

Original Research

The Pattern of Blockchain Technology Deployment Requirements in the Developing Accounting Industry

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Abstract

In the accounting position, there has been a great deal of spotlight on the utilization of blockchain innovation, particularly in developing countries, where apparently remarkable assumptions ought to be acknowledged in the near future. The objective of this study is to recognize the prerequisites that should be met for the effective execution of blockchain innovation in developing nations. Our study was directed with regard to Iran, a developing nation. A qualitative research method (thematic method) was employed for this study, with the statistical population comprising blockchain, information technology, and accounting specialists in Iran. By using purposeful and snowball sampling techniques, we collected a total of 20 samples. We conducted semi-structured interviews to gather data for later analysis. The result of this study revealed that IT infrastructure, institutional, social, strategic, and organizational requirements are all crucial prerequisites for the successful deployment of blockchain technology in the accounting industry in developing countries. The study offers a blockchain implementation roadmap for the accounting industry.

Keywords: Accounting industry, blockchain, developing countries, information technology.

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Introduction

Data innovation offices have recently become increasingly important (Kale, Gimekar, Tamboli, Patil, & Pawar, 2023). As one of the new advancements in data innovation, blockchain is no exception (Zhang, Shi, Pan, 2022). Today, we see the utilization and development of this innovation in different ventures, for example, in monetary and bookkeeping-related industries (Tran, 2022). Blockchain is an innovation that records information through a framework that cannot be changed or replicated (Liang, Ruan, Xu, & Liu, 2022). It has been utilized for quite a while (Kim, Park, & Kim, 2022). Blockchain is a carefully designed, straightforward, and secure circulated record innovation that can change the bookkeeping business (Supriadi, Harjanti, Suprihandari, & et al., 2020).

The innovation is excellent for recording monetary exchanges since it decreases extortion and mistakes. This innovation can diminish costs and provide more straightforwardness and security in accounting (Akram, 2017). It likewise empowers quicker and more effective exchanges and constant examination. An investigation discovered that blockchain innovation could diminish monetary administration framework costs by US\$15–20 billion annually by 2022 (Shahi, 2020). Moreover, it disposes of Manual record keeping, considering more accurate and advanced records (Rahman, Kabir, Ahmed, & et al., 2020). Additionally, blockchain could save the accounting business up to \$100 billion annually by 2025 (Hakim, Toledo, & Laksmi, 2022). Accordingly, due to the importance of blockchain innovation in the accounting business, it is necessary to constantly pay attention to the essentials for the foundation of reference innovation (Hakim & Bahari, 2021). With the aim that it may be done correctly. However, developing countries facing banning conditions face different requirements for blockchain foundations in the accounting business (Pandey & Gilmour, 2023). Focusing on countries like Iran can help organizers and strategy makers understand the mentioned innovations. The majority of studies on identifying the necessary conditions for blockchain adoption in the accounting industry have concentrated on industrialized and developed nations (Francisco & Swanson, 2018; Kokina, Mancha, & Pachamanova, 2017; Singh, Haque, Kaphle & et al., 2021). A limited amount of blockchain prerequisite study has been conducted in developing countries. (Kumar, Srivastava, & Singh, 2022). Also, they have not considered all the parts of blockchain prerequisites in developing countries like Asia with limitations. Therefore, in this way, like any emerging innovation, blockchain additionally requires prerequisites for its use and foundation (Cornea, 2022). Paying attention to these requirements can stimulate a better and faster organization of the mentioned innovations. Also, this issue is more evident in non-industrial countries like Iran with social restrictions (sanctions). Also, considering the need of the day to use the advancements of Propulsion, this study aims to understand the needs of blockchain in accounting with financial verification in countries. The ongoing review aims to fill the gap in the literature by exploring the critical factors for the successful adoption of blockchain technology in the accounting industry in developing countries, particularly Iran. The remainder of this work is structured as follows: Section 2 reviews prior relevant reviews. Section 3 displays the study methodology's structure regarding data collection and analysis methodologies. In Section 4 of our report, we present findings that clarify the classifications we have made. Section 5 not only compares the findings of our review to relevant literature but also suggests some theoretical implications. Lastly, in Section 6,

we conclude our study by acknowledging its limitations and proposing some areas for further research.

Theoretical background

In this section, according to Table 1, several studies will be reviewed in the field of blockchain requirements in the accounting industry. In a study conducted in 2021 by Betül Şeyma Alkan, the researchers aimed to use blockchain technology in accounting and financing information systems and tax systems. This study talks about how blockchain innovation functions, its fundamental qualities, and how it could improve bookkeeping and monetary systems' proficiency, straightforwardness, and security. This study found that increased transparency, audibility, and real-time tracking of transactions were beneficial and challenging in Turkey.

In a 2022 study by Al-Zaqeba, Jarah, Ineizeh, & et al, by evaluating the impacts of blockchain quality and managers' bookkeeping procedures, the researchers hoped to explore the possible influence of blockchain innovation on store network abilities. To do this, the designers ran a comprehensive written survey, revealing that blockchain innovation will likely irritate production network administrators. However, they point out that blockchain innovation's full potential will not be achieved until board and accounting standards are updated to take advantage of this new invention. In a 2020 study by Gupta, Shukla, Rao, & et al., researchers aimed to investigate a framework for financial auditing using blockchain technology and identity-based cryptography. In this research, which refers to Dubai, the results showed that blockchain technology and identity-based cryptography could improve financial auditing significantly after challenges such as the non-standard security of the blockchain network and the scalability of blockchain networks.

In a 2019 study by Gurtu & Johny, researchers aimed to provide a comprehensive literature review of blockchain technology. Researchers also reviewed its potential implications for supply chain management. According to this research conducted in India, blockchain technology is rapidly penetrating many industries. It has tremendous potential to eliminate intermediaries and make SCM more efficient. In a study conducted in 2022 by Bellucci, Cesa Bianchi, & Manetti, the researchers aimed to perform a methodical examination of the present academic status of the investigation into blockchain for accounting, scrutinize how blockchain will revolutionize accounting and business practices, and recognize forthcoming research tendencies linked to blockchain for accounting.

Table 1. Theoretical background

Requirement of blockchain in accounting	Result	Year	Developed country	Reference
Transparency Immutability Auditability	Reduced risk of fraud Improved efficiency Enhanced transparency	2022		(Zhou & Sun, 2022)
Distributed ledger Immutability Transparency	Reduced risk of fraud Improved efficiency Enhanced transparency	2022	+	(Wu & Zhou, 2022)
Data security consensus mechanism Distributed ledger	Increased security Increased transparency Improved efficiency	2018		(Yu, Lin & Tang, 2018)
Security Immutability Scalability Interoperability transparency	Improve security Increase efficiency improving transparency	2016	+	(Brandon, 2016)
There is a need for further research on the technical and organizational challenges of implementing blockchain in accounting	Blockchain has the potential to improve efficiency transparency and security of accounting processes	2016	+	(Bahga & Madiseti, 2016)

Requirement of blockchain in accounting	Result	Year	Developed country	Reference
security Immutability Scalability Interoperability transparency	Increase efficiency improving transparency improving security	2019	+	(Casado-Vara & Corchado, 2019)
Data security Cost saving Data transparency	Increased data security and integrity Increase transparency Reduce costs Improved collaboration	2017		(Dai & Vasarhelyi, 2017)
Data security Data integrity Data transparency	Increased efficiency Reduced risk of fraud Enhanced transparency Improved audit quality	2022	+	(Abdennadher, Grassa, Abdulla & et al., 2021)
Data security Data integrity Data transparency	Increased efficiency Reduced risk of fraud Enhanced transparency Improved audit quality	2021		(Perera & Abeygunasekera, 2022)
Data security Data integrity Data transparency	Improved tax compliance Increased efficiency Reduced risk of fraud Enhanced transparency	2021	+	(Grundel, Zhuravleva, Mandroshchenko, & et al., 2021)

So far, studies have yet to be presented to provide a model for accounting industry service requirements. This is with a focus on blockchain facilities. Most studies worldwide focus on blockchain's consequences in the accounting industry. Most of these studies have been conducted in developed countries or address limited aspects of blockchain implementation requirements in the accounting industry. It was created to fill this research gap and pave the way for planning and policymaking. This was done to develop blockchain technology in the accounting industry.

Methodology

This experimental study was conducted using the structuralism paradigm. This study aims to determine blockchain requirements in the accounting industry in developing countries. Providing practical applications and future innovative programs also illustrates the use of inductive thinking. Also, the paradigm of structuralism allows us to consider different parts of the accounting system and their cooperation with blockchain innovation. In addition, data analysis was done based on Braun and Clark's six-step work technique (Braun & Clarke, 2006). It is like viewing a jigsaw puzzle with many components. Examining the fascinating pieces, their relationships, and how they interact can provide more excellent knowledge of how they work together. It is simpler to grasp the situation if the issue is seen holistically. Consequently, better coordination and potential arrangements will be possible. It can be used in different areas, for example, decisive reasoning, direction, goal setting, and imaginative thinking.

Data collection and participants

The data gathering tools in this study to analyze blockchain requirements in accounting were semi-structured interviews with accounting, blockchain, and information technology professionals surveyed in Iran, a developing country. They had a master's or doctorate in relevant subjects. They had done a study in the field of information technology in finance, or blockchain in finance. In addition, they had employment experience in domains linked to information technology and blockchain. Finance had at least four years of experience. Table 2 shows the demographic information of interview participants.

Table 2. demographic information about participants

Participant	Sector	Educational level	Position of the interviewer	Experience of the interviewer
P1	Tax accounting	PhD	Faculty member	7
P2	Information technology	PhD	Government	5
P3	Accountant	MSc	Accountant	8
P4	Information technology	PhD	IT Security Engineer	6
P5	Internal auditing	MSc	Government	4
P6	Accountant	PhD	Faculty member	9
P7	Information technology	PhD	IT manager	7

Participant	Sector	Educational level	Position of the interviewer	Experience of the interviewer
P8	Government	PhD	Software engineer	5-7
P9	Financial analysis	MSc	Bank	11
P10	Management Accounting	PhD	Faculty member	13
P11	Healthcare Accounting	MSc	Hospital	4-6
P12	Government	PhD	Blockchain Developer	5
P13	Government	MSc	Blockchain Consultant	4
P14	Banking Accounting	MSc	Accountant	4-5
P15	Government	PhD	Software Engineer	12
P16	Insurance accounting	PhD	Faculty member	14
P17	Information technology	PhD	IT Support Analyst	9
P18	Government Accounting	PhD	Faculty member	14
P19	Information technology	MSc	Blockchain Developer	4-6
P20	Management Accounting	PhD	Faculty member	12

After evaluating related studies and sources, interview questions were ready in the main stage. Then, utilizing the semi-structured interviews. In these semi-structured interviews, specialists were furnished with questions connected with blockchain impacts in bookkeeping.

- What are the advantages and disadvantages of this technology?
- What are the challenges and practical solutions for implementing blockchain in the accounting industry?
- What are the prerequisites for blockchain deployment in Iran's accounting industry?
- Can Special economic conditions, such as sanctions, create different requirements for blockchains in the accounting industry?

Data analysis

By analyzing the data obtained from the interviews, the patterns, requirements, and needs for blockchain implementation in the accounting industry in developing countries were identified. These analyses were conducted qualitatively, and the extracted results were presented using thematic analysis methods (Braun & Clark, 2006).

Finally, by combining qualitative data obtained from interviews and analysis, an operational description of the requirements of the blockchain revolution in accounting countries was presented. This operational description includes key concepts, implementation solutions, and requirements necessary to implement this revolution in accounting. By utilizing purposeful and snowball sampling methods, the number of samples for our qualitative study was not determined, and the interviews will continue until the categories are saturated. However, we reached category saturation when we reached the 18th interview, and no new category was found. Therefore, we conducted two more interviews to ensure the work was done correctly. This resulted in a total of twenty interviews. Maxqda20 software was used to facilitate data analysis.

Lastly, we applied Lincoln and Cuba's (1985) qualitative study validation criteria. Credibility, reliability, transferability, and confirmability are among these characteristics. According to Table 3, the introduced criteria validated the validity of the applied qualitative technique.

Table 3. Validation of the qualitative method

Criterion	Activities
Credibility	Setting aside enough time to read and comprehend the material Using the peer review approach Assisting the researcher in the field of information technology management
Dependability	There were two groups of researchers in the study. The first researcher coded once, while the second oversaw the research implementation procedure and its outcomes.
Transferability	Other developing countries can benefit from the research findings.
Confirmability	The personal viewpoints of the researcher are not allowed to intrude. A researcher from outside the research team reviews the results at the end of the study.

Result

For analysis, we used Braun and Clark's thematic analysis method. Table 4 shows the results of the thematic analysis. The primary codes can be seen in the appendix. The theme analysis is based on Brown and Clark's six steps: In the phase of getting to know the data, first, the available sources, which are the same results obtained from the semi-structured interviews, were reviewed several times to understand the content thoroughly. Then, During the initial coding stage, the hidden patterns of the data, which were attractive and

extractable from the study's point of view and included 85 initial basic theme codes, were discovered from the text of the interviews. In the next step, incomplete or duplicate codes in the interview transcript were removed, and 60 selective codes were obtained. In the next step, the basic codes analyzed in the previous step were categorized and arranged into three comprehensive organizing and central sections. In the last stage, the themes were reviewed and assessed again to define global themes. As a result, in this section, five global themes for requirements were identified, including infrastructure, Institutional, social, strategic, and organizational requirements. The following table and theme network Figure 1 shows the essential, organizing, and global themes to identify blockchain implementation requirements in the accounting industry in different countries.

Table 4. Research findings

Participants	Basic theme	Organizing theme	Global theme
P1,P8,P20,P17,P19,P18,P16	Internet access	Technical equipment is present	Information technology infrastructure requirements
P2, P18,P20,P6,P8	Use virtual private networks		
P8,P1,P11,P19	Hardware and equipment		
P3,P9,P16,P20,P8	Software and equipment		
P8,P5,P17	Data storage equipment		
P19,P12,P17,P18,P8	Rapid information processing equipment		
P18,P4,P8	Authentication and encryption	Establish security	
P10,P14,P8,P18,P15	Security of online systems		
P3,P18,P15,,P13,P8,P6	Transaction and information security		
P1,P11,P10,P20,P8	Privacy protection		
P8,P17,P12,P20,P18	Secure and cloud communication network		
P8,P1,P16,P10,P19	Electronic signature		
P17,P10,P11,P8,P19,P18,P20	Artificial intelligence		

Participants	Basic theme	Organizing theme	Global theme
	algorithms for error detection		
P6,P19,P12,P14,P15	Complying with accounting principles and standards	Compilation of standards	Institutional requirements
P7,P11,P15,P18	Compliance with the principles and standards of blockchain interactions		
P8,P10,P15	Compilation of updated principles and standards		
P13,P17,P6,P15	Development of financial transaction standards		
P20,P15	Drafting amendments to financial and accounting laws	Compilation of rules and regulations	
P18,P20,P11,P16,P15	Amendment of e-commerce laws		
P15,P20,P18	Realization of information technology government		
P15,P19,P17,P10	Data protection laws		
P10,P15,P20,P18,P17,P13	The legal status of contracts concluded on the blockchain platform		
P11,P20,P18,P17,P13	Training of service providers	Education and Awareness	
P18,P19,P20,P13	Training and informing users		

Participants	Basic theme	Organizing theme	Global theme
P13,P19	Consolidation of existing concepts		Social requirement
P16,P14,P9,P17,P13	Transparency of the work steps		
P19,P4,P5,P13,P15	International Experts' Cooperation	Cooperation	
P13,P14,P6,P19,P20	Determine responsibilities transparently		
P1,P20,P17,P13	Sharing knowledge and experiences		
P14,P18,P13,P15	Existence of an environment that supports cooperation changes between employees		
P20,P18,P13	Presentation of joint projects		
P15,P17,P16,P13,P5	Using other countries' experiences		
P17,P13	Academic participation		
P3,P15,P17	Confidence in the new service style		
P17,P18,P20,P3,P11	Investment in infrastructure	investment	Strategic requirements
P11,P20,P18,P17	Investment in education		
P12,P20,P17,P5,P11	Investment in security		
P17,P18,P20,P8,P7,P11,P2	Providing cryptocurrency		
P6,P19,P14,P9,P11,P18,P20	Investment in attracting cooperation		

Participants	Basic theme	Organizing theme	Global theme	
P4,P17,P11,P7,P19	The need for blockchain feasibility	Research and development		
P18, P11,P14,P17	Investigation and research into different aspects of the problem			
P11,P14,P17	Conducting prospective research			
P8, P6,P17,P11,P12,P18	Investigation and research to remove obstacles and limitations			
P13,P10,P14,P19,P16,P11	The body overseeing services and transactions	Supervision		
P14,P11,P17	Independent experts in each unit related to the blockchain field			
P15, P11,P18,P11,P20	An authoritative body to confirm activities			
P1, P20,P4,P5,P3,P17,P11	An accurate information recording and monitoring system			
P19,P10,P18,P11,P20	Developing a new strategy	Managerial		Organizational requirements
P5,P20,P3,P15,P17,P9	Alignment of blockchain research perspectives with organizations' mission			

Participants	Basic theme	Organizing theme	Global theme
P18,P10,P20,P9,P15	delegation of authority and responsibilities		
P20, P8,P15,P9,P2,P19,P17	change of organizational structures,		
P9,P18,P19,P6,P7,P1,P13	Creating a cooperation network between different departments		
P14,P19,P7,P6,P15,P9,P20	Development of organizational processes for sending reports		
P20,P4,P8,P9	Integration of internal accounting systems with blockchain	Integration	
P11,P9,P11,P20,P19	Integration and consistency with other information systems		
P16,P17,P18	Integration of the Mohabdar system with the blockchain		

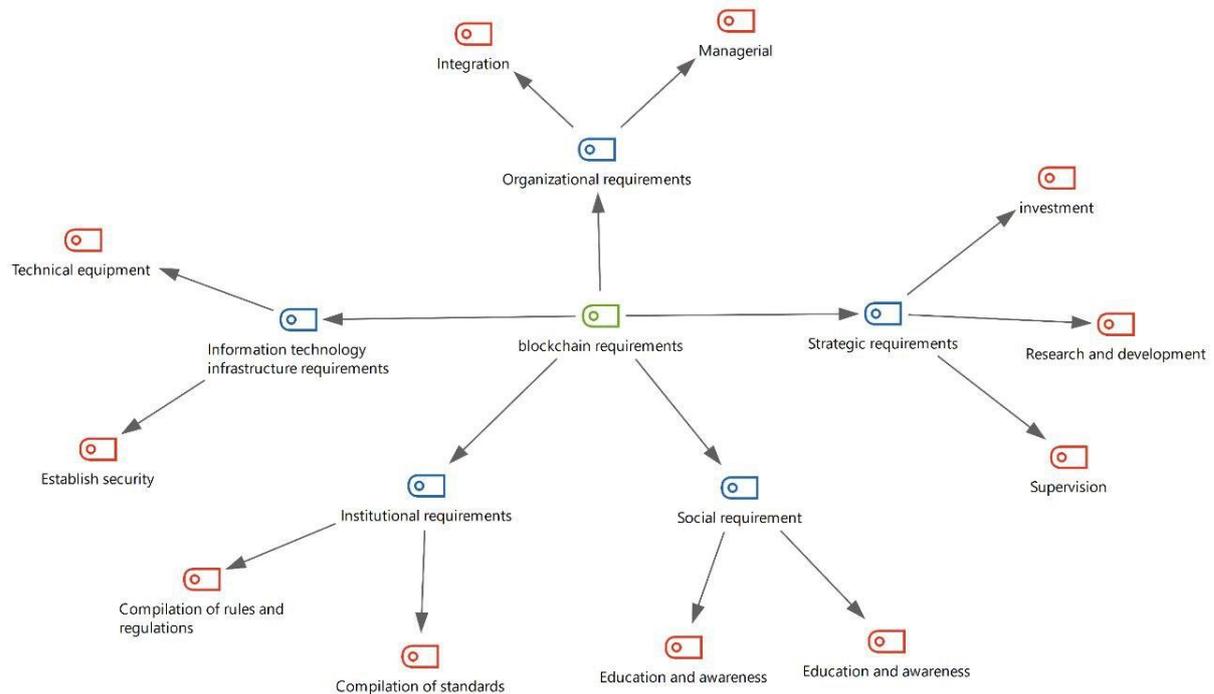


Figure 1. The theme network of blockchain requirements in accounting

The theme network of blockchain requirements in accounting Figure 1 shows the various pieces of a blockchain framework. This innovation, known as a dispersed record, has the capacity to keep exchanges safe and straightforward.

Discussion

In this section, based on the research in the previous section, the results have been analyzed and reviewed. We compared the results obtained with previous studies.

Information Technology Infrastructure Requirements

One of the essential prerequisites for stimulating innovation in developing countries is the arrangement of specialized bases in data and correspondence innovation (Ramanathan, Chacko, & Andrljic, 2022). Due to the prevalence of significant digital divide and limited connectivity in these countries (Solarz & Adamek, 2023), As shown in the 8th session of this review, "Developing countries without reliable internet access and secure networks cannot fully trust blockchain technology." The types of foundation requirements can be divided into two categories: technical requirements, which relate to the equipment and programming expected to implement a framework, and performance requirements, which relate to the methodology and strategies expected to deal with the framework (Plekhanova & Vinogradova, 2020).

Although it is essential to consider the security requirements for acquiring a system separately, it is crucial to understand that technical requirements involve hardware components such as firewalls. Meanwhile, functional requirements concentrate on the

processes and approaches for acquiring the system. For instance, consider client authentication and access control measures (Wu, 2022).

The Institutional Requirements

One of the fundamental issues to focus on to implement and use blockchain in accounting business in non-industrialized countries is to focus on the institutional prerequisites (Alfian, Ritchie, Adrianto, & et al., 2021). This prerequisite type refers to fundamental changes in improving guidelines and core values for innovation. In addition, issues, for example, changes in regulations and guidelines to reflect new management practices, are seen in these organizational prerequisites (Olander, Vanhala, & Hurmelinna-Laukkanen, & et al., 2016). During the 15th meeting, "One of the central questions that we should focus on is to approve the approved regulations and to choose in the context of the transformation of the foundation and coordination issues such as the development of regulations and guidelines." This is because regulations and guidelines must be updated to reflect advanced changes in aid delivery, such as digitization. Also, the foundation must be set to make these improvements accurately and constructively (Sheffield, Jacobs, & Ellis, 2022). In addition, coordination between the various partners involved in the aid transfer process should be arranged to ensure that all parties work together to achieve the ideal outcome. Such an arrangement of guidelines and frameworks does not produce more or less random results (Kandpal, Das, Misra, & et al., 2022). Public authorities must carefully prepare and implement to ensure the new frameworks are adequately regulated. Public authorities must also provide essential assets and prepare officials to implement the new frameworks to ensure a positive outcome. They also need to ensure that the necessary framework is in place to support the new principles. Finally, they must change depending on the situation to ensure the new frameworks are workable and proficient (Borghoff, Pfeiffer, & Rödiger, 2022).

Social Requirements

One of the primary issues to focus on when implementing and using blockchain in accounting businesses in developing countries is to focus on the social prerequisites. This prerequisite type refers to fundamental changes in improving guidelines and core values for innovation (Pugna & Duțescu, 2020). In addition, issues, such as changes in regulations and guidelines to reflect new management practices, are seen in these organizational prerequisites. As stated in the 13th meeting, "Through proper training in the utilization of blockchain technology for financial transfers in institutions, a large number of groups of people can confidently participate in its effective use." This is because regulations and guidelines must be updated to reflect advanced changes in aid delivery, such as digitization. Also, the foundation must be set to make these improvements accurately and constructively (Al-Zaqeba & Jarah, Ineizeh & et al., 2022).

Furthermore, coordination among the many partners participating in the assistance transfer process should be established to ensure that all parties work together to obtain the best possible result. Such an arrangement of guidelines and frameworks does not produce more or less random results. This requires careful preparation and implementation by public authorities to ensure that the new frameworks are regulated and work properly (Uduji, 2016). Public authorities must also provide essential assets and

prepare officials to implement the new frameworks to ensure a positive outcome. They also need to ensure that the necessary framework is in place to support the new principles. Finally, they must change depending on the situation to ensure the new frameworks are workable and proficient (Vikhrova, Hradziushka, & Gorlova, 2022).

Strategic Requirements

Another critical requirement for blockchain implementation in the accounting business is the creation of strategic prerequisites. This type refers to the need for significant-level issues, for example, obtaining essential capital and exploring and directing innovative work practices. As mentioned at the 11th meeting, "one of our problems is legally presenting digital forms of money." The essential requirements of countries like Iran in agriculture are considered extremely basic. These requirements can be divided into three categories: Management of subsidies for innovative works (Sanjari & Tabesh, 2014).

Research and development financing forms the main category. This requires financing from private and public sources, including investments and government awards (Olvido & Sanchez, 2018). The next class leads to study and development activities. This includes managing progress interactions and ensuring access to critical assets to perform ideal tasks (Rahardja, Aini, & Maulana, 2021). The third classification is legitimate compatibility. This includes ensuring compliance with relevant regulations and guidelines when conducting cryptocurrency activities. This means ensuring all transactions are routed within the legal system, and all necessary permits are obtained. Likewise, it involves staying alert to legal developments. Additionally, it needs to track all transactions and ensure that this information is secure (Labunska, Serikova, & Sobakar, 2021).

Organizational Requirements

One of the significant requirements for organizations in developing countries is adopting blockchain technology. As service providers, organizations must provide the basis for acceptance of this technology. As stated in the 9th interview, "Organizations in this situation need to change their structures because they have to move towards flexibility. In this way, they can also use the opinions of the employees. The result of this is the reduction of employee resistance." Therefore, organizational requirements can be divided into two general categories: management factors, such as developing an effective strategy. This procedure ought to consider the particular requirements of the association. It should also consider the potential benefits and risks of blockchain technology or changes in organizational structures (Derhachova, Ogynskiy, & Shchemur, 2022). This is to restructure their departments and divisions. For example, they may need to create new departments or divisions to manage blockchain systems. In addition, they may need to merge existing departments that are no longer necessary.

A mix of interior bookkeeping frameworks with blockchain alludes to the most common way of interfacing an association's current bookkeeping frameworks with a blockchain network (Derhachova, et al., 2022). This allows the organization to store its accounting data on the blockchain, which improves accounting security, transparency, and efficiency (Sarwar, Iqbal, Alyas, & et al., 2021).

Additionally, combination and similarity with other data frameworks allude to a blockchain organization's capacity to cooperate with other data frameworks (Malik, Mittal, Mavaluru, & et al., 2023). This includes ERP systems, CRM systems, and supply chain management systems. This permits associations to share information across various frameworks, which can improve their proficiency and adequacy (Chong, 2021). The theoretical validity of the research results can be seen in Table 5.

Table 5. Theoretical validation

Previous studies	Findings			
(Bahga & Madiseti, 2016)	Use virtual private networks	Technical equipment is present	Information technology infrastructure requirements	
	Data storage equipment			
(Zhou & Sun, 2022)	Secure and cloud communication network	Establish security		
	Security of online systems			
(Gupta et al., 2020)	Development of financial transaction standards	Compilation of standards		Institutional requirements
	Complying with accounting principles and standards			
(Yu, Lin, & Tang, 2018)	Data protection laws	Compilation of rules and regulations		
	Realization of information technology government			
(Abdennadher et al, 2021)	Training of service providers	Education and Awareness	Social requirement	
	Consolidation of existing concepts			
(Perera & Abeygunasekera, 2022)	Sharing knowledge and experiences	Cooperation		
	Using other countries' experiences			
(Bellucci et al., 2022)	Investment in infrastructure	Investment	Strategic requirements	
	Investment in education			

Bellucci et al., 2022)	Conducting prospective research	Research and development	Organizational requirements
	The need for blockchain feasibility		
(Zaqeba et al., 2022)	An accurate information recording and monitoring system	Supervision	
	An authoritative body to confirm activities		
(Wu & zhou, 2022)	change of organizational structures,	Managerial	
	delegation of authority and responsibilities		
(Zaqeba et al. 2022)	Integration of internal accounting systems with blockchain	Integration	
	Integration and consistency with other information systems		

Our research has uncovered a need for more attention to technical equipment, security measures, standards, regulations, training, awareness, collaboration, investment, research and development, management, monitoring, integration, and work dimensions. These parts need to be given more attention in past discoveries. Our discoveries have been creative and have added to existing information progress.

Conclusion

In recent years, emphasis has been placed on the necessity of information technology in accounting in developing countries. The demand for it has grown. Based on this, the study aimed to identify the requirements for blockchain in the accounting industry in developing countries. We used a qualitative approach, involving the statistical community of information technology specialists and collecting 20 semi-structured interviews based on purposeful and snowball sampling methods. Thematic analysis was also employed to collect and assess the data. The results showed that information technology must be established in the accounting industry. The study focused on the information technology infrastructure and organizational, social, and strategic requirements to implement the research. The study faced limitations, such as needing more blockchain experts in countries with economic sanctions. According to research findings, the study also found a need for more access to international blockchain information due to economic sanctions.

The following suggestions are made for the following researchers and also for the development of the research path:

- **Understanding the digital divide in developing countries:** Evaluating and designing the implementation of robust security methods. It is like VPN encryption to deal with the challenges of the digital divide between countries. This is done so that they have complete transparency for blockchain use.

- **Investigating Blockchain Solutions for Developing Country:** investigating and analyzing the practical methods of education and increasing transparency at every level of society, as well as promoting the use of blockchain technology in accounting for people and institutions in developing countries, to speed up and increase transparency in work processes, and to eliminate resistance to exploitation, From blockchain to the next stage of acceleration and transparency in work processes It is recommended to conduct research as the next step in studying this field.

- **Security Measures in Governmental Online Services:** The evaluation of governmental information technology initiatives' efficacy entails analyzing governmental websites and online services. This comprehensive analysis necessitates a comparison of the usability, security, and scalability of these digital platforms.

- **Understanding Data Analysis in Education:** To examine educational data to evaluate various investment strategies is known as analysis. Analysis refers to disintegrating something, such as data, into smaller components to gain better comprehension. In the present context, assessing different investment strategies refers to scrutinizing the data to discern which investment plans would yield the highest success.

- **Establishing Regulatory Frameworks for Effective Implementation:** Inquiry into the optimal procedures for international collaboration in blockchain for development reveals that exemplary methodologies encompass the establishment of regulatory frameworks that guarantee the appropriate implementation of blockchain technology, the creation of a milieu that fosters innovation, the cultivation of collaboration among diverse stakeholders, and the promotion of education and training to ensure the correct application of the technology.

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