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RESEARCH ARTICLE **Open Access**

Designing a New Behavioral Model of Blockchain Technology Acceptance in Public Banks

Saba Berenji[1], Maryam Rahmaty [2*], Davood Kiakojouri [3]

Abstract

The purpose of the study is to design a new behavioral model of blockchain technology acceptance in public banks through content analysis. Therefore, based on the theoretical literature and behavioral theories of technology acceptance, the primary conceptual model was presented. Then, by interviewing experts selected by snowball method, the relevant model was finalized. Theoretical validity and interpretive validity methods were used to measure the validity of interviews. To check the reliability of interviews, the test-retest reliability method has been used. The validity of the factors was checked through the Delphi technique and with fuzzy calculations. According to the results, four main factors of the behavioral model are: people, environment, organization, and technology. Totally 10 sub-factors and 36 indicators were identified. This model can contribute to public banks to understand how these various factors interact with each other and how they can be improved to achieve higher acceptance of blockchain technology.

Keywords: *Organizational Behavior, Blockchain Technology, Acceptance, Content Analysis, Public Banks*

Introduction

Blockchain keeps a distributed record of digital transactions. The start of using this technology was Bitcoin, which was based on digital currency (Xu et al., 2019). In recent years, it has expanded to different sectors (Arham et al., 2017; Oh et al., 2017; Sikorski et al., 2017). Blockchain technology has been used in many fields such as business, judiciary, finance, banking, healthcare, and education (Apte and Petrovsky, 2016; Esposito et al., 2018).

Understanding the phenomenon of acceptance of any new technology by users has become one of the most important topics in the area of technology (Momani and Jamous, 2017). Technology acceptance is defined by Davis et al. (1989) as: the implementation of software and hardware technology in an organization to increase productivity, competitive advantage, processing speed, and information availability. The blockchain technology acceptance in public banks also brings many benefits such as facilitating payments and therefore increasing productivity and competitive advantage. However, researchers have declared that even if there are benefits, new technologies will not be fully accepted if external factors affect the adoption of information technology (Davis, 1989; Davis et al., 1992). The implementation of new technologies is very costly and complex (Albayati et al., 2020).

Public banks owned by the government are basically based on a very large structure; facing a large number of customers. Therefore, blockchain technology facilitates public banks transactions, which leads to a better response to customers' needs. Blockchain technology has positive effects in the banking industry, such as speeding up

1. PhD Student in Management, Chalous Branch, Islamic Azad University, Chalous, Iran
2*. Department of Management, Chalous Branch, Islamic Azad University, Chalous, Iran (Corresponding Author: rahmaty.maryam61@gmail.com)
3. Department of Management, Chalous Branch, Islamic Azad University, Chalous, Iran

transactions, increasing security, dealing with bank embezzlement, storing customer information, and reducing the time and costs of banking operations. In Iran, there are many public and private banks that can grow significantly in the banking industry with the help of this technology (Mostafavi et al., 2018).

The purpose of technology acceptance theories and models is to explain how users may understand and accept new technology and how they can use it. For any new technology, many variables affect people's decision-making process about how and when to use a new technology (Fishbein and Ajzen, 1985). These variables have been examined and analyzed in several studies (Triandis, 1979; Venkatesh et al., 2003). Although much work has been done to date, further studies are necessary to determine the appropriate model for the acceptance of blockchain technology. In this research, a new model of blockchain technology acceptance in public banks is designed. The proposed model focuses on organizational behavior factors, as Vakilian Sayyah et al. (2022) stated a higher level of organizational behavior causes an increase in performance productivity and effectiveness. Ronaghi (2022) focused on the acceptance of blockchain technology in Iran's banking industry with the use of UTAUT - Unified Theory of Acceptance and Use of Technology as the research model. However, researchers are willing to use other theories together. Based on research background, Heidari et al. (2019) extracted indices of blockchain acceptance in Iran's financial markets. But, they could apply qualitative methods such as content analysis to suggest more adaptable indices to Iran's financial markets conditions. It is worth mentioning that behavioral model of blockchain technology acceptance in banks and specifically in public banks has not been done so far with the following contributions:

1) Proposing a behavioral model of blockchain technology acceptance just in Iran's public banks.
2) Proposing blockchain technology acceptance indices based on the literature background and qualitative research method which is content analysis.
3) The proposed model focuses on the organizational behavior.
4) The results of content analysis are validated according to the fuzzy Delphi technique.

Literature Review

Researchers have proposed several theories regarding the investigation of people's technology acceptance behavior, and on the basis of these theories, many studies have been conducted regarding technology acceptance. In the last decade, a lot of success has been achieved regarding the acceptance of new technology by users. Theoretical and empirical knowledge exists in support of technology acceptance models and theories (Albayati et al., 2020).

The theory of reasoned action (TRA) proposed by Fishbein and Ajzen in 1975 to test the relationship between attitudes and behavior. According to this theory, attitudes and subjective norms (social influence) affect the intention to behave and finally the behavior (Kafashian, 2009). Simply put, if people evaluate a behavior positively (attitude), or think that important people want to do that behavior by them (subjective norms), so these must lead to a higher intention to behave (Fishbein and Ajzen, 1981). Accordingly, it assumes that a person acts rationally and calculates the results of his behavior and decides to perform or not perform a specific behavior (Kafashian, 2009). In 1991, in the development of the theory of reasoned action model, Ajzen presented the theory of planned behavior (TPB). In this way, he added another predictive variable called the perceived behavioral control to the basic model of the theory of reasoned action to explain non-volitional behavior (Ajzen, 1991).

Triandis (1979) recognized the key role that both social factors and emotions play in the formation of intention. He also highlighted the importance of past behavior over the present. Therefore, Triandis proposed a theory of interpersonal behavior in

which intentions—like many other models—are a definite predictor of behavior. But the important thing is that habits also moderate behavior. And both of these effects are moderated by facilitating conditions.

Deki and Ryan (2002) referred to intrinsic and extrinsic motivation as motivational and behavioral factors in technology acceptance. According to Ryan and Deki (2000), intrinsic motivation is as a behavior that a person performs based on internal motivations such as self-affirmation and passion and tries to convert extrinsic motivation into personal values. On the other hand, based on the degree of control exerted by external factors, the level of extrinsic motivation can be interpreted as a behavior derived from external influencing factors.

One of the most common models designed in relation to the acceptance of information technology is the Technology Acceptance Model (TAM). This model was presented by Davis in 1989. To use any system, the actual behavior is determined by the Perceived Usefulness (PU) and the Perceived Ease of Use (PEOU). These two factors are related to the desire to use, and the degree of desire is related to the intention and ultimately to the behavior. It is formulated on the basis of TRA and TPB (King and He, 2006; Marangunić and Granić, 2015).

Over time, the TAM has been tested and developed with modifications and has become the Technology Acceptance Model 2 (TAM2) (Venkatesh and Davis, 2000), the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003), and Technology Acceptance Model 3 (TAM3) (Venkatesh and Bala, 2008).

Ebrahimi and Yeganegi (2023) identified and ranked the success factors of technology transfer in Iran's banking industry. They also identified and ranked barriers to technology transfer in Maskan & Meli Banks of Iran (Yeganegi and Ebrahimi, 2022). Farsijani and Karampour (2022) evaluated the level of readiness to use blockchain in Iran's National Gas Company. For this purpose, organizational, technological, human, and environmental factors as well as 17 sub-criteria have been identified. They presented that the organizational and technological factors are the most prepared and the environmental factor is the least prepared in Iran's National Gas Company to apply blockchain technology. The research of Rahimi et al. (2022) was conducted with the aim of identifying the key obstacles to the application of blockchain technology and developing its hierarchical model in the supply chain of the food industry. The results of the research showed that internal barriers as well as legal barriers are the most important barriers to the application of blockchain technology in the supply chain of the food industry.

The purpose of Hosseini Sarkhosh's study (2022) is to prioritize the factors related to the adoption of blockchain technology in the Electronic Health Record (EHR) system. 11 factors related to the adoption of blockchain in EHR systems were identified and divided into five categories: technological, legal, financial, environmental and organizational. According to experts' judgments, the legal criterion was identified as the most important factor in the adoption of blockchain technology in EHR systems. In addition, security and privacy, compliance with legal requirement, adaptability to changes in laws, incentives and rewards, and standardization, respectively were identified as five important sub-criteria in the acceptance of this technology.

Ahmadi et al. (2022) determined the future of blockchain technology marketing in banking industry. The purpose of Shrestha et al.'s (2021) study was to evaluate user acceptance of an active blockchain-based system by observing the features that affect the development of users' attitudes and intentions to use the system. They achieved their research objective by testing TAM augmented with a blockchain-based system trust model built using blockchain technology. Gholamian et al. (2021) focused on Keshavarzi Bank for identifying barriers of the implementation and use of Internet banking. Tyan et al.'s (2020) study aims to advance blockchain research and increase

understanding of blockchain adoption in the tourism industry using Grounded Data Theory.

Post et al. (2018) have stated that blockchain technology is increasingly attracting the attention of academics as well as professionals and has the potential to disrupt traditional ways of working in most industries. At least, that's what the innovators and early adopters promised. In their study, 13 factors affecting the diffusion of blockchain technology have been identified.

Mohtaramzadeh et al. (2018) state that the technology-organization-environment (TOE) framework (Tornatzky & Fleischer, 1990) provides a more comprehensive evaluation regarding the acceptance of technologies; Because the implementation of a new system in a company relies on organizational, technical and environmental aspects. This model combines non-human and human aspects in one model. Khorashadi-Zadeh (2017) on the basis of customers' opinions of Melli Bank indicated that information quality and usability are the most prominent factors for the improvement of the quality of IT services. In the area of quality of banking services in Iran, Akbari and Darabi (2016) identified factors affecting customer satisfaction. Amini and Alinezhad (2016) focused on the domain of technology selection as an important step in technology management.

Derived from the behavioral theories of technology acceptance that were explained earlier, such as TPB, TRA, Triandis model, and motivation theory, figure 1 is presented as the primary research conceptual model.

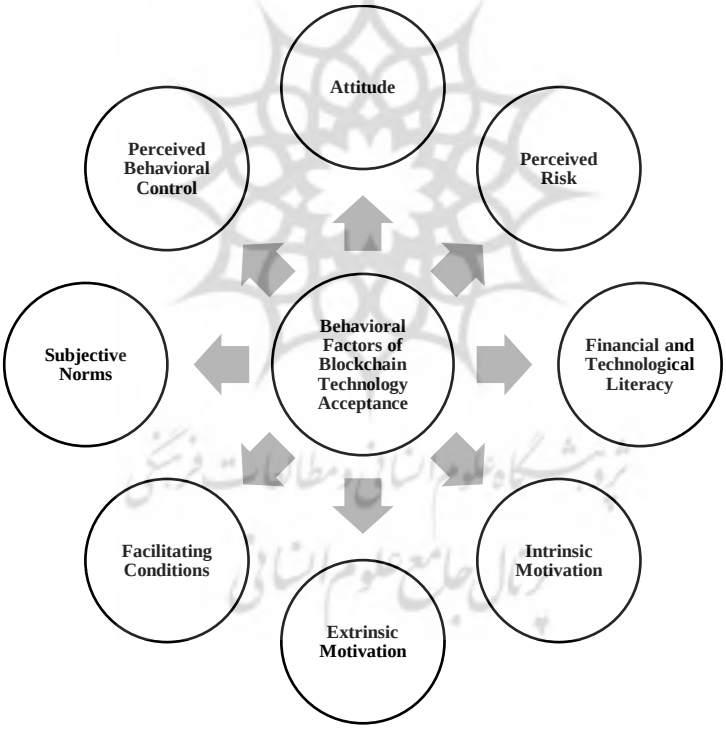

Figure 1. *The Primary Behavioral Model of Blockchain Technology Acceptance in Public Banks*

Research Methodology

The aim of the research is to disseminate and develop existing knowledge in the field of behavioral factors of blockchain technology acceptance in Iran's public banks. Therefore, it is exploratory to identify behavioral factors of blockchain technology acceptance. The statistical population of the research includes all relevant literature, as well as organizational experts related to blockchain technology. Organizational experts were selected based on the criteria of having at least 20 years of work experience related to the research area and having a master's degree or higher in IT Management as well as having at least an experience of working on a project in

the Blockchain area. Experts were selected by non-probability snowball sampling method to conduct in-depth semi-structured interviews. Interviews with experts continued until data saturation. The interview reached saturation with the number of 10 experts and it was analyzed with the content analysis method, and the validity of the identified indicators was done with the fuzzy Delphi method, in which 20 experts participated. Theoretical validity and interpretive validity have been used in the research. Theoretical validity refers to the degree of compatibility between the theoretical research and the data obtained from the interviews. The theoretical foundations and theories that were explained indicate the theoretical validity. Interpretive validity expresses the extent to which the beliefs, feelings, attitudes, intentions and experiences of the interviewee are accurately understood by the researcher. The most important strategy for examining the interpretive validity is the feedback obtained from the interviewees. In this research, to check the validity of the interpretation, the researchers presented their interpretations of the interview results to the interviewees and asked them that "do they agree with the interpretations that the researchers understood from their answers or not?" The correctness of the researchers' interpretations was determined from the responses of the interviewees, and the misinterpreted materials were corrected. In order to check the reliability of interviews, the test-retest reliability method has been used. In this method, three interviews were selected from the conducted interviews and each interview was coded twice by the researchers two weeks apart. In each interview, the codes that were similar to each other in the mentioned time interval were considered as "agreement". Then, the retest reliability value was calculated with the equation (1).

$$\text{Percentage of agreement} = \frac{\text{Number of agreements} \times 2}{\text{Total number of codes}} \quad (1)$$

Content analysis method was used to analyze qualitative data. In content analysis, it is possible to analyze the themes and meanings of any type of content (including interviews, speeches, texts of books and articles, newspapers, pictures, interviews, websites, etc.) that have been classified. The qualitative content analysis process includes three main stages (Momeni Rad, 2012):

1) Preparing for analysis (determining the research problem, formulation of questions and objectives, and define and specify variables),
2) Organizing (sampling and selection of analysis unit, and coding and categorization),
3) Analysis and reporting the results.

The Delphi method is used to obtain the opinion of a group of experts on a certain subject, with the aim of reaching a group agreement between experts. In the mentioned method, the survey continues until the experts reach a group agreement.

The final numbers obtained in table (3-4) were calculated by Minkowski formula as follows:

The validation of indicators obtained from research was done using the fuzzy Delphi technique. This method is a combination of Delphi technique and data analysis with fuzzy sets. Considering that the subjective interpretation of experts can be effective on their decision-making in the field of qualitative variables, by defining the fuzzy interval for qualitative variables, experts can answer questions with the same mentality. In this research, 20 experts were purposefully selected and invited to participate in the fuzzy Delphi method. In the fuzzy Delphi method, the verbal responses were converted into a triangular fuzzy number and a definite number according to figure 2 and table 1.

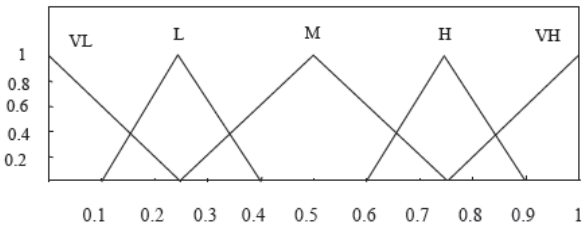

Figure 2. *Verbal Variable Definition (Rezaie et al. 2017)*

Table 1.
Triangular Fuzzy Numbers of Verbal Variables

Linguistic variables	Symbols	Fuzzy triangular numbers (α,m ,β)	Absolute fuzzy numbers (χ)
Very high	VH	(0.75,1,1)	0.75
High	H	(0.5,0.75,1)	0.625
Medium	M	(0.25, 0.5,0.75)	0.3125
Low	L	(0,0.25,0.5)	0.0625
Very low	VL	(0,0,0.25)	0.0625

The absolute numbers obtained in table 1 were calculated by Minkowski equation as the equation (2).

(2) $$\chi = m + \frac{\beta - \alpha}{4}$$

In the above equation (α) is the lower limit (bound), (β) is the upper limit (bound) and (m) is the biggest membership degree.

In the first stage of Delphi, the indicators of the research model were provided to the experts using a closed questionnaire, and they expressed their agreement with each of the indicators in a range of five options from very low to very high. Then, the collected opinions were analyzed with fuzzy calculations and the fuzzy average of each indicator was calculated through the equations (3) and (4).

(3) $$A_i = (a_1^i, a_2^i, a_3^i)$$

(4) $$A_{ave} = (m_1, m_2, m_3) = \left(\frac{1}{n}\sum_{i=1}^{n} a1^i, \frac{1}{n}\sum_{i=1}^{n} a2^i, \frac{1}{n}\sum_{i=1}^{n} a3^i\right)$$

According to the above formula, A_i denotes the opinion of the i-th expert and A_{ave}denotes the average opinion of the experts. After calculating the triangular fuzzy average for each indicator, de-fuzzified (absolute) numbers were calculated with the help of Minkowski equation.

In the second stage of Delphi, the second questionnaire was created and sent to each expert along with the previous opinions of the experts and the extent of their disagreement with other experts, and they were asked to rate the importance of each indicator based on the opinions of others. Then, the collected data were analyzed. In the next step, the difference between the average opinion of experts in the first and second stage of the Delphi survey was calculated. Considering that the amount of disagreement between the experts in the two stages is less than the very low threshold (0.1), it can be said that the experts have reached an agreement on the model indicators. Therefore, the survey was stopped.

Findings

The detailed demographic attributes of the experts are tabulated in table 2.

Table 2.
Demographic Characteristics of Experts and in the Research.

Characteristics of experts	Number	Gender		Organizational position			Education		Age		
		Female	Male	Chief	Deputy	Manager	Master	P.H.D	20-30	31-40	41-50
Experts for interview	10	3	7	5	4	1	8	2		6	4
Experts for Delphi technique	20	8	12	10	6	4	16	4		12	8

Concepts extracted from the text of semi-structured in-depth interviews for 10 interviews, main themes, and sub-themes on the basis of the literature and interviews are presented in table 3.

Table 3.
Concepts, Main Themes, and Sub-themes

Concepts	**Main Themes**	**Sub-themes**
Environment	Facilitating conditions	• Support policies • Legal and regulatory support
	Competition	• Application of blockchain technology in other public banks

Concepts	Main Themes	Sub-themes
Organization	Facilitating conditions	• Strategic orientation • Infrastructure • Management support • Financial resources • Education
	Extrinsic motivation	• Reward • Promotion • Recognition • Job security • Access to facilities and opportunities • Job security
People	Attitude	• Understanding the benefits of using blockchain • Interest of employees
	Literacy and skill	• Literacy and skill of technology • Literacy and skill of finances
	Perceived Behavioral Control	• Ensuring learning • Ensuring skill acquisition
	Intrinsic Motivation	• Effort • Responsibility • Feeling comfortable in use • Cooperation in use
	Subjective norms	• Communication and recommendation of colleagues • Expectations of colleagues
Technology	Perceived risk	• Confidentiality of data • Data encryption • Perceived security • Unsuccessful experience • Incompatibility of reality with mental image
	Technology features	• Complexity • Scalability • Flexibility • Cost • Ease of use

The retest reliability value for three interviews is equal to 0.77. Since the resulting value is greater than 0.6, the reliability of coding can be confirmed.

Regarding Delphi technique, the lower limit of the average threshold (value 0.25) was chosen as the threshold value. Since the absolute average of the second step for all indicators is greater than 0.25, it can be said that all indicators have been accepted by experts.

Table 4.

The Amount of Difference between the Average Opinions of Experts in the First and Second Steps

Indicator	The absolute average of the first step	The absolute average of the second step	The difference between the average of the first and second steps	Result
Support policies	0.675	0.712	0.037	Accepted
Legal and regulatory support	0.6	0.69	0.09	Accepted
Strategic orientation	0.602	0.609	0.007	Accepted
Infrastructure	0.562	0.631	0.069	Accepted
Management support	0.628	0.669	0.041	Accepted

Indicator	The absolute average of the first step	The absolute average of the second step	The difference between the average of the first and second steps	Result
Financial resources	0.656	0.694	0.038	Accepted
Education	0.61	0.659	0.049	Accepted
Understanding the benefits of using blockchain	0.562	0.565	0.003	Accepted
Interest of employees	0.565	0.618	0.053	Accepted
Literacy and skill of technology	0.669	0.702	0.033	Accepted
Literacy and skill of finances	0.593	0.615	0.022	Accepted
Confidentiality of data	0.59	0.597	0.007	Accepted
Data encryption	0.594	0.6	0.006	Accepted
Perceived security	0.63	0.647	0.017	Accepted
Unsuccessful experience	0.675	0.694	0.019	Accepted
Incompatibility of reality with mental image	0.694	0.721	0.027	Accepted
Job security	0.522	0.547	0.025	Accepted
Complexity	0.712	0.731	0.019	Accepted
Scalability	0.498	0.537	0.039	Accepted
Flexibility	0.553	0.566	0.013	Accepted
Cost	0.59	0.631	0.041	Accepted
Ease of use	0.5	0.553	0.053	Accepted
Ensuring learning	0.581	0.577	0.004	Accepted
Ensuring skill acquisition	0.555	0.599	0.044	Accepted
Reward	0.578	0.618	0.04	Accepted
Promotion	0.578	0.609	0.031	Accepted
Recognition	0.54	0.556	0.016	Accepted
Job security	0.518	0.536	0.018	Accepted
Access to facilities and opportunities	0.44	0.462	0.022	Accepted
Effort	0.656	0.731	0.075	Accepted
Responsibility	0.541	0.544	0.003	Accepted
Feeling comfortable in use	0.431	0.521	0.09	Accepted
Cooperation in use	0.546	0.6	0.054	Accepted
Application of blockchain technology in other public banks	0.637	0.7	0.063	Accepted
Communication and recommendation of colleagues	0.54	0.63	0.09	Accepted
Expectations of colleagues	0.666	0.709	0.043	Accepted

Therefore, the final conceptual model derived from content analysis and Delphi method is presented in figure 3.

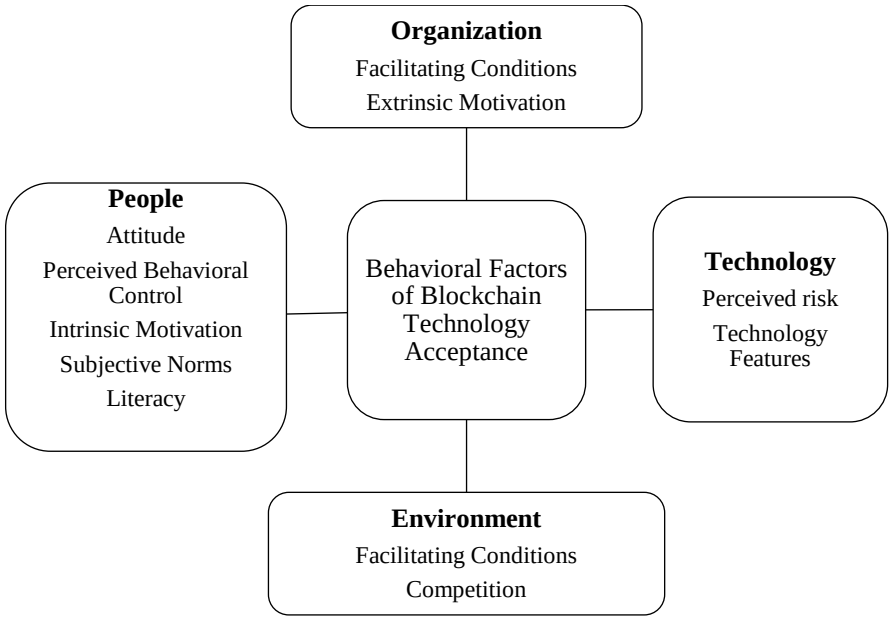

Figure 3. *The Final Behavioral Model of Blockchain Technology Acceptance in Public Banks*

Discussions and Conclusions

This paper focused on the study with the aim of designing a new behavioral model of blockchain technology acceptance in public banks with the use of content analysis. On the basis of the relevant theoretical literature and behavioral theories of technology acceptance, an initial conceptual model of the study was determined. Accordingly, experts selected by snowball method were interviewed. Theoretical validity and interpretive validity methods were used for the measurement of the validity of interviews. The test-retest reliability method was applied for checking the reliability of interviews. In this research, fuzzy Delphi technique has been used to identify the final accepted indicators, so that we could propose the final behavioral model of blockchain technology acceptance in public banks. This model has four components including people, environment, organization, and technology, as well as 10 sub-factors and 36 indicators. Sub-factors are attitude, perceived behavioral control, subjective norms, intrinsic motivation, literacy, perceived risk, technology features, facilitating conditions, competition, and extrinsic motivation.According to the results of this study, public banks need to focus on people. People as an organizational behavior factor includes attitude, perceived behavioral control, intrinsic motivation, literacy of technology and finances. These are mentioned in literature of behavioral technology acceptance theories such as TRA, TPB, Motivation, and Triandis model. Another important factor to be considered in the acceptance of blockchain technology in public banks is organization. Organization as an organizational behavior factor includes facilitating conditions and extrinsic motivation. Triandis (1979) and Safa and Solms (2016) applied these sub-factors in their research. The acceptance of blockchain applications in Iran's public banks increases due to creating a competitive environment and governmental support. Environment as an organizational behavior factor includes facilitating conditions mentioned by Triandis (1979), and competition, which has been used in TOE model as a sub-factor of environment. Moreover, perceived risk and technology features such complexity are classified as technology, which is another important factor in the acceptance of blockchain technology in public banks. Chao (2019) determined these sub-factors in order to identify behavioral intention to use mobile learning. In recent years, corruption in the public banks is a significant problem and challenge that has led their managers, as well as leaders of countries to try to find a solution to reduce corruption. On the other hand, the capabilities of blockchain technology can be considered as

an option in order to clarify and reduce administrative corruption in public banks. The implementation of blockchain technology can provide a deep transformation in public banks, which aims to provide timely and better services to customers. Therefore, this paper with a theoretical contribution as presenting a new behavioral model of blockchain technology acceptance in public banks can help managers and leaders to know the prominent factors to achieve higher acceptance of blockchain technology.

References

Ahmadi, M., Rousta, A., Maleki, M.H., Asayesh, F. (2022). Future Study of Marketing in the Banking Industry with a focus on Blockchain Technology. *Journal of System Management*, 8(32), 133-146. 10.30495/jsm.2022.1967454.1687

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211. http://dx.doi.org/10.1016/0749-5978 (91) 90020-T.

Akbari, P., Darabi, A. (2016). Factors Affecting Customer Satisfaction, Quality Banking Services to Iran, Using the Servqual Model (Case Study: Resalat Bank of Kermanshah Province). *Journal of System Management*, 2(4), 95-109. https://sjsm.shiraz.iau.ir/article_525694.html

Albayati, H., Kim, S.K., Rho, J.J. (2020). Accepting financial transactions using blockchain technology and cryptocurrency: A customer perspective approach. *Technology in Society, 62*, 101320, https://doi.org/10.1016/j.techsoc.2020.101320

Amini, M., Alinezhad, A. (2016). A Practical Common Weight Scalarizing Function Approach for Technology Selection. *Journal of System Management*, 2(4), 17-23. https://sjsm.shiraz.iau.ir/article_525689.html

Chao, C.M. (2019). Factors determining the behavioral intention to use mobile learning: An application and extension of UTAUT model. *Frontiers in Psychology*, 10(1652), 1-14. https://doi.org/10.3389/fpsyg.2019.01652

Ebrahimi, M., Yeganegi, K. (2023). Identifying and ranking the success factors of technology transfer in Iran's banking industry. *Islamic Economics and Banking*, 12(42), 239-271. http://mieaoi.ir/article-1-1254-en.html

Esposito, C., De Santis, A., Tortora, G., Chang, H., & Choo, K. K. R. (2018). Blockchain: a panacea for healthcare cloud-based data security and privacy? *IEEE Cloud Computing*, 5(1), 31–37. https://doi.org/10.1109/MCC.2018.011791712

Farsijani, H., Karampour, A. (2022). Evaluating the level of readiness to apply blockchain technology in Iran's National Gas Company. *Production and Operations Management*, 13(3), 1-23. 10.22108/jpom.2022.132345.1426

Fishbein, M., & Ajzen, I. (1981). On construct validity: a critique of Miniard and Cohen's paper. *Journal of Experimental Social Psychology*, 17(3), 340-350, https://doi.org/10.1016/0022-1031(81)90032-9

Gholamian, M., Hakimpour, H., Kafashpour, A., Mahmoudzadeh, M. (2021). Barriers to the implementation and use of internet banking in the Keshavarzi Bank. *Journal od System Management*. 7(4), 49-67, 10.30495/jsm.2021.1942650.1539

Heidari, H., Alborzi, M., Radfar, R., Mousakhani, M., Divandari, A. (2019). Explaining the blockchain acceptance indices in Iran fnancial markets: A fuzzy delphi study. *Journal of Money and Economy*, 14(3), 335-365, http://jme.mbri.ac.ir/article-1-445-en.html

Hosseini Sarkhosh, S.M. (2022). Prioritizing the factors related to the adoption of blockchain technology in the electronic health record system. *Journal of Health Information Management*. 19(2), 71-78. https://doi.org/10.48305/him.2022.39259.1029

Kafashian, M. (2009). The application of technology acceptance theories in the evaluation of library information technologies: a textual research approach. *Journal of Librarianship and information*, 52 (4), 1-17 [In Persian].

Khorashadi-Zadeh, M.H. (2017). Electronic Services (IT) in the Banking and Financial Institutions. Journal of System Management. 3(4), 59-80. https://sjsm.shiraz.iau.ir/article_535136.html

King, W. R., & He, J. (2006). A meta-analysis of the technology acceptance model. *Information and Management*, 43(6), 740–

755. https://doi.org/10.1016/j.im.2006.05.003

Marangunić, N., & Granić, A. (2015). Technology acceptance model: a literature review from 1986 to 2013. *Universal Access in the Information Society*, 14(1), 81–95. https://doi.org/10.1007/s10209-014-0348-1

Mohtaramzadeh, M., Ramayah, T., Hwa, C.J. (2017). B2B e-commerce adoption in iranian manufacturing companies: Analyzing the moderating role of organizational culture. *International Journal of Human–Computer Interaction*, http://dx.doi.org/10.1080/10447318.2017.1385212

Momani, A.M., Jamous, M.M. (2017). The evolution of technology acceptance theories. *International Journal of Contemporary Computer Research (IJCCR)*, 1(1), 51-58. Available at SSRN: https://ssrn.com/abstract=2971454

Momeni Rad, A. (2012). Qualitative content analysis in research: nature, stages and validity of results. *Educational Measurement Quarterly*, 4(14), 187-222 [In Persian]. https://jem.atu.ac.ir/article_92.html?lang=en

Mostafavi, N., Ebrahimi Ordeklou, F., Abbasi, A. (۲۰۱۸). The application of blockchain technology in the banking industry. The second international conference on new research solutions in management, accounting and economics, Iran.

Oh, S.-C., Kim, M.-S., Park, Y., Roh, G.-T., & Lee, C.-W. (2017). Implementation of blockchain-based energy trading system. *Asia Pacific Journal of Innovation and Entrepreneurship*, 11(3), 322–334. https://doi.org/10.1108/apjie-12-2017-037

Post, R., Smit, K., Zoet, M. (2018). Identifying factors affecting blockchain technology diffusion. Twenty-fourth Americas Conference on Information Systems, New Orleans.

Rahimi, A., Taghizadeh, Q., Mahmoudabadi, S. (2022) Presenting an interpretive structural model of obstacles to the application of blockchain technology in the supply chain of the food industry. *Production and Operations Management*, 13(1), 79-104 [In Persian]. 10.22108/jpom.2022.131836.1412

Rezaie, S., Mirabedini, S.J. and Abtahi, A. (2017) Identifying key effective factors on the implementation process of business intelligence in the banking industry of Iran. *Journal of Intelligence Studies in Business*. 7 (3) 5-24. https://doi.org/10.37380/jisib.v7i3.276

Ronaghi, M.H. (2022). Blockchain technology acceptance in Iran's banking industry. *Journal of Improvement Management*, 16 (1), 30-53 [In Persian] DOI: 10.22034/JMI.2022.290213.2590

Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic-dialectical perspective. In E. L. Deci & R. M. Ryan (Eds.), *Handbook of self-determination research* (pp. 3–33). University of Rochester Press.

Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78. https://doi.org/10.1037/0003-066X.55.1.68

Safa, N.S., Solms, R.V. (2016). An information security knowledge sharing model in organizations. *Computer in Human Behavior*, 57, 442-451. DOI: 10.1016/j.chb.2015.12.037

Sikorski, J. J., Haughton, J., & Kraft, M. (2017). Blockchain technology in the chemical industry: machine-to-machine electricity market. *Applied Energy*, 195, 234–246.https://doi.org/10.1016/j.apenergy.2017.03.039

Shrestha AK, Vassileva J, Joshi S, Just J. (2021). Augmenting the technology acceptance model with trust model for the initial adoption of a blockchain-based system. *PeerJ Computer Science* 7:e502 https://doi.org/10.7717/peerj-cs.502

Triandis, H.C. (1979). Values, attitudes, and interpersonal behavior. *Nebraska Symposium on Motivation*, 27, 195–259.

Tornatzky, L. and Fleischer, M., (1990). The process of technology innovation, Lexington, MA. Lexington Books.

Tyan, I., Yagüe, M., Guevara-Plaza, A. (2020). Blockchain adoption in Tourism: Grounded theory-based conceptual model. *Journal of Tourism Research*, 10(1), 68-89/ ISSN: 2014-4458. https://raco.cat/index.php/ARA/article/view/385950.

Valikhan Sayyah, M., Aghajani, H.A., Agha Ahmadi, G.A., Rahmaty, M. (2022). Analyzing dimensions, consequences, and inequalities of organizational citizenship behaviour in non-governmental

organizations of crisis management (experimental evidence: Red Crescent Society of the Islamic Republic of Iran). *Journal of rescue and relief* 14 (3), 163-175. 10.32592/jorar.2022.14.3.2.

Venkatesh, V., & Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. *Decision Sciences*, 39(2), 273–315. https://doi.org/10.1111/j.1540-5915.2008.00192.x

Venkatesh, V., Morris, M. G., Davis, G. B., and Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27(3), 425–478. https://doi.org/10.2307/30036540, https://www.jstor.org/stable/30036540

Venkatesh, V., & Davis, F. D. (2000). A theoretical extension of the technology acceptance model: Four longitudinal field studies. *Management Science*, 46(2), 186–204. 10.1287/mnsc.46.2.186.11926

Xu, M., Chen, X., and Kou, G. (2019). A systematic review of blockchain. *Financial Innovation*, 5(1) https://doi.org/10.1186/s40854-019-0147-z

Yeganegi, K., Ebrahimi, M. (2022). Identification and ranking of barriers to technology transfer from the perspective of electronic banking (Case study: Maskan & Meli Banks of Iran). *Commercial Surveys*, 10.22034/bs.2022.558197.2601.

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