

RESEARCH ARTICLE

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Future Study of Marketing in the Banking Industry with a focus on Blockchain Technology

Majid Ahmadi¹, Alireza Rousta^{2*}, Mohammad Hasan Maleki³, Farzad Asayesh⁴**Abstract**

The aim of the current research is to identify the futures of marketing in the banking industry with a focus on blockchain technology. The current research is applied in terms of direction and has a mixed methodology due to the use of qualitative and quantitative methods together. The theoretical population of the research was experts in banking marketing and digital financial technologies, especially blockchain, and the sampling method was done in a judgmental method. The sample size in this study was equal to 15 people. For data analysis, meta synthesis methods, Binominal's statistical test, developed Copras and root definitions tool were used. The tools of data collection in this research were interviews and questionnaires (expert evaluation and priority evaluation questionnaires). 47 drivers were extracted from meta synthesis and these drivers were classified into nine main drivers. The drivers of the research were screened in two stages using theory-based inference screening and Binominal's test, and 12 drivers were considered for prioritization using the Copras technique. The remaining drivers were evaluated using the Copras technique and three criteria of importance, degree of certainty and experts' expertise. The findings showed that the drivers of marketing researchers' interest in digital financial technologies and blockchain and the development of decentralized banking had the highest priority and were selected for scenario planning. Based on these two drivers, four scenarios of crypto bank, conservative banking, pioneer banking and traditional banking were developed. The research proposals were proposed based on the important drivers and the desired scenario (crypto bank).

Keywords: Future, Future Study, Banking Industry, Marketing, Blockchain Technology.

Introduction

The banking industry contributes to sustainable economic development by facilitating financial services that deal with funds, payments and transfers to individuals and businesses, and plays a vital role in the economy (Amadeo, 2021). Today, banks are constantly exploring new ways to complete transactions faster to improve customer service by ensuring transparency for

customers while ensuring cost efficiency (Zheng et al. 2017). Increased security and efficiency can benefit many sectors, including banks (O'Leary, 2017).

Today, in the era of digital transformations, the use of financial technologies has become an integral part of the banking industry (Moradi, Naderi & Delangizan, 2020). Fintech uses products and companies that have developed new

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digital and online technologies in the banking and financial services industries (Aggarwal & Stein, 2016). Blockchain is one of the technologies with significant potential in fintech (Berg et al., 2019). Blockchain is a new technology that has attracted the attention of many researchers in the financial industry in recent years. Blockchain is a technology that allows digital data to be stored in a public and shared database (CoinTelegraph, 2021). Also, blockchain is a system of recording information in a way that makes it impossible or difficult to change, cheat the system or hack (Zhang, Xue & Liu, 2019). Leading banks and financial organizations are exploring the possibility of using blockchain technology in various aspects of their operations, including payments, transactions and other transaction-based activities (Beck & Muller-Bloch, 2017). Fraud reduction, business platform, customer differentiation and bank payments are among the most basic applications of blockchain in the banking sector (Tandon et al., 2021).

In the near future, the applications and areas of use of blockchain technology will be significantly developed in all areas of banking, especially marketing. This technology increases productivity, speed, security and reduces costs in most operations, and as a result, it will significantly improve the quality of banks' services to end users. The proper use of this technology in banking marketing requires knowing the drivers and futures of banking and banking marketing with a focus on blockchain technology. By knowing these drivers and futures, it is possible to plan correctly in the present, and instead of a passive approach to the future, we can make future plans in the field of using blockchain technology in the banking sector. According to these considerations, the current research seeks to identify the future study of marketing in the banking industry with a focus on blockchain technology.

The summary of the research conducted in the field of the future of banking, the future of banking marketing, the future of financial

digital technologies and blockchain shows well the research gap in the field of the future of banking marketing and the future of marketing in the banking industry with a focus on blockchain technology. The closest researches to the present research in the country, the research of Nejati Rashtabadi et al. (2021), about the trust in blockchain-based digital advertising and Khalili et al. research (2021) is about the indicators for evaluating the readiness of commercial banks to use blockchain technology. These two researches have a contemporary and operational view of banking marketing and banking. If in the current research based on a strategic and future-oriented approach, future scenarios are identified. Also, unlike the previous two researches, this research has not considered only one specific aspect of marketing (trust) and banking (measurement of readiness level). Also, two previous researches in the field of banking and marketing were done separately, while the present research focuses on both issues.

Literature Review

Regarding the future of the banking industry, researches have focused on identifying the future trends of banking. These studies have tried to explain the types of trends that affect the future of banking, especially in America and Europe (Aliyu et al., 2017). More recent research on the future of banking has emphasized examining the future of banking with a focus on digital financial technologies. For example, Murinde, Rizopoulos & Zachariadis (2022), have researched the opportunities and risks of fintech for the future of banking. Üçoğlu (2022), in a research, has examined the opportunities and challenges of blockchain on the future of banking. Cucari et al. (2022), in another study, have analyzed the impact of blockchain on the future of banking processes.

Regarding the future of banking marketing, there are few researches that have directly entered into this issue. Most researches have investigated this issue indirectly. The main topic of these researches

is to examine the future of digital banking, mobile banking, internet banking and banking services (Chauhan et al., 2022).

Many researches have been done on blockchain itself. Studies have focused on examining the future trends of blockchain, the future applications of blockchain in various fields and industries including energy, education, supply chain, health and treatment, and the application of the technology in other technologies such as big data, artificial intelligence, and the Internet of Things (Deepa et al., 2022; Siyal et al., 2019; Bhaskar, Tiwari & Joshi, 2020; Brilliantova & Thurner, 2019; Yang et al., 2018; Zheng et al., 2017; Brandon, 2016; Nguyen, 2016). Research closer to banking and marketing has also attracted the attention of blockchain researchers. For example, Nejati Rashtabadi et al. (2021), identified the concept of customer trust in blockchain-based digital advertising. The results of their study showed that blockchain technology, despite its transparent nature in transmitting information to the target audience, does not need to create trust. Technological and technical aspects alone are not enough to create trust in customers, and in the meantime, advertisers must pay attention to all human, organizational and technological characteristics. Khalili et al. (2021), In a research in the banking industry, they extracted indicators to evaluate the readiness of commercial banks to use blockchain technology. The results of the research showed that four organizational, technical, individual and environmental factors play a role as indicators of commercial banks' readiness to use blockchain technology. Organizational indicators included infrastructure development, managers' skills, human resource development, company or organization size, financial resources, receptive organizational culture, organizational policies, and top management support. The obtained technical indicators included complexity, technology security, access to technology, application of technology and expert manpower. Individual indicators included attitude toward use, ease

of use, perceived usefulness, and understanding of blockchain technology and finally, the environmental indicators included laws and regulations, technology maturity, information exchange, compatibility, market dynamics and government support. The interesting thing about this research was the similarity of some indicators of this research with the drivers of the research.

Research Methodology

The current research from the perspective of philosophical foundation, pragmatism; In terms of purpose, it is exploratory and in terms of orientation, it is practical. Also, the current research is a field study in terms of data collection and its methodology is mixed. In this study, meta synthesis techniques, binominal statistical test, developed Copras and root definitions tool were used for data analysis. meta synthesis techniques and tools of root definitions are qualitative, and binominal statistical test and Copras method are quantitative in nature. The theoretical community of the research includes banking marketing experts and financial digital technologies, especially blockchain. Sampling was done based on the expertise of experts in the fields of banking marketing and blockchain technology, and 15 people were selected as a sample. The criterion for choosing the sample size in this research is theoretical saturation. The data collection tools in this research are questionnaires and interviews. The method of root definitions is based on interviews, and the statistical test techniques of binominal and Copras focus on collecting questionnaires. The steps of the current research are:

- 1) Reviewing the background of the research to determine the key drivers affecting the future of marketing in the banking industry with a focus on blockchain technology: At this stage, at first, using meta synthesis, the key factors and drivers of the research were extracted.
- 2) Screening of research drivers: Due to the large number of these drivers, these factors

- were screened using binominal statistical test.
- 3) Determining the final drivers: using the developed Copras technique, the most important drivers were selected.
 - 4) Compilation of believable future marketing scenarios in the banking industry with a focus on blockchain technology using root definitions and brainstorming workshops.

Research Findings

In the meta synthesis method, the ultimate goal is to create a coherent impression of the extracted codes. Meta synthesis is a systematic review approach that clarifies the

discrete and ambiguous results of a subject area through synthesis and analysis. Meta synthesis is an approach to create a new pattern from existing refinements. In this study, all the extracted codes are analyzed, combined and classified by revisiting the concepts, and the recoding process is implemented with the intention of integrating the concepts. In table one, it is shown how to implement the analysis and combination of metacombination method by classifying the identified concepts and factors. In this table, 47 codes are classified in the form of 9 main drivers. These drivers have been obtained through meta synthesis and systematic background review.

Table 1.

Analysis of qualitative findings

	sub-criteria	main factors
Sundarakani, Ajaykumar & Gunasekaran, 2021	Data-driven decision-making culture	Cultural drivers
Saheb & Mamaghani, 2021	Attitude of senior managers of banks to digital technologies	
Dubey et al., 2020	Organizational culture of banks	
Ali, Ally & Dwivedi, 2020	Perceived benefits of blockchain from the point of view of bank managers	
Wang et al., 2021	Development of smart contracts	
Omarova, 2020	Regulation of legislative bodies on digital technologies	Legal drivers
Trillion, 2015	Integration of rules and standards of financial digital technologies	
Batubara, Ubacht & Janssen, 2018	The degree of transparency of financial and economic institutions	
Salami et al., 2021	Development of corporate governance in the country	
Digerly, 2019	The level of attention to the interests and views of the stakeholders of financial digital technologies in the preparation of legal drafts	
Nabilou & Prum, 2019	Legislation of the world's central banks on digital financial technologies	
Oad et al., 2021	Money laundering considerations	
Koshesh kordsholi et al., 2020	fee system	Technological drives
Madhani, 2022; Adelhani & Haghshenas Kashani, 2020	Marketing methods and strategies	
Bonsón & Bednárová, 2019	The penetration rate of other digital technologies such as big data, Internet of Things, artificial intelligence and business intelligence	
Qian & Papadonikolaki, 2020; Chammassian & Sabatier, 2020	The cost of transferring blockchain technology	
Ertemel, 2018	Desire to eliminate intermediaries and direct marketing	
Fisher, 2019	The emergence of new NFT strategies	

	sub-criteria	main factors
Zeadally & Abdo, 2019	Changing the shape and volume of information	
Lee & Shin, 2018	The growth of new technologies	
Berdik et al., 2021; Gholamian et al., 2021	The status of information technology systems in the banking sector	
Aghajani Mir, Rajabi Kafshgar & Arab, 2022	Scalability	
Banejad, Tabatabaie Nasab & Sadeghi, 2018	The level of cooperation of the country's banks in research and development projects	
Nejati Rashtabadi et al., 2021	Development of digital banking in the country	Structural and process drivers
Zheng et al., 2018	Development of decentralized banking	
Awotunde et al., 2020	Development of mobile banking	
Fernandez-Vazquez et al., 2019	The state of fintechns in Iran	
Vincent & Wilkins, 2020	Development of emerging financial markets in Iran such as cryptocurrency	
Cheng & Qu, 2020; Cole, Cumming & Taylor, 2019	How banks interact with fintechns	Drivers related to fintechns
Lee et al., 2021	Banks' investment in fintechns	
Lee & Shin, 2018	Diversity of business models in fintechns	
Dutta et al., 2020	Blockchain development in other industries and fields	
Gonzales, 2020	Intensity of competition	
Truby, 2018	Environmental challenges of blockchain and cryptocurrencies	
Payandeh, Shahbazi & Manteghi, 2021; Koshesh Kordsholi et al., 2020	The challenge of obtaining international licenses for Iranian fintechns	
Yusoff & Al-Harthy, 2018	Development of national cryptocurrencies	Environmental drivers
Payandeh, Shahbazi & Manteghi, 2021; Koshesh Kordsholi et al., 2020	International financial restrictions	
Lee & Shin, 2018; Koshesh Kordsholi et al., 2020	The volume of financial markets	
Leible et al., 2019	Fall or failure of blockchain-based projects	
Tang et al., 2014	The level of attention to consumer rights	
Shatri, 2019	Changing tastes of consumers of banking services	Jupiter drivers
Ali, Ally & Dwivedi, 2020; Aghajani Mir, Rajabi Kafshgar & Arab, 2022	Security and privacy considerations	Security drivers
Zheng et al., 2018	Risk management	
Chang et al., 2020	Blockchain adoption rate by retail investors and clients of financial institutions	
Zhou et al., 2020	Banks' human resources training	Drivers of awareness and information
Suryono, Budi & Purwandari, 2020	Financial literacy of users	
Ghosh, 2019	The interest of marketing researchers in digital financial technologies and blockchain	

Among the 47 drivers extracted from meta synthesis, 18 Drivers were excluded from the

analysis with the theory-based inference screen. Among the removed drivers, 16

drivers were removed due to being common and two drivers were removed due to overlap with other factors. In the following, the remaining 29 Drivers were analyzed with a statistical approach. Binominal's statistical test was used for the statistical screening of Drivers.

The output of the Binominal's test showed that 13 drivers of bank senior managers' attitude towards digital technologies are the development of smart contracts, the integration of rules and standards of financial digital technologies, marketing methods and strategies, the cost of transferring blockchain technology, the level of cooperation of the country's banks in research and development projects, decentralized banking development, banks' investment in fintechs, competition intensity, security and privacy considerations, bank manpower training, users' financial literacy and marketing researchers' interest in digital financial technologies and blockchain had a significance coefficient of less than five percent and were considered for final

prioritization with the developed Copras technique.

To prioritize drivers according to driver evaluation indicators (importance intensity, degree of certainty and degree of expertise of experts), Copras technique was used. The evaluation indicators of the drivers were obtained from the global business network approach.

The values of (s_{j-}) and (s_{j+}) show the scores of research factors for positive (importance intensity and level of experts' expertise) and negative (certainty) indicators. The relative importance value (Q_j) of each driver is calculated based on two indices (s_{j-}) and (s_{j+}) according to the fifth step formula. The higher the value of (Q_j) for a driver, the higher priority that driver will have. Finally, the index (N_j) is calculated by dividing the relative importance of each driver by the maximum value of (Q_j) multiplied by 100. The higher this number is, the more priority the desired driver will have. Table four shows the desired indicators for each driver.

Table 2.
Copras technique evaluation indicators

Drivers	s_{j+}	s_{j-}	Q_j	N_j	Drivers rating
Attitude of senior managers of banks to digital technologies	0/03	0/05	0/062	54/386	11
Development of smart contracts	0/041	0/033	0/089	78/07	3
Integration of rules and standards of financial digital technologies	0/039	0/038	0/081	71/053	5
Marketing methods and strategies	0/037	0/039	0/078	68/421	6
The cost of transferring blockchain technology	0/036	0/042	0/074	64/912	7
The level of cooperation of the country's banks in research and development projects	0/032	0/052	0/063	55/263	9
Development of decentralized banking	0/045	0/027	0/104	91/228	2
Banks' investment in fintechs	0/041	0/034	0/088	77/193	4
Intensity of competition	0/034	0/045	0/07	61/404	8
Security and privacy considerations	0/027	0/044	0/063	55/263	9
Banks' human resources training	0/026	0/058	0/054	47/368	13
Financial literacy of users	0/028	0/053	0/058	50/877	12
The interest of marketing researchers in digital financial technologies and blockchain	0/044	0/023	0/114	100	1

Based on the results of the developed Copras method, the drivers of marketing researchers' interest in digital financial technologies and blockchain and the development of

decentralized banking had the highest degree of priority and importance and were considered for mapping the research scenarios. Considering that for each engine,

two opposite situations can be considered, four scenarios were developed. These scenarios include: crypto banking,

conservative banking, pioneer banking and traditional banking.

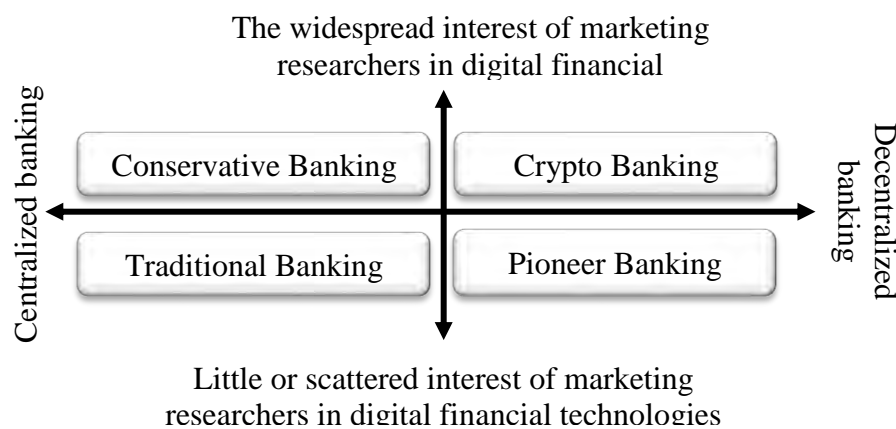


Figure 1. Research scenarios

A) Crypto banking: This scenario describes the most ideal situation regarding the future of marketing in banking with a focus on blockchain technology. The explanation and interpretation of the crypto banking scenario using the root definition tool is as follows:

Customers of the system or scenario: customers of the banking industry who have high financial literacy, the variety of banking services is important to them, and they have a positive view of decentralized banking services and digital financial technologies, including blockchain; System actors: senior banking managers, marketing managers and senior IT and marketing experts in the banking sector who have a strong desire to combine marketing methods with financial digital technologies, including blockchain technology; The process of conversion and transformation: providing decentralized financial services with great diversity based on smart contracts. Worldview of the system: Instead of destructive competition with fintechs and financial startups, their technological achievements can be used to develop decentralized banking and improve financial services. Owner of the system or issue: the central bank and the regulatory bodies that establish rules and standards for how to use blockchain in banking marketing.

System environment: the business environment of the financial industry, especially the banking sector. In this environment, banks and financial institutions, economic institutions and the central bank, fintechs and financial startups, and marketing and financial academic circles are influencing the output of banking marketing with a focus on blockchain.

B) Conservative banking scenario: In this scenario, despite the favor of digital technologies including blockchain by marketing researchers, banks and financial institutions do not want to change. The dimensions of the conservative banking scenario using the root definitions tool are: system customers or scenario: bank customers who use the usual services of centralized banks; System activists: managers and senior bank experts who do not want to change and do not accept the risk of accepting digital financial technologies such as blockchain in marketing and banking processes; The transformation process: providing banking services without cooperation with other banks and fintechs with little variety to customers; Worldview of the system: Fintechs are a major threat to the banking sector and their innovations weaken the banking sector; Owner of the system or problem: parallel regulatory

institutions whose intervention causes the suppression of innovation and increased concentration in the banking sector; System environment: the political, legal and technological environment and the actions of traditional banks that consider fintechs as their competitors.

C) Pioneer banking scenario: In this scenario, despite the lack of interest of marketing researchers in discussing blockchain, especially in Iran, bank managers try to use the benefits of this technology due to the development of this technology in various fields and industries. The explanation of the pioneer banking scenario using the root definitions tool is as follows:

Customers of the system or scenario: customers of financial services with a lot of diversity and high financial literacy, for whom transparency, security, speed and continuous availability are very important; System Activists: Bank managers who have a vision of the game try to provide distinctive financial services by cooperating with fintechs and financial startups and using decentralized finance and direct and indirect marketing; The transformation process: providing diverse banking services and implementing research and development projects in cooperation with other financial institutions, fintechs and even foreign banks; Worldview of the system: The spread of digital financial technologies and blockchain in all areas and industries will soon make it impossible for traditional bankers to continue their activities. Owner of the system or issue: In this future, the central bank and domestic regulators along with regional and foreign regulators will own the system or issue. System environment: the international dynamic environment of the financial industry. In this future, banks are not only under the influence of domestic technological and legal forces, but also the technological and legal changes of the international environment affect their activities.

D) Traditional banking scenario: This future somehow describes the worst

situation. On the other hand, there is no interest from academic circles for research in the field of blockchain and marketing, and banks are not interested in decentralized banking. The explanation of the traditional banking scenario using the root definition tool is as follows:

Customers of the system or scenario: Bank customers are forced to use the centralized services of banks due to the monopoly system, because there is no other alternative; System activists: managers and senior bank experts who are conservative and see decentralized finance as a big threat; The process of conversion and transformation: providing financial services with low and concentrated variety to banking customers; Worldview of the system: The development of decentralized banking based on digital financial technologies is not reliable and it is not possible to control them; Owner of the system or problem: domestic regulators along with large financial institutions such as banks and insurers who are constantly trying to marginalize fintechs; System environment: The business environment of the financial industry is governed by internal and highly centralized technological, legal and political forces.

Discussion and Conclusion

The current research was conducted with the aim of identifying plausible future marketing scenarios in the banking industry with a focus on blockchain technology in Iran. For this purpose, at first, through a systematic review of the background of banking marketing research, financial technology and blockchain, 47 effective key drivers on the future of marketing in the banking industry were extracted with a focus on blockchain technology. These 47 drivers were classified in the form of 9 main drivers. In the following, by applying two methods of theoretical inference and statistical analysis, unimportant drivers were left out and 13 factors remained. At first, the The secondary drivers of research were investigated using the two logics of generality and overlap. Based on this logic, 18 drivers were

removed. The remaining 29 drivers were analyzed using Binominal's statistical test. The result of Binominal's statistical test showed that 16 drivers have a significance coefficient higher than five percent and should be excluded from the analysis. 13 factors had a significance coefficient of less than five percent and therefore were selected for final prioritization. The screening of primary factors reduces the number of factors as much as possible. Reducing the factors helps a lot to improve the quality of the outputs of expert-oriented techniques such as Copras. Making decisions with the Copras technique by considering 13 factors, three evaluation indicators and 15 experts will not harm the consistency of the results of this method. This combination helps the reliability of Copras results.

The final residual factors will be analyzed by the developed Copras technique. For this purpose, the evaluation indicators of research drivers should be determined. These indicators were extracted from the global business network approach. These indicators were: The degree of certainty, the severity of importance and the level of expertise of experts. Two indicators of experts' expertise and intensity of importance have a positive nature, and the certainty index has a negative certainty. The weight of these indicators was obtained by the best-worst method. The degree of certainty with a weight of 0.54 was the most important index according to experts. Based on the output of Copras technique and considering the evaluation indicators of research drivers, the drivers of marketing researchers' interest in digital financial technologies and blockchain (0.114), development of decentralized banking (0.104), development of smart contracts (0.089), investment of banks in fintechs (0.088), integration of rules and standards of financial digital technologies (0.081) and marketing methods and strategies (0.078), respectively, are most important in terms of influencing the future of marketing in the banking industry with a focus on blockchain technology.

According to the results of Copras technique, the two driving forces of marketing researchers' interest in digital financial technologies and blockchain and the development of decentralized banking were used to develop scenarios. Each of the drivers had two opposite modes, and by combining them, four scenarios of crypto banking, conservative banking, pioneer banking and traditional banking were obtained. For example, the crypto bank scenario was obtained from the intersection of decentralized banking and the great interest of marketing researchers in blockchain. The crypto bank scenario represents an optimistic scenario, the traditional banking scenario represents a pessimistic scenario, and finally, the other two scenarios are intermediate scenarios.

In future study research, the best approach for making suggestions is to use the findings and drivers of the research itself and pay attention to the desirable or ideal scenario. In the following, the practical suggestions of the research are presented.

Banks' support for organizational training in the field of financial digital technologies and blockchain will ensure the acceptance of this technology and its successful implementation in the financial industry. This training should not only be considered for employees and middle managers, but also senior managers should be familiar with this technology and its benefits. Marketing and financial technology researchers also help organization managers and financial users to have a correct understanding of this technology with their research on blockchain applications in the financial industry and the challenges of this technology. In addition to supporting fintechs, banks should support applied and interdisciplinary research in this field in the form of a research project. In addition to banks, governments, the central bank, the Ministry of Economy, Safety and Communications and Information Technology, universities, growth centers and science and technology parks play an important role in accepting digital financial technologies in society. The support of

governments and executive bodies can be in the form of legislation and regulation, accreditation, infrastructure development, culture building, helping banks to facilitate change, defining national projects and consulting.

The cooperation of the country's banks will reduce the risk of blockchain technology entering the banking industry. Financial technologies need the cooperation of many financial structures and institutions to be successful. The secret of banks' success in decentralization is their cooperation and coherence. Also, the movement of the banking sector towards digitalization and the growth of mobile banking will provide the necessary flexibility for further changes for both executives and customers. The cooperation of fintechs to develop their innovations on mobile phones instead of the web will also help the mainstreaming of blockchain-based financial services.

Fair and appropriate regulation plays an essential role in the movement of banks towards decentralization. If the regulator has supportive and neutral rules towards financial startups, then fintechs and startups can work together to transform financial processes and financial services. The organizational structure of financial startups and fintechs is agile and decentralized, and the cooperation of banks with these startups will lead the structure and services of banks to decentralization. In addition to impartial regulation, financial standards and integrity of laws are also important. Regulatory integration helps the growth and stability of fintechs and financial startups a lot. The growth and stability of fintechs will make banks not look at them as competitors and reduce their research and development costs by strategic partnership and cooperation with them. Reducing the costs of blockchain implementation will reduce the technology transfer costs and make its use pleasant for the senior managers of banks. Another issue regarding the decentralization of the banking sector is the development of the use of smart contracts. Some of the legal measures to remove the obstacles to the advancement of

smart contracts are: Allocation of digital signatures with individuals to identify their identity and assets; Approval of laws to provide for ceremonies; Adoption of laws to increase the guarantee of the performance of contractual obligations in contractual transactions by natural and legal persons; Membership in international conventions, such as the Convention on Standardization of Transactions Based on Digital Currencies approved in 2017; Approval of laws by the regulator to accredit and support the applications of blockchain and digital currencies in the financial markets of the country.

In relation to the research proposals, it is possible to mention the future research of other areas of the financial industry, such as insurance, focusing on blockchain technology and identifying the challenges of this technology for the financial industry.

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