.905	0.719	0.911
	US2	0.934			
	US3	0.84			
	US4	0.74			
Blockchain Adoption Success	BAS1	0.812	0.880	0.743	0.879
	BAS2	0.735			
	BAS3	0.822			
	BAS4	0.673			
	BAS5	0.802			
Model Fitness	RMSEA=0.237; RMR=0.133; GFI= 0.486; CFI= 0.539				

Table 3 illustrates the discriminant validity of the variables, showing the square root of the Average Variance Extracted (AVE) for constructs along the diagonal and the links between constructs off-diagonal. Discriminant validity can be affirmed if the AVE square root for all constructs is higher in comparison to the correlations between each of the constructs and other constructs.

Table 3
Discriminant validity of variables.

	SQ	IQ	SERQ	EU	US	BAS
SQ	0.733					
IQ	0.885**	0.681				
SERQ	0.844**	0.832**	0.806			
EU	0.933**	0.891**	0.845**	0.776		
US	0.759**	0.808**	0.757**	0.780**	0.828	
BAS	0.919**	0.898**	0.828**	0.889**	0.756**	0.773

**Significant at a significance level of 0.01.

In the above table, the diagonal values represent each construct's AVE's square root, while the off-diagonal values are the correlations between the constructs. All correlations between constructs are below the matching diagonal values. This shows that the constructs are all different.

4.3 Normality Analysis

The results in Table 4 indicate moderate variability across the six constructs, with mean values ranging from 2.624 (Service Quality) to 3.113 (User Satisfaction) and standard deviations from 0.983 (System Quality) to 1.145 (User Satisfaction). Skewness values, ranging from -0.274 (User Satisfaction) to 0.239 (Service Quality), fall within the acceptable range of -1 to +1, suggesting no significant asymmetry. Similarly, kurtosis values, ranging from -1.143 (System Quality) to -0.548 (Information Quality), indicate distributions with flatter peaks than a normal curve but remain within tolerable limits for normality. These metrics imply that the data is approximately symmetric and lacks extreme deviations. According to normality criteria, skewness and kurtosis values between -1 and +1 are considered acceptable, supporting the normality assumption (Hair et al., 2022).

Table 4
Descriptive Statistics and Normality Analysis of Constructs.

Construct	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
				Statistic	Std. Error	Statistic	Std. Error
System quality	2.656	0.983	0.966	0.177	0.123	-1.143	0.246
Information quality	2.863	1.006	1.011	0.072	0.123	-0.548	0.246
Service quality	2.624	0.994	0.988	0.239	0.123	-1.022	0.246
Ease of use	2.775	1.022	1.045	0.140	0.123	-1.139	0.246
User satisfaction	3.113	1.145	1.310	-0.274	0.123	-0.786	0.246
Blockchain adoption success	2.782	1.021	1.042	0.198	0.123	-1.007	0.246

4.4 Common Method Bias (CMB)

An analysis using Harman's single factor was conducted with 28 items from the scale across six constructs: information quality, system quality, service quality, ease of use, user satisfaction, satisfaction, and blockchain adoption success. A variance of 59.6% from a single factor in the Harman's single-factor test was observed from factor analysis which indicates a probability of common method bias (CMB) in the study data, as it is greater than the generally recognized threshold of 50%.

4.5 Structural Model: Regression Weights Analysis

In this study, a structural model was developed using AMOS software, as displayed in Fig. 1. The significance of the hypotheses was evaluated based on p-values and T-values. Hypotheses were considered significant statistically if the p-value was lower than 0.05 or the T-value exceeded 1.96. The hypothesis testing results can be viewed in Table 5. The hypothesis testing results for factors influencing Blockchain Adoption Success (BAS) reveal several significant findings. User Satisfaction (US) was hypothesized to positively affect BAS (H1); however, the relationship was not statistically significant (path estimate = -0.055, p = 0.253), indicating that H1 was not supported. Information Quality (IQ) showed a significant but negative impact on US (H2), with a path estimate of -0.961 and p = 0.04, supporting the hypothesis despite the unexpected direction of the relationship. System Quality (SQ) demonstrated a strong positive impact on US (H3), with a path estimate of 1.015 and a highly significant p-value (<0.001), supporting H3. Service Quality (SERQ) did not significantly impact US (H4), as the path estimate (-0.003) and p-value (0.993) suggest no relationship, resulting in H4 not being supported. Ease of Use (EU) showed a significant positive effect on US (H5) with a path estimate of 1.057 and p = 0.003, as well as a strong positive impact on BAS (H6) with a path estimate of 1.398 and p < 0.001, supporting both hypotheses. However, US did not mediate the relationship between EU and BAS (H7), as the path estimate (-0.058) and p-value (0.471) were not significant, leading to H7 not being supported.

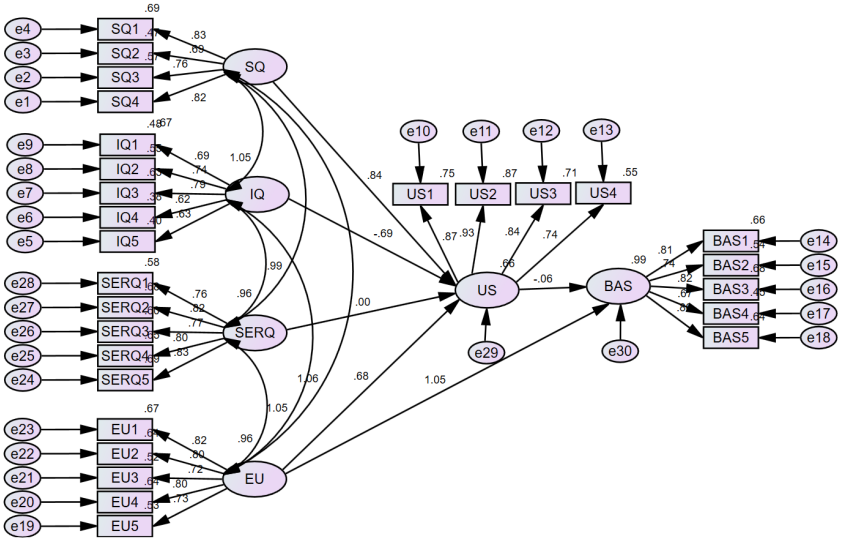

Fig. 1. The structural model developed for the study.

Table 5
Hypothesis testing results.

Hypothesis	Path	Estimate	S.E.	C.R.	P-value	Result
H_1	User satisfaction (US) impacts Blockchain adoption success (BAS), positively.	-0.055	0.048	-1.144	0.253	Not Supported
H_2	Information quality (IQ) impacts User satisfaction (US), positively.	-0.961	0.468	-2.053	0.04*	Supported
H_3	System quality (SQ) impacts User satisfaction (US), positively.	1.015	0.304	3.34	<0.001**	Supported
H_4	Service quality (SERQ) impacts user satisfaction (US), positively.	-0.003	0.286	-0.009	0.993	Not supported
H_5	Ease of use (EU) impacts user satisfaction (US), positively.	1.057	0.354	2.989	0.003**	Supported
H_6	Ease of use (EU) impacts Blockchain adoption success (BAS), positively.	1.398	0.104	13.388	<0.001**	Supported
H_7	User satisfaction (US) mediates the relationship between ease of use and Blockchain adoption success (BAS)	-0.058	0.104	-	0.471	Not Supported

* and ** refer to p-value is significant at significance level of 0.05 and 0.01, respectively.

5. Discussion and Conclusion

In essence, this study found no positive impact of User satisfaction on Blockchain success, denoting no support for H1. Ease of use positively impacted Blockchain success, demonstrating that the ease of use of Blockchain increases user trust, and that it was effortless, fast and cost effective to use the system, thus H6 was supported. Ease of use and User satisfaction were positively linked. Additionally, perceived ease of use towards Blockchain makes users more familiar with the technology, especially concerning system's input and output. This is particularly relevant to users with rather basic knowledge on the systems, thus H5 was supported. Results demonstrate the positive effect of information quality on User satisfaction, lending support to H2. Al-Okaily et al. (2021a) relevantly mentioned that information that is correct, inclusive, timely, relevant and reliable would increase user satisfaction towards their performance. Results show positive and significant impact of system quality on User satisfaction, implying support to H3. Similarly, Al-Okaily et al. (2021b) and Seddon (1997) mentioned the improved performance of users owing to system quality. System quality increases productivity of users and allows them to complete their tasks faster, leading to increased satisfaction. In large-scale blockchain rises, user satisfaction was found to result in increased performance across all organizational levels. Results show no mediation of User satisfaction in the relationship between ease of use and blockchain success, and thus, H7 was not supported. Also, there was no positive linkage between user quality and user satisfaction, and thus, H4 was not supported. Lastly, decision making of blockchain users is facilitated by technical and analytical skills. These skills speed up business processes and task accomplishment.

In conclusion, the present study highlights the pivotal factors affecting Blockchain Adoption Success (BAS) within the examined framework. Significant direct effects were observed for Ease of Use (EU) and System Quality (SQ) on User Satisfaction (US), and EU demonstrated a robust positive impact on BAS. Information Quality (IQ) also showed a significant, albeit negative, effect on the US, indicating complexities in its relationship with user satisfaction. However, neither Service Quality (SERQ) nor US significantly influenced BAS, and US did not mediate the relationship between EU and BAS. Such outcomes emphasize the critical importance of enhancing system usability, functionality, and perceived ease of use to foster successful blockchain adoption, while also suggesting the need for further exploration of the roles of user satisfaction and service quality in this context. Moreover, this study brought forth a new conceptual framework comprising blockchain technology in combination with PMIS. This framework paves the way for future empirical studies. It also allows exploration of certain mechanisms for blockchain to increase the quality of information, and its ensuing impact on learning competences. This study suggests the scrutiny of the long-term effects of blockchain adoption in different circumstances project management.

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