International Journal of Finance, Accounting and Economics Studies 5(4), 2024, 107-128.
Print ISSN: 2251-645X Online ISSN: 2383-2517

Islamic Azad University
Science and Research Branch
Faculty of Management and Economics

International Journal of Finance, Accounting and Economics Studies
Journal Homepage: https://sanad.iau.ir/journal/ijfaes

Designing a Strategic Model for Blockchain Technology in the Iranian Banking System

Farhad Rezaei [1], Amir Mohammadzadeh[2]*, Mohammadreza Sanaei[3], Mohsen Torabian[4]

[1]Department of Entrepreneurship, Faculty of Management, Qazvin Branch, Islamic Azad University, Qazvin, Iran

*[2]Associate Professor, Department of Management, Faculty of Management, Qazvin Branch, Islamic Azad University, Qazvin, Iran

[3]Department of Information Technology Management, Faculty of Management, Qazvin Branch, Islamic Azad University, Qazvin, Iran

[4]Assistant Professor, Department of Mathematics, Qazvin Branch, Islamic Azad University, Qazvin, Iran

Article History

Submission Date: 2024-04-04
Revised Date: 2024-10-19
Accepted Date: 2024-12-04
Available Online: Winter2024

Keywords:
Technology, Blockchain, BankingSystem, DigitalTransactions

Abstract
This study aims to develop a strategic model for the implementation of blockchain technology within the Iranian banking system. Employing a mixed-methods approach, the research is developmental in purpose, utilizing both qualitative and quantitative data. The qualitative component involved content analysis, while the quantitative component utilized a survey. Participants in the qualitative phase were purposefully selected and consisted of 12 managers, senior employees (with at least 10 years of work experience and a master's degree or higher), and management professors (with at least 10 years of work experience and a doctoral degree or higher). This sample size was determined upon reaching theoretical saturation. In the quantitative phase, the statistical population comprised information technology employees from Sepah Bank in Tehran. A sample size of 127 was determined using the Cochran sampling formula. Data collection for the qualitative phase was conducted through semi-structured interviews, and for the quantitative phase, through a questionnaire derived from the qualitative findings. Data analysis in the qualitative phase employed thematic analysis using MAXQDA software, while the quantitative phase utilized confirmatory factor analysis and structural equation modeling via SmartPLS software. The validity and reliability of the data were confirmed through various methods. Qualitative data analysis yielded 255 codes during open coding, which were subsequently refined to 100 initial codes after removing redundancies. These codes were then categorized into 30 sub-themes and 6 main themes: security and trust, efficiency and cost, transactions and payments, transparency and analysis, innovation and development, and cooperation and interactions.

*Corresponding Author: a.mohamadzadeh@qiau.ac.ir

Introduction

Traditionally, individuals rely on intermediaries, such as banks, to conduct financial transactions. However, blockchain technology enables buyers and sellers (or senders and receivers of digital assets) to transact directly, eliminating the need for a third party. This type of transaction is known as "peer-to-peer." Blockchain facilitates instant transactions on a network without intermediaries, ensuring security and maintaining an immutable record of each transaction. Transactions are recorded chronologically and publicly within the blockchain. Each block can store various forms of information, ranging from personal data to account balances for digital assets like Bitcoin. Data is encapsulated in blocks and linked sequentially, forming the blockchain. The initial implementation of blockchain was accompanied by the introduction of Bitcoin, a cryptocurrency that transparently stores transaction information, accounts, and balances. The emergence of blockchain and Bitcoin has significantly transformed banking systems and databases. A key distinguishing feature of blockchain is its distributed nature, where information is shared among all network participants. Through encryption and data distribution, the risks of hacking, data deletion, and manipulation are substantially mitigated (Min, 2019).

Blockchain technology is a leading emerging technology widely adopted by financial institutions, playing a fundamental role in securing their transactions. In this context, blockchain can act as a trusted third party within the financial system (Arjun & Suprabha, 2020).

Blockchain technology allows for the creation and immutable retrieval of transaction records, safeguarding financial transactions and institutions from fraud. While the existing literature 1on blockchain is growing, it often primarily addresses the demand and supply aspects of its implementation within organizations (Dujak & Sajter, 2019).

The established literature indicates the presence of numerous financial intermediaries within the global financial system (Clark, 2017; Ghosh, 2016; Adrian, Etula, & Muir, 2014). However, the system remains inefficient due to the cost and time associated with these intermediaries. Despite the global financial system processing billions of traditional transactions, the volume of electronic transactions remains comparatively low (Kallugudde, Bhardwaj & Venugopalan, 2020).

Globally, financial institutions are witnessing a rapid increase in electronic transactions, leveraging emerging technologies, including blockchain as an intermediary, to mitigate fraud, reduce transaction costs, and enhance cost-effectiveness (Kakavand, Kost De Sevres & Chilton, 2017). Blockchain technology fosters a secure and neutral financial system, employing a distributed ledger structure accessible only by computers, thus preventing control by a single entity (Pilkington, 2016). Its unique attributes, namely immutability, transparency, and decentralization (Andoni et al., 2019), have led numerous organizations to explore its implementation for enhanced reliability and security (Treiblmaier & Sillaber, 2020). However, blockchain technology faces several challenges, including reputational issues, energy and environmental costs due to its association with cryptocurrencies (DeVries, 2016). Furthermore, its technical limitations include immaturity, lack of interoperability, complexity, scalability constraints, and a shortage of skilled personnel. At the business level, blockchain adoption is hindered by limited awareness across sectors such as banking, pharmaceuticals, education, and finance, coupled with a lack of user experience, training deficiencies, security and privacy concerns, and regulatory uncertainties (Janssen et al., 2020). The strong association with cryptocurrencies, which have been linked to criminal activities, has negatively impacted blockchain's reputation (Joshi, Han, and Wang, 2016). Consequently, this reputational challenge has created hesitancy among businesses regarding blockchain implementation (Lewis, 2018).

Kakavand et al. (2017) assert that the blockchain ledger is shared among multiple cross-distributing firms within the financial system. Their study also indicates that blockchain technology reduces processing time, costs, and barriers to entry by eliminating intermediary agents who traditionally record transactions. Alvseike and Iversen (2017) contend that blockchain technology can efficiently manage the financial system, driving the rapid increase in business interest. Government departments, private agencies, and other organizations are adopting blockchain technologies to enhance efficiency, effectiveness, and financial performance. Even international bodies such as the International Monetary Fund and the World Bank have established blockchain laboratories (Till and Meara, 2017). Azarenkova et al. (2018) further examine the growing adoption of blockchain technology within the financial system, while acknowledging the remaining challenges that could impede its widespread use.

Blockchain is a contemporary technology with the potential to establish a foundation for novel business models (Iansiti and Lakhani, 2017), particularly those that disintermediate actors and prioritize security over performance (Iansiti, 2018). This shift towards less risky business models is impacting various industries (Wang and Kogan, 2018; Kshetri, 2018). For instance, blockchain solutions in the financial industry eliminate the need for intermediaries, enabling direct transactions between business partners (Short, 2018). Furthermore, blockchain technology empowers participants to continuously track assets and conduct independent transactions within a secure, fault-tolerant, resilient, and perpetually available framework. Existing blockchain solutions, such as Moog's VeriPart in the manufacturing sector, enhance security and resilience to foster trust in 3D-printed components. Inspired by these examples and anticipating added business value, numerous organizations are actively exploring blockchain technology as a foundational platform (Iansiti, 2018; Iansiti and Lakhani, 2017). In essence, blockchain technology facilitates the authentication of tradable goods, enables disintermediation, and improves operational efficiency, thus reshaping existing business models and fostering innovation (Nowiński & Kozma, 2017).

In the contemporary technological landscape, numerous sectors are widely adopting blockchain technologies to streamline operations, enhance transparency, and ensure security. A primary concern associated with blockchain technology is the security of online transactions. Due to vulnerabilities in existing channels, confidential information is susceptible to theft through illicit activities (Karame, 2016). Garg et al. (2020) suggest that organizations are hesitant to integrate blockchain due to its perceived immaturity and a lack of understanding regarding its applications. Despite its potential to revolutionize business operations, blockchain technology must address its inherent challenges to facilitate global adoption. While currently prominent in securing financial transactions for banks and financial institutions, blockchain continues to confront various obstacles.

Information technology plays a crucial role in the advancement of diverse industries, notably banking. The progression of IT has catalyzed fundamental transformations in payment and banking systems. The banking industry has experienced significant developments in digital currencies and cryptography, with blockchain technology emerging as a pivotal component. Given blockchain's potential impact on banking, it is essential to analyze its influence on payment systems and the banking sector. While blockchain's applications extend beyond digital currencies, its comprehensive examination, including its strengths, weaknesses, and potential risks, is imperative for the development and modernization of banking and payment systems. Recognizing that blockchain technology poses challenges across various banking domains, institutions must familiarize themselves with emerging threats and opportunities and formulate specific strategies to address them. To embrace new global banking services and facilitate transactions, the development of a strategic model for blockchain technology in banking is necessary.

The absence of research presenting a strategic model for blockchain technology within the Iranian banking system, coupled with the lack of existing frameworks to address future challenges in this domain, underscores the necessity for this study. This research aims to provide clear and concise insights into the implementation of blockchain technology within the Iranian banking system, with the expectation that its findings will benefit the sector.

Based on the aforementioned context, the primary research question is: What constitutes a strategic model for blockchain technology within the Iranian banking system?

Research Background

Dehbaste et al. (2020) conducted a qualitative content analysis (case study of an Iranian mobile phone operator) to develop a blockchain technology-based business model for developing countries. Expert opinions were coded in two domains: business model design and blockchain technology industrialization. Subsequently, the business model categories were tailored based on an analysis of mobile phone industry experts. The study concluded that a mobile phone operator, leveraging a collaborative business model across seven categories, could utilize its access to infrastructure and customer communication network information to capitalize on blockchain technology. This would enable the creation of new value-added services and mitigate the material losses associated with the current traditional business model.

Rezaei and Babazadeh (2020) conducted a study to examine the relationships between effective blockchain indicators and the enhancement of competitiveness within food industries. They identified core indicators pertinent to the food industry, leveraging blockchain technology. Subsequently, employing the fuzzy DEMATEL method, they delineated the structural and causal relationships among eight identified indicators, based on expert opinions. To this end, 950 questionnaires concerning blockchain were distributed to university professors and experts domestically and internationally. From the responses received, only 19 were fully completed. The research findings revealed that traceability and fraud prevention constitute the most influential indicator. Furthermore, food waste prevention exhibited the highest degree of interaction with other indicators, while smart contracts were identified as the most impactful. This study, the first of its kind in Iran, demonstrates the extent to which a robust traceability system within the food industry contributes to the efficiency of other indicators. Blockchain technology offers a means to address traceability challenges while promoting transparency. This research provides impetus for managers and policymakers to harness the benefits of blockchain technology for the establishment of a secure traceability system.

Ranjbar Fallah and Foroughi (2020) conducted a study to analyze the opportunities and threats associated with the regulation of blockchain technology and cryptocurrencies in Iran, utilizing the PEST model. Data collection and analysis involved examining studies, documents, articles, books, and expert opinions. The study population comprised experts and professors from information technology engineering, economics, management, and entrepreneurship disciplines at the University of Tehran, Payam Noor University, Shahid Chamran University of Ahvaz, and the National Defense and Strategic Research University and Institute. A proportional sample of 15 participants was selected. To elucidate the opportunities and threats of this emerging technology, 22 factors were identified (11 opportunities and 11 threats). Data were collected using a semi-structured questionnaire, the validity and reliability of which were established through document evaluation, literature review, and expert consultation. Based on the study's findings and expert consensus, the primary opportunities for regulating blockchain and cryptocurrencies in Iran, according to the PEST model, are, in descending order of priority: economic, political-legal, technological, and socio-cultural. Conversely, the principal threats are, in descending order of priority: economic, political-legal, socio-cultural, and technological.

Moradi et al. (2020) examined the application of blockchain technology in relation to the World Trade Organization’s (WTO) anti-corruption regulations. Their study posited that WTO agreements promote governance components conducive to preventing and combating corruption in international trade, thereby fostering a conducive business environment and fair competition. Employing meta-analysis, they assessed the efficacy of the WTO's agreements in mitigating corruption through the influence of blockchain technology. The study delineated the provisions of the WTO agreements and their approach to corruption in international trade, subsequently exploring the impact of blockchain technology. The research revealed that WTO agreements mandate member adherence to good governance components, implicitly advocating a preventive approach to corruption. Furthermore, the integration of new technologies within the Trade Facilitation Agreement, the Agreement on Trade in Services, and Government Procurement has been facilitated through concepts such as single trading windows and smart contracts. While these technologies have demonstrated efficacy in trade facilitation, government transactions, and trade in services, infrastructural limitations have engendered inefficiencies and challenges. Consequently, they cannot serve as a substitute for robust institutional frameworks, but rather, their synergistic application optimizes institutional effectiveness.

Nilforoushan and Ayazi (2020) evaluated the operational scope of oil and gas companies based on macro indicators of blockchain technology adoption readiness. The study examined the concept of blockchain and developed a framework for measuring adoption readiness. Subsequently, the operational scopes of companies within the oil and gas sector were identified and assessed against the established readiness indicators. Employing an applied and descriptive research methodology, the study utilized expert opinions from 15 individuals for pairwise comparisons and evaluation of the operational scope readiness. The findings indicated that energy trading at the business-to-business level exhibited the highest readiness for blockchain adoption. Following this, energy trading at the business-to-consumer level ranked second. The development and design of energy-related applications based on blockchain services occupied the third position.

2.15.2. External Background

Ali, Ally, and Dwivedi (2020) conducted a systematic literature review to assess the current state of blockchain technology adoption within the financial services sector. Their findings indicated that the financial system is amenable to advanced technologies due to their capacity to enhance transparency, reduce costs and processing times, and bolster security.

Girchenko, Semeniuk, and Girchenko (2020) examined the features and prospects of blockchain technology. They concluded that blockchain serves as a catalyst for the financial system by streamlining financial transaction processes, thereby incentivizing the adoption of advanced blockchain technologies. Their research further suggests that blockchain technology has significantly diminished manual labor within the financial sector.

Grover, Kar, and Ilavarasan (2018) conducted a systematic literature review on blockchain applications for businesses. They reported that with the financial system's adoption of digital and advanced payment systems, trust has emerged as a significant challenge. The researchers addressed the issues of trust and confidence within the financial system, concluding that blockchain technology has enhanced the security of financial transactions and facilitated the financial industry's transition to an implementation phase.

Consequently, Queiroz, Telles, and Bonilla (2019) conducted a systematic literature review on the integration of blockchain and supply chain management. Their study demonstrated that upon the occurrence of a new transaction within the financial system, each network participant receives a copy. The research also highlighted the decentralized nature of blockchain networks, emphasizing that control is distributed among all participants, ensuring transparency and clarity within the financial system. The redundancy inherent in the blockchain network enhances security and control.

Frizzo-Barker et al. (2020) conducted a systematic review examining blockchain as a disruptive technology for business. Their findings indicated that once a transaction record is distributed among network participants, it becomes immutable, preventing alteration or the addition of new transactions. The verified information of a transaction cannot be erased. The study also emphasized that blockchain technology provides an immutable historical record of financial transactions. Furthermore, it argued that modifying or deleting a transaction would require an attack on numerous distributed records, rendering such actions practically infeasible for any individual or group.

Ahram et al. (2017) examined the innovative applications of blockchain technology. They reported that financial systems can leverage blockchain to facilitate secure and efficient international money transfers. Traditionally, cross-border money transfers posed a significant challenge for financial institutions and customers due to high costs and lengthy processing times. The study indicated that several banks have adopted blockchain technology to address these issues. Furthermore, customers have embraced blockchain, accessing it through peripheral devices such as laptops and mobile phones.

Penn et al. (2020) investigated the relationship between blockchain technology and organizational operational capabilities. Their findings revealed that over 50% of board members acknowledged the significant impact of blockchain technology on financial transactions over the preceding three years. They also highlighted the versatility of blockchain, noting its application in asset transactions, record keeping, cryptocurrencies, information storage, and contractual agreements.

Golosova and Romanovs (2018) examined the relationship between liquidity and financial transactions within the context of blockchain technology. They argued that financial institutions utilize blockchain technology to optimize financial transactions and reduce the cost of capital. Their study further indicated that blockchain enhances transparency for stakeholders and facilitates both domestic and international money transfers.

Swan (2017) explored the economic benefits of blockchain technology, predicting its potential to streamline capital market activities, alleviate settlement time constraints, and diminish transaction costs. The study also highlighted blockchain's capacity to mitigate fraud. By digitizing financial assets and transactions, blockchain enables a more structured and manageable approach to financial system evaluation and planning.

In a study examining blockchain technology for enhancing supply chain flexibility, Min (2019) notes that while blockchain technology was initially employed as a public ledger for cryptocurrencies, its innovative features, including decentralization, security, transparency, and immutability, have led to its consideration for diverse applications beyond previous cryptographic forms of money. These attributes are particularly valuable for addressing uncertainties within the financial domain. Consequently, blockchain technology possesses the potential to transform financial commerce by altering the operational paradigms of various financial institutions.

The concept of blockchain was introduced by Satoshi Nakamoto in 2008 and gradually garnered research attention, although the underlying concepts predate this invention by several decades (Narayanan & Clark, 2017). Notably, Nakamoto demonstrated the functionality of Bitcoin, a digitally tradable currency, accessible globally at any time. The past decade has witnessed unprecedented advancements in big data techniques (Hassani, Huang, & Silva, 2018), machine learning (Baldominos & Saez, 2019), and the Internet of Money (Peters & Panayi, 2016), among others, aimed at safeguarding against data manipulation. Blockchain technology, by design, is "an open, distributed ledger that can efficiently record transactions between two parties in a verifiable, permanent manner" (Kahr, Tonkin, & Bilher, 2017). Traditionally, banking institutions have served as intermediaries between transacting parties, namely buyers and sellers of financial assets. However, they must now adapt to this evolving landscape. Furthermore, the risk factors and impact of banking on the global economy are well-documented (Lipton, 2018).

The current research literature reveals a dearth of studies presenting a strategic model for blockchain technology within the Iranian banking system, which is consistent with the nascent state of this field.

Methodology

This study employs a mixed-methods approach, combining qualitative and quantitative data, and is developmental in purpose. The respective sections are detailed below:

A) Qualitative Section

In the qualitative section, thematic exploration was conducted utilizing content analysis to code and categorize themes. An interview protocol was developed, and its questions were validated by experts based on predefined criteria, including adherence to ethical principles. Participants comprised managers and senior employees (with a minimum of 10 years of professional experience and a master's degree or higher) and management professors (with a minimum of 10 years of professional experience and a doctoral degree or higher). A purposive sample of

12 participants was selected upon reaching theoretical saturation. Data were collected through semi-structured interviews, and thematic analysis, as outlined by Braun and Clarke (2006), was employed for data analysis using MAXQDA software.

Thematic analysis is a methodology for identifying, analyzing, and reporting patterns within qualitative data. It involves a process of transforming disparate textual data into rich and detailed insights. While not confined to a specific qualitative method, thematic analysis can be integrated into various qualitative research approaches (Braun & Clarke, 2006). To ensure accuracy and validity, data source triangulation was utilized. Triangulation involves examining a topic from multiple sources and perspectives. In this study, diverse sources, including management professors, research literature, and management-related documents, were used to confirm interview content. Furthermore, multiple researchers were involved in data collection and analysis. Holsti's reliability coefficient was employed to assess research reliability. Holsti, an expert in content analysis, proposes a two-stage coding process. He provides a formula for determining the reliability of nominal data based on the percentage of agreement observed (PAO):

PAO = 2M / (N1+N2)

Where:

- M represents the number of items coded jointly between the two coders.
- N1 represents the total number of items coded by the first coder.
- N2 represents the total number of items coded by the second coder.

The (PAO) value ranges from zero (no agreement) to one (complete agreement). A PAO value greater than 0.7 is considered desirable, indicating a satisfactory level of intercoder reliability.

PAO = 2(215) / (235+255) = 0.877

In this study, the Holsti reliability coefficient for content analysis was 91%, exceeding the 70% threshold, thus demonstrating a satisfactory level of reliability.

Table 2. Participants in the study

Interviewee No.	Gender	Education	Professional experience	Job
1	Man	Master	12	Information technology
2	Man	PhD	14	Manager
3	Man	Master	15	Information technology
4	Woman	Master	10	Information technology
5	Man	PhD	15	Information technology
6	Woman	Master	11	Information technology
7	Man	PhD	20	Information technology
8	Woman	Master	18	Assistant director
9	Man	PhD	17	Information technology
10	Man	Master	15	Information technology
11	Man	PhD	14	Information technology
12	Woman	Master	10	Information technology

B) Quantitative Section

The quantitative section of this research employs an applied approach in terms of purpose and a descriptive-survey design for data collection. The study population comprises all 200 employees within the Information and Communication Technology Department of Sepah Bank Tehran. Utilizing Cochran's formula for finite populations, a sample size of 127 participants was determined. The measurement instrument in the quantitative section was a questionnaire derived from the qualitative findings.

Table 2. Data collection tools

No.	Variable	Number of questions	Questions	Cronbach's alpha coefficient
1	Security	8	1-2-3-4-5-6-7-8	0.80
2	Transaction	5	9-10-11-12-13	0.86
3	Transparency	5	14-15-16-17-18	0.75
4	Innovation	8	19-20-21-22-23-24-25-26	0.87
5	Cooperation	3	27-28-29	0.71
6	Efficiency	6	30-31-32-33-34-35	0.83
Total questions		35		0.89

The questionnaire's content validity ratio (CVR) was established through expert review, and construct validity was confirmed via factor analysis. Cronbach's alpha coefficient was utilized to verify the questionnaire's reliability. Due to the non-normality of the data, SmartPLS software was employed for data analysis.

Findings

The research findings are presented and discussed in two sections: qualitative and quantitative.

Qualitative Section:

Open coding yielded 255 initial concepts, which were subsequently reduced to 100 core concepts by eliminating redundancies. These core concepts were then organized into 6 main themes and 30 sub-themes. It is important to note that data analysis was iteratively conducted until theoretical saturation was achieved for both main and sub-themes. These thematic categories were refined throughout the analytical process.

Table 4. Identification of main themes, sub-themes, and core concepts

Main themes	Sub-themes	Themes and codes
Security and trust	Fraud prevention	Trust: Users' confidence in the security and integrity of information Information Security: Ensuring information is protected from cyber threats Attacks: Cyber threats targeting the blockchain network Proof-of-Work: A transaction verification method solving complex mathematical problems Risk Mitigation: Strategies employed to prevent and minimize potential threats
	Privacy and confidentiality	Anonymity: Obscuring user identities during transactions Biometric Identification: Verifying identity through physical features Encryption: Encrypting information to enhance security
	Security and transparency assurance	Transparency: Open access to blockchain information Verification: Node verification of transactions Protocol: Rules governing blockchain network operation Certification: Authenticating existing data

		Fast Transaction System: Rapid and accurate transaction processing
	Enhanced stakeholder transaction trust	Trust: Users' confidence in information security and authenticity
	Identity management	Sustainable Development: Resource-conscious blockchain growth and improvement
	Secure financial transaction storage	Backing: Real asset support for token value
	Encryption mechanism	Identity Management: User identification and validation
Efficiency and cost	Reduced banking costs	Economic Model: Blockchain financing and monetization Fees: Transaction processing costs
	Customer cost-effectiveness	Fees: Transaction processing costs Sharing Economy: Resource-sharing economic model
	Accelerated transfer process	Speed: Transaction processing time Fast Transaction System: Rapid and accurate transaction processing
	Simplified audit and financial processes	Agreement: User consensus on the blockchain Analytics: Data examination for insights
	Digital asset management	Token: Digital unit representing blockchain assets Platform: Blockchain software and infrastructure Digital Wallet: Tool for storing and managing digital currency
Transactions and payments	Peer-to-peer banking	Peer-to-Peer Transactions: Direct user exchanges without intermediaries Trading Platforms: Cryptocurrency marketplaces Secure Domestic and International Payments: Secure global financial transactions
	Secure global payments	Secure Domestic and International Payments: Secure global financial transactions
	Rapid transaction system	Speed: Transaction processing time
	Digital currency enablement	Token: Digital unit representing blockchain assets Trading Platforms: Cryptocurrency marketplaces
Transparency and analysis	Transaction tracking	History: Blockchain transaction record Link: Block connection within the chain
	Stock trading transparency enhancement	Transparency: Open access to blockchain information Certification: Data authenticity verification
	Trade data tracking	Transparency: Open access to blockchain information for transaction traceability History: Blockchain transaction records for anytime tracking and review Certification: Blockchain data authenticity verification for transaction integrity
	Financial record maintenance	Chaining: Block chain creation Distributed Database: Data storage across multiple locations
Innovation and development	Credit score calculation and activation	conomic Model: Blockchain financing and monetization
	Tokenization	Token Creation: Digital unit representing blockchain assets
	Smart contracts	Smart Contract: Automated code executing agreement terms
	Capital market strengthening	Dogecoin projects: Projects that are built on top of blockchain Enabling Innovation: Fostering blockchain growth opportunities
	Trade facilitation	E-commerce: Online goods and services exchange Trade finance

	Innovation empowerment	Enabling Innovation: Fostering blockchain growth opportunities
	Productivity enhancement	Increasing Productivity: Enhancing network performance and efficiency
Cooperation and interactions	Government institutional cooperation	Government: Blockchain use for public services
	Financial institution networking	Ecosystem: Blockchain institutional and organizational network

Quantitative Section:

In the quantitative section, of the 127 statistical samples, 117 questionnaires were analyzed due to incomplete responses in some instances.

Descriptive Statistics:

Of the 117 respondents, 89 (76.1%) were male and 28 (23.9%) were female. Regarding age distribution, 6 respondents (5.1%) were under 30 years old, 23 (19.7%) were between 31 and 35, 27 (23.1%) were between 36 and 40, 33 (28.2%) were between 41 and 45, 21 (19.9%) were between 46 and 50, and 7 (6%) were over 50 years old. In terms of educational attainment, 37 respondents (31.6%) held a bachelor's degree, 69 (59.0%) held a master's degree, and 11 (9.4%) held a doctoral degree. Regarding work experience, 16 respondents had 1 to 5 years of service, 34 had 6 to 10 years, 52 had 11 to 15 years, 10 had 16 to 20 years, and 5 had over 21 years of service.

Inferential Statistics:

To validate the questionnaire, the adequacy of the sample size for factor analysis was assessed using the Kaiser-Meyer-Olkin (KMO) sampling adequacy test. The KMO value was 0.863. Given that the significance level of Bartlett's test of sphericity was below the 5% error level, the sample was deemed sufficient. As the data exhibited non-normality, SmartPLS software, employing partial least squares structural equation modeling (PLS-SEM), was utilized for confirmatory factor analysis (questionnaire validation).

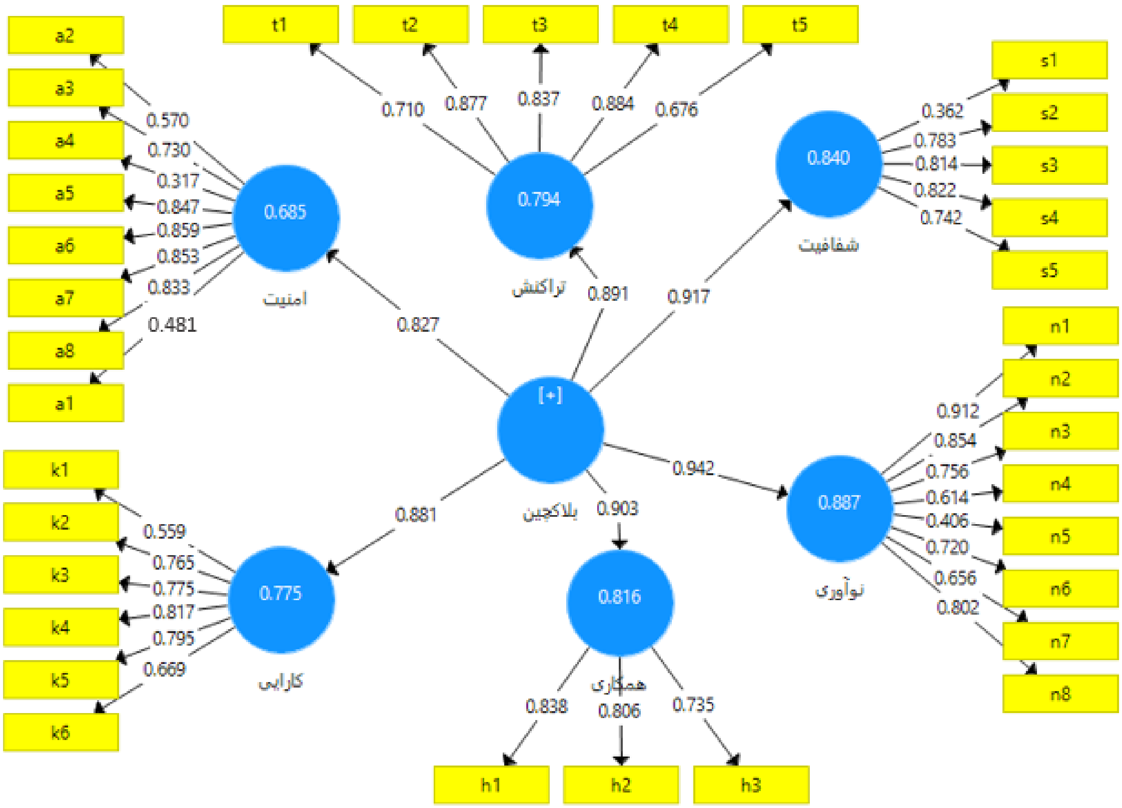

Figure 2. Standardized coefficients for the strategic model of blockchain technology validity in the Iranian banking system

As depicted in Figures 2 and 3, the validity of all indicators and items is substantiated. According to Figure 3, the t-values for the human capital excellence indicators within commercial banks exceed the critical value of 1.96 at the 5% significance level, confirming the validity of the indicators and items. The standardized coefficients for the variables, presented in Figure 2, demonstrate high factor loadings, approaching unity.

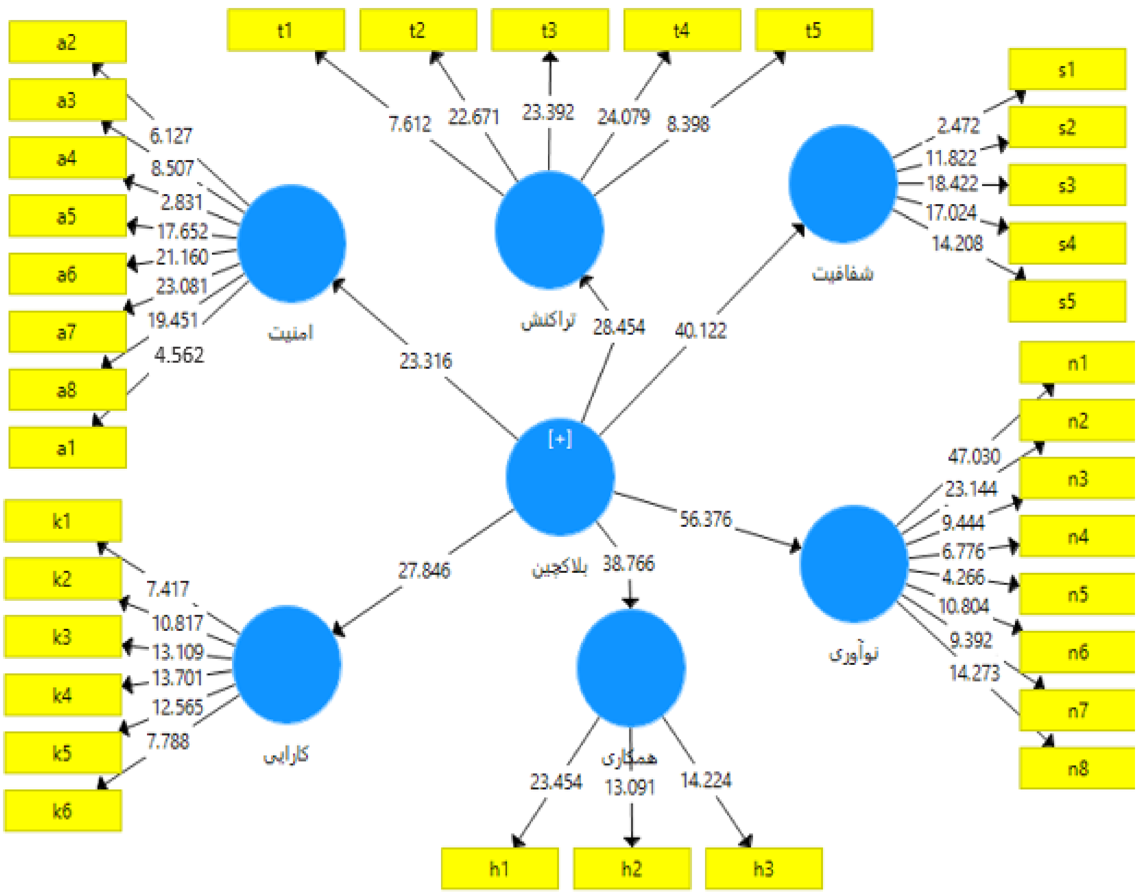

Figure 3. T-values for the strategic model of blockchain technology validity in the Iranian banking system

The results of the confirmatory factor analysis are as follows:
As evidenced by Figures 4.1 and 4.2, the validity of all indicators and items is supported. Specifically, Figure 4.1 demonstrates that the t-values for the blockchain technology indicators within the Iranian banking system exceed the critical value of 1.96 at the 5% significance level, thus confirming the validity of the indicators and items.

Table 4. Indicators and values related to the effectiveness model of advertising campaigns

Variable	Stone-Geisser Index (Q2)	Composite reliability	Coefficient of determination (R2)	Cronbach's alpha	AVE>0.4
Security	0.309	0.862	0.682	0.804	0.580
Transaction	0.541	0.899	0.792	0.858	0.642
Transparency	0.528	0.840	0.839	0.754	0.526
Innovation	0.499	0.898	0.886	0.866	0.533
Cooperation	0.480	0.836	0.814	0.706	0.630
Efficiency	0.314	0.874	0.773	0.826	0.541
Average	0.797		0.454		
GOF	0.601	$\sqrt{AveR2 \times (Ave\ of\ \ communalities\ )}$			

The reliability of the measurement model was assessed through Cronbach's alpha coefficient, which evaluates internal consistency. The Cronbach's alpha values for all variables exceeded 0.7, indicating satisfactory reliability of the questionnaire. Furthermore, the composite reliability index and the average variance extracted (AVE) of the measurement model demonstrated values above 0.7 for each construct, signifying adequate internal consistency. The communality and generalizability criterion, assessed using a separate sample from the same population, also yielded values greater than 0.5 for each construct.

The coefficient of determination (R^2) for the endogenous latent variables was calculated and compared against thresholds of 0.19, 0.33, and 0.67, representing weak, moderate, and strong explanatory power, respectively. As shown in Table 2, the average R^2 value for the variables was 0.45, exceeding the 0.33 threshold and indicating a good model fit. The overall model fit was also evaluated using the goodness-of-fit (GOF) index, developed by Tenenhaus et al. (2004), and calculated using the following formula:

Formula (1)

$$\sqrt{AveR2 \times (Ave\ of\ \ communalities\ )}$$

The average communality represents the average of the communalities for each construct, and the average R^2 value pertains to the endogenous constructs of the model. As indicated in Table 3, and using thresholds of 0.01, 0.25, and 0.35 to represent weak, moderate, and strong GOF values, respectively, the obtained GOF value of 0.552 for this model demonstrates a strong model fit.

Discussion and Conclusion

Consumers and financial institutions encounter numerous challenges when engaging in international money transfers. Blockchain-based payment systems mitigate these issues and enhance trust. Beyond facilitating money transfers, this technology possesses the potential to transform the banking sector in various capacities. Blockchain serves as a robust tool for transaction tracking and data security. While blockchain-based payments offer speed and immutability, concerns regarding online fraud persist among consumers. Notably, large transactions are more cost-effective compared to traditional banking services. Although cash, wire transfers, and cashier’s checks are considered secure payment options, cash lacks traceability, wire transfers are time-consuming, and cashier’s checks are susceptible to counterfeiting.

Blockchain technology has profoundly impacted diverse sectors, including finance, supply chain management, and healthcare, through the introduction of disruptive trends. While blockchain startups initially gained public attention two to three years ago, contemporary businesses across industries are actively exploring blockchain applications. Fundamentally, blockchain operates as a distributed ledger system, functioning as a decentralized record.

The adoption of blockchain technology can incur significant costs and time investments, particularly due to the scarcity of skilled blockchain developers. Smaller financial institutions, in particular, may be hesitant to modernize their existing systems. The immutability of data on a blockchain, while a key advantage, poses challenges for financial firms that require frequent data modifications. Implementing blockchain necessitates alterations to existing organizational practices. Both the development and application of blockchain technology within the financial services sector remain in their nascent stages. Future advancements in transaction processing and interoperability are crucial, as these enhancements will significantly augment the technology's utility for financial institutions.

Consequently, blockchain technology is witnessing increased adoption by banks globally. The future of manufacturing envisions a comprehensive network encompassing equipment, components, goods, and value chain partners, including suppliers and logistics firms. A primary objective of this technology is to establish an immutable ledger for digital assets, such as cryptocurrencies. Blockchain applications ensure data integrity and facilitate targeted marketing to enable content creators to receive equitable royalties for their original works. Blockchain technology is gaining traction in bank payment systems, a critical area given the prevalence of bank account transactions. Banks have historically been at the forefront of digital innovation, embracing disruptive technologies to ensure reliable payment processing and explore the issuance of their own cryptocurrencies. Blockchain technology enables banks to track transactions in real time and facilitates transaction settlement on public blockchains. To achieve widespread adoption within the banking sector, blockchain technology must meet stringent requirements. Its capacity for information sharing and temporary asset transfer will fundamentally transform transaction paradigms. The utilization of smart contracts on blockchain platforms will enable direct payments and automated usage, while also addressing challenges in sectors such as electric transportation. Businesses in the financial sector can leverage smart contracts to upload invoices onto the blockchain, which can store data such as payment due dates, amounts, and customer information. Upon payment, the smart contract automatically updates the invoice status, notifying companies of receipt. Furthermore, blockchain technology in financial services can assess customer trustworthiness prior to transaction initiation.

Blockchain technology can circumvent traditional fraud prevention mechanisms that necessitate multi-party transaction verification. Leveraging its peer-to-peer network and tamper-resistant attributes, blockchain stands as a premier technology for any sector, facilitating rapid information dissemination and verifiable, fraud-free transactions. The implementation of blockchain enhances transparency, trust, and efficiency, while safeguarding privacy and confidentiality. Its private and hybrid networks are designed to accommodate frequent surges in network activity and process hundreds of transactions per second. In the contemporary banking system, transaction settlement can extend up to a week. The layered structure of the current financial system mandates that each transaction traverse at least two intermediaries before resolution. In cross-border payments, these intermediaries may encompass the front and back offices of a bank or external entities such as exchanges. Blockchain technology in financial services enables the simultaneous assurance of security and transparency. The absence of transparency within the current system exacerbates security vulnerabilities, as anomalies often remain undetected until data compromise occurs. While complete public disclosure of financial information is undesirable, a degree of transparency is advantageous and essential for both financial service providers and their clientele. Ownership tracking is facilitated by the distributed ledger's inherent resistance to alteration, thereby verifying ownership transfer information and fostering trust.

Blockchain achieves this through the implementation of sophisticated, cryptographically secure protocols, thereby enhancing trust within the transaction environment. Identity management represents another significant application of blockchain technology. Users can construct immutable, trusted, and secure digital identities utilizing this technology. It is anticipated that traditional username and password authentication methods, increasingly susceptible to compromise, will be superseded by blockchain-based identity systems. Individuals can leverage their blockchain identity to digitally sign documents and perform routine actions, such as website and application logins.

Furthermore, blockchain technology facilitates the permanent and secure storage of financial transactions, alongside any other data, creating an incorruptible distributed record that surpasses the security of conventional databases. This capability offers diverse applications. In clinical and hospital settings, it can be employed to compile comprehensive patient medical histories. Additionally, it can safeguard creative digital assets, including e-books, music, images, and intellectual property. Moreover, it can serve as a secure registry for real estate or vehicle ownership.

Banks and other financial institutions are increasingly implementing blockchain technology to enhance their service offerings, mitigate fraud, and reduce operational costs. Traditionally, international money transfers have been characterized by delays and high expenses due to the reliance on multi-bank routing. Blockchain technology has the potential to streamline international transactions, enhance accuracy, and reduce costs. The distributed ledger system eliminates the need for intermediaries to validate financial transactions between clients, offering a more economical and efficient currency exchange mechanism compared to traditional banking.

Blockchain technology has the potential to improve customer affordability, reduce fraud risk, and enhance transparency within the financial services sector. The public ledger system inherent in blockchain can augment transparency by providing a verifiable record of transactions. This transparency can expose fraudulent activities and operational inefficiencies, thereby facilitating the development of risk mitigation strategies for financial institutions. Provided that sufficient data is securely stored on the blockchain, this technology can also substantially improve the labor-intensive and error-prone process of tax filing.

Blockchain-based payment systems mitigate or eliminate transaction fees by expediting the transfer process. Businesses incur losses, experience increased costs, and may resort to legal recourse when customers issue non-sufficient funds checks for goods or services. Utilizing blockchain-based payments, businesses can achieve transaction completion within seconds or minutes. Importers and other stakeholders can realize time and cost savings by leveraging blockchain technology to streamline the complexities of trade finance. The audit process within the financial industry can be simplified through the application of blockchain technology. Blockchain's immutable records enable auditors to verify compliance requirements while providing comprehensive transparency into a financial organization's operations. Blockchain technology is employed in letter of credit transactions to facilitate digital letters of credit between banks and businesses, independent of external systems. Consequently, numerous organizations are progressively integrating blockchain technology into their financial services ecosystems.

Blockchain technology now facilitates the comprehensive management of digital assets in a reliable, traceable, automated, and predictable manner. A distinguishing characteristic of blockchain is its secure, encrypted interlinking of "blocks." Blockchain technology offers the potential for rapid, secure, and cost-effective cross-border payments through the utilization of an encrypted, distributed ledger that provides instantaneous transaction verification without the necessity of intermediaries, such as correspondent banks and clearing houses. Blockchain maintains an immutable record of transaction and asset ownership from the asset's initial appearance on the network. The inherent risk reduction associated with blockchain eliminates the need for numerous traditional risk mitigation operations. In banking and financial services, blockchain deployment enables peer-to-peer transactions, thereby alleviating concerns regarding intermediary performance. Blockchain technology can enhance data immutability, improve transactional accuracy, and facilitate smart contract-based transaction settlement. Crucially, the real-time tracking of network transactions contributes to the reduction of credit risks and improved financial management. Consequently, the integration of blockchain into financial operations may empower financial service providers to optimize risk management practices.

This landscape is evolving as major banks increasingly adopt blockchain technology for international payments, resulting in time and cost efficiencies. Blockchain-based money transfers enable users to conduct electronic transactions via mobile devices, eliminating the necessity of physical visits to money transfer locations, queueing, and transaction fee payments. These payments facilitate rapid and seamless transactions across borders and within domestic boundaries. Blockchains provide a distributed, immutable transaction record that financial institutions can utilize for record-keeping and regulatory reporting. Blockchain technology has the potential to accelerate transaction settlement across a spectrum of financial services. Vendors can receive payments more promptly, lenders can expedite loan disbursements, and exchanges can achieve instantaneous stock purchase and sale settlements. Blockchain technology may offer a resolution to longstanding challenges faced by banking institutions. Furthermore, blockchain empowers customers to reduce costs associated with traditional financial services as investors increasingly opt for self-directed investment strategies to avoid elevated advisory fees.

Cryptocurrencies represent the latest iteration of blockchain-based assets. While cryptocurrencies are presently utilized, blockchain enterprises are reducing entry barriers and facilitating seamless exchanges of prominent cryptocurrencies as an alternative to traditional banking. Despite the stringent regulatory landscape of the banking sector, numerous financial institutions recognize the potential of blockchain technology and cryptocurrencies. By eliminating reconciliation processes and ensuring transaction history integrity, blockchain can broaden the scope of accounting, incorporating currently unmeasurable or unreliable factors, such as the valuation of corporate data. Financial institutions can leverage the distributed, immutable transaction records provided by blockchains to maintain accurate records and comply with regulatory mandates.

A blockchain functions as a decentralized transaction ledger. This technology can enable automated contracts, expedite and reduce transaction costs, and enhance security for financial service providers. Although widespread adoption of blockchain technology remains nascent, several financial institutions are already deploying it. Blockchain-based financial institutions have the potential to offer accelerated money transfers. Blockchain enhances transparency in stock trading through the provision of a decentralized platform. By streamlining multi-party interactions, blockchain eliminates complex processes. Smart contracts can be utilized to record transactions on the blockchain. Blockchain technology possesses the potential to revolutionize banking, accelerate transactions, and modernize stock exchanges within the financial services sector while upholding robust security standards.

The digitization of accounting practices has progressed at a relatively slow pace, partly due to the imperative to adhere to stringent regulatory standards for data legitimacy and integrity. Consequently, accounting represents another sector ripe for blockchain transformation. This technology simplifies double-entry accounting procedures and facilitates compliance. Instead of maintaining disparate records based on transaction receipts, organizations can directly input transactions into a unified ledger.

The potential of blockchain applications to enhance data efficiency and traceability in transactions constitutes a fundamental aspect of its success. Furthermore, smart contracts are instrumental in automating transaction execution, thereby minimizing human intervention. Consequently, this technology has the potential to revolutionize the financial services sector. Blockchain's operational applications are most prevalent in settlement, loan syndication, and financial transaction mechanics, such as trade finance. Blockchain represents a transformative currency, banking system, and transaction mechanism that is reshaping the landscape of global financial transactions.

Blockchain functions as an accounting technology, focusing on asset ownership transfer and the maintenance of an accurate financial ledger. Accountants are primarily concerned with the measurement, sharing, and analysis of financial information, as well as the optimal management of financial resources and the quantification of ownership rights and obligations. Blockchain provides clarity regarding asset ownership and liabilities, significantly enhancing accounting productivity.

Blockchain facilitates the development of novel banking and financial products and services, shared operating models, streamlined processes, reduced costs, and more open, inclusive, and secure business networks. Accountants and compliance auditors of financial service providers can provide verifiable information during audits, mitigating unethical conduct, dishonesty, compliance inconsistencies, and protracted audit cycles.

Blockchain technology plays a pivotal role in tokenization, the process of creating blockchain-based tokens that represent tangible assets. The utilization of blockchain in banking is expanding with the introduction of central bank digital currencies. Moreover, financial services firms are exploring blockchain technology to simplify fund management, potentially alleviating cost management pressures.

Smart contracts constitute a pivotal component of blockchain applications. Users of blockchain technology must ensure the accuracy, security, consistency, and efficacy of smart contract code. Rigorous testing of both functionality and control mechanisms is essential. Continuous functional testing is imperative. The deployment of smart contracts to define loan terms and conditions, distributed ledger technology for communication and transaction tracking, and transparent, immutable data to address time-consuming reconciliations and payment discrepancies enhances execution and service efficiency within the syndicated loan ecosystem. The integration of machine learning data capabilities with blockchain-based smart contracts facilitates this dynamism.

Blockchain-based systems hold the potential to optimize capital market operations. Traditional trade finance methodologies have historically presented challenges for businesses, as protracted procedures disrupt operations and impede liquidity management. Cross-border trade entails numerous variables and generates substantial documentation during information exchange, such as origin and product specifications. Blockchain technology can streamline cross-border processes and financial transactions, facilitating inter-organizational trade across regional and geographic boundaries. Blockchain-based payments offer enhanced security, as all participants must reach consensus on a transaction prior to its completion, and the updated ledger is publicly accessible.

Investment bankers typically require credit and financial information prior to investment decisions to ensure capital preservation. Blockchain technology has the potential to transform banking practices by enabling expedited payments, more precise audits, and enhanced identification, despite existing concerns.

Trade finance, encompassing the financial products and mechanisms that facilitate international trade, is gaining prominence in contemporary global commerce. By reconstructing the entire trade process on a blockchain platform, this technology has the potential to enhance trade security, efficiency, and transparency. Consequently, procedural automation accelerates, human error diminishes, and trust is fostered through open transparency. Open and distributed ledger technologies, such as blockchain, enable the efficient and permanent recording of inter-party transactions. A blockchain comprises discrete data blocks, each containing a set of interrelated transactions linked in a sequential manner. Participants can exchange a digital ledger across a computer network without the need for centralized authorities or intermediaries.

Blockchain technology possesses the potential to revolutionize the financial industry by augmenting efficiency, transparency, and security, while simultaneously reducing costs and fostering unprecedented innovation. Blockchain, the technology underpinning the digital currency Bitcoin, has emerged as a prominent topic within the financial sector. Numerous major banks and critical financial institutions have initiated projects to explore blockchain's potential. The extensive control and comprehensive transparency afforded by blockchain technology eliminate the necessity for centralized intermediaries or authorities that have traditionally managed, authorized, or verified transactions. This technology is transforming conventional data security paradigms at all levels. It can facilitate the maintenance of a balance between technology, user data, and privacy as the digital revolution progresses, enabling enhanced data management and privacy preservation.

Based on the strategic model presented in this study, it is recommended that managers of relevant organizations implement blockchain technology within the banking industry. This implementation should be structured around six core components: "security and trust, efficiency and cost, transaction and payment, innovation and development, transparency and collaboration."

Banks can leverage blockchain to establish platforms that facilitate direct collaboration and financial interactions between diverse institutions, eliminating the need for complex and protracted processes. This system can prove particularly beneficial in settlement operations and collaborative project and loan financing.

References

- Adrian, T., Etula, E., & Muir, T. (2014). Financial intermediaries and the cross- section of asset returns. *The Journal of Finance*, *69*(6), 2557-2596.
- Ahram, T., Sargolzaei, A., Sargolzaei, S., Daniels, J., &Amaba, B. (2017, June). Blockchain technology innovations. In 2017 IEEE technology & engineering management conference (TEMSCON) (pp. 137-141). IEEE.
- Ali, O., Ally, M., & Dwivedi, Y. (2020). The state of play of blockchain technology in the financial services sector: A systematic literature review. *International Journal of Information Management*, *54*, 102199.
- Alvseike, R., & Iversen, G. A. G. (2017). *Blockchain and the future of money and finance: a qualitative exploratory study of blockchain technology and implications for the monetary and financial system* (Master's thesis).
- Andoni, M., Robu, V., Flynn, D., Abram, S., Geach, D., Jenkins, D., ... & Peacock, A. (2019). Blockchain technology in the energy sector: A systematic review of challenges and opportunities. *Renewable and Sustainable Energy Reviews*, *100*, 143-174.
- Arjun, R., & Suprabha, K. R. (2020). Innovation and Challenges of Blockchain in Banking: A Scientometric View. *International Journal of Interactive Multimedia & Artificial Intelligence*, *6*(3).
- Arjun, R., & Suprabha, K. R. (2020). Innovation and Challenges of Blockchain in Banking: A Scientometric View. *International Journal of Interactive Multimedia & Artificial Intelligence*, *6*(3).
- Clark, G. L. (2017). Financial intermediation, infrastructure investment, and regional growth. *Area Development and Policy*, *2*(3), 217-236.
- DeVries, P. D. (2016). An analysis of cryptocurrency, bitcoin, and the future. *International Journal of Business Management and Commerce*, *1*(2), 1-9.
- Dujak, D., &Sajter, D. (2019). Blockchain applications in the supply chain. In *SMART supply network* (pp. 21-46). Springer, Cham.
- Frizzo-Barker, J., Chow-White, P. A., Adams, P. R., Mentanko, J., Ha, D., & Green, S. (2020). Blockchain as a disruptive technology for business: A systematic review. International Journal of Information Management, 51, 102029.
- Garg, P., Gupta, B., Chauhan, A. K., Sivarajah, U., Gupta, S., & Modgil, S. (2020). Measuring the perceived benefits of implementing blockchain technology in the banking sector. *Technological Forecasting and Social Change*, 120407.
- Ghosh, S. (2016). Changing Role of Financial Intermediaries due to Electronic Technologies. *International Journal of Engineering Science*, *6671*.
- Girchenko, T., Semeniuk, I., &Girchenko, L. (2020). BLOCKCHAIN TECHNOLOGY: FEATURES, PROSPECTS. EuropeanCooperation, 3(47), 17-32.
- Golosova, J., & Romanovs, A. (2018, November). The advantages and disadvantages of the blockchain technology. In 2018 IEEE 6th

workshop on advances in information, electronic and electrical engineering (AIEEE) (pp. 1-6). IEEE.

- Golosova, J., & Romanovs, A. (2018, November). The advantages and disadvantages of the blockchain technology. In 2018 IEEE 6th workshop on advances in information, electronic and electrical engineering (AIEEE) (pp. 1-6). IEEE.
- Grover, P., Kar, A. K., & Ilavarasan, P. V. (2018, October). Blockchain for businesses: A systematic literature review. In Conference on e-Business, e-Services and e-Society (pp. 325-336). Springer, Cham.
- Iansiti, M., & Lakhani, K. R. (2017). The truth about blockchain. Harvard Business Review, 95(1), 118–127.
- Janssen, M., Weerakkody, V., Ismagilova, E., Sivarajah, U., & Irani, Z. (2020). A framework for analyzing blockchain technology adoption: Integrating institutional, market and technical factors. *International Journal of Information Management*, *50*, 302-309.
- Joshi, A. P., Han, M., & Wang, Y. (2018). A survey on security and privacy issues of blockchain technology. *Mathematical foundations of computing*, *1*(2), 121.
- Kakavand, H., Kost De Sevres, N., & Chilton, B. (2017). The blockchain revolution: an analysis of regulation and technology related to distributed ledger technologies. *Available at SSRN 2849251*.

Kallugudde, M. D., Bhardwaj, S., &Venugopalan, V. (2020). *U.S. Patent Application No. 16/507,755*.

- Karame, G. (2016, October). On the security and scalability of bitcoin's blockchain. In *Proceedings of the 2016 ACM SIGSAC conference on computer and communications security* (pp. 1861-1862).
- Kshetri, N. (2018). Blockchain's roles in meeting key supply chain management objectives. International Journal of Information Management, 39, 80–89.
- Lewis, A. (2018). *The basics of bitcoins and blockchains: an introduction to cryptocurrencies and the technology that powers them*. Mango Media, Inc.
- Min, H. (2019). Blockchain technology for enhancing supply chain resilience. Business Horizons, 62(1), 35-45.
- Nowiński, W., & Kozma, M. (2017). How can blockchain technology disrupt the existing business models? Entrepreneurial Business and Economics Review, 5(3), 173–188.
- Queiroz, M. M., Telles, R., & Bonilla, S. H. (2019). Blockchain and supply chain management integration: a systematic review of the literature. *Supply Chain Management: An International Journal*.
- Short, C. (2018). Blockchain applications. Modern Trader, 1(539), 21.
- Till, B. M., Peters, A. W., Afshar, S., & Meara, J. G. (2017). From blockchain technology to global health equity: can cryptocurrencies finance universal health coverage?. *BMJ global health*, *2*(4).
- Treiblmaier, H., &Sillaber, C. (2020). A Case Study of Blockchain-Induced Digital Transformation in the Public Sector. In *Blockchain and Distributed Ledger Technology Use Cases* (pp. 227-244). Springer, Cham.
- Wang, Y., Singgih, M., Wang, J., &Rit, M. (2019). Making sense of

blockchain technology: How will it transform supply chains?. *International Journal of Production Economics*, *211*, 221-236.

HOW TO CITE THIS ARTICLE:
Rezaei,F , Mohammadzadeh,A, Sanaei ,M R ,Designing a Strategic Model for Blockchain Technology in the Iranian Banking System , International Journal of Finance, Accounting and Economics Studies, 5(4): 107-128.
Journal homepage: https://sanad.iau.ir/journal/ijfaes