



Identifying The Key Elements OF Lend Tech In Iran's Banking System

Zahra Hji Ashrafi

PhD student of Financial Engineering, Department of Accounting and Management, Roudehen Branch, Islamic Azad University, Roudehen, Iran.
Zahra.hajjashrafi1987@gmail.com

Narges Yazdani

Assistant Professor of Accounting, Department of Accounting and Management, Roudehen Branch, Islamic Azad University, Roudehen, Iran.
(Corresponding Author)
nargesyazdani@gmail.com

Kiumars Arya

Assistant Professor of Economical science, Islamic Azad University, Roudehen Branch, Tehran, Iran
kiumarsarya86@gmail.com

Hoda Hemmati

Assistant Professor of Accounting, Department of Accounting and Management, Roudehen Branch, Islamic Azad University, Roudehen, Iran.
hemmati.hoda@gmail.com

Submit: 29/01/2023 Accept: 20/02/2023

ABSTRACT

This article has a special focus on the effective factors of Lend Tech in the banking system of Iran and its purpose is to identify the factors of Lend Tech in order to improve the lending process and reduce credit risk in banks and financing institutions. The current research is of a quantitative-exploratory type, which provides a comprehensive framework of the key elements of the digital lending model (Lend tech) in the banking system in Iran as an Islamic country. In this research, with the aim of determining the key elements of the digital lending platform (Lend Tech), the research literature was reviewed using the content analysis method; Then, the key elements of the digital lending platform were classified into two levels of concepts and key factors. Finally, in order to ensure the confirmation of these cases, the Delphi method was used to examine the opinions of experts and specialists in the financial field. The research results provided a list of four key concepts, including the identification of regulations related to digital lending in banks and financial and credit institutions, the identification of internal ecosystem entities, the identification of external ecosystem entities, the identification of interface system components (partners) and 16 key factors. All of which were approved by experts and experts in this profession. This framework can help to define the variables that are carried out in the future research by referring to the valid literature in the field of digital lending in the domestic field.

Keywords: Fin Tech, digital lending, content analysis, Delphi method.



1. Introduction

Financial technology (Fintech) or in simpler terms the innovative use of technology in providing financial services is one of the most important innovations of the financial industry, which tries to bring innovation to the field of financial services by using modern technology, and this is due to the sharing of the economy. The desirable behavioral rules are information (Lee and Shin, 2018). Among the many services that banks provide, they are, first of all, suitable places for depositing money, saving and recovering cash, which are used with various methods for Moving in the digital space, banks and financial institutions make access to financial resources easier than ever. From fully mobile banking and peer-to-peer payments to AI-enhanced chat bots and anti-money laundering software, these fin tech examples of companies and services across the industry are bringing banking into the digital age. Fin Tech equips the banking industry with tools that make it more efficient than ever. Banking institutions use tools such as chat bots to improve customer experience, mobile apps to check customers' bank accounts in real-time, and machine learning to protect against fraud (Alyssa Scherer, 2019). Banks that use Fin Tech have a long-term perspective for successful development and high competitiveness. Fin Tech is an active, developing industry at the intersection of financial services and advanced technologies. It is a powerful engine of technological progress that increases the influence of global technology every year, and when it drives the development of innovative technologies, it requires a new level of speed and flexibility of the IT industry. In particular, financial market giants are active supporters of fin tech penetration in all business sectors and stimulate the emergence of new technologies and tools for monetary transactions. (Music, 2022)

In the meantime, Lend Tech is considered one of the sub-branches of Fin Tech technology, whose technology aims to make it easier for companies, investors and people to access financial resources. In fact, among the various fields of Fin Tech, lending or lend Tech is considered one of the most important and practical sectors. In the word "lend Tech" means technology in lending and refers to the use of technology in the field of lending. Lend Tech is a digital platform for "It's about connecting lenders to borrowers." Also, by using new technologies, Lend Tech has created a platform for attracting capital from

lenders and investors and transferring it to loan applicants, or borrowers. In this way, the lending process is fast for both banks, financial institutions, individuals and loan applicants. It becomes easier, more transparent and fairer. In this regard, after the financial crisis of 2008, Fin Tech lenders increased lending to small businesses to be an alternative to reducing the level of lending by banks (Shun Gopal and Schnabel, 2021). Researchers found that the quality of Fin Tech borrowers improves over time and, on average, Fin Tech borrowers have higher incomes, better education, higher credit scores, and greater access to credit than bank borrowers (DiMaggio and Yao, 2021). They argued that how the customer-oriented process in services is considered important and is influenced by the development of the digital application platform (Syed and Angelita , 2019). Given that digital transformation should be reflected during customer operations and during daily business. find It refers to the integration or organization of technologies used in separate areas (Bullard, 2017). In this regard, the implementation of the software system should meet these business goals, which include: shorter time to market, higher quality, lower cost. To support the maintenance and development. It is also important to mention that the architecture of the Lend Tech model means starting from the specifications of the systems structure along with its rules and principles. It is the work plan that guides the project team in creating correct software codes (Jacobson, 2017). In addition to the fact that the digital lending system itself is part of the organizational system of banks or Fin Tech. To understand the whole flow of the process, we must look at the architecture of its organizational structure. The implementation of digital loans is usually a part of the bank's digital transformation (Amorim et al., 2018). In order to compete in this field, all agents and players in digital loans must have a strong and flexible architecture. The architecture should be highly scalable, to facilitate the rapid adoption of new technologies, but also flexible enough in resource management to allow legacy systems to remain intact or only have minimal impact if changes are made Have (Hong Lin, 2017).

In Asia, and especially in China, they found that Fin Tech borrowers had more car loans, mortgages and access to credit than bank borrowers. Although they have less income and education and are less employed than the latter (Bao and Huang, 2021). According to

the above-mentioned contents, all the components of digital lending, whether it is the type of digital assets or the use of labor Work is highly scrutinized in banking. The change and transformation in the digital field has caused a change in the ways of banks towards industry and business (Gandhi, 2016).

Today, we see the amazing growth of technology all over the world and the full confrontation of modern computer tools against traditional tools. (Behnam Shushtri, 1400). One of the necessities that makes the existence of Land Tech in Iran urgent is the inadequacy in the field of lending and optimal allocation of resources in small and fast-yielding enterprises, among them digital lending, as the latest technology in the lending sector, issues related to the slow access to credit. A group in the financial services industry considers the development of Fin Tech as a threat to the traditional banking industry, and some believe that Fin Tech is a challenge that can be turned into an opportunity (Moradi, 1400).

The present study, by providing a comprehensive presentation of the key elements of the digital lending platform in the banking system and content analysis, tries to show what measures Iran should take in order to properly apply this technology in the field of banking. The literature review shows that although there have been extensive researches in various areas of lending, a comprehensive framework of the key elements of the lending platform with the Lend Tech approach has not yet been provided. A framework in which a model can be designed so that banks in the Islamic financial system can offer digital lending services to customers with a Lend Tech approach and make the lending path shorter and the services in this field more diverse and the resources towards guide real consumption and micro production enterprises and be a cure for Iran's sick economy. In the following, among the other necessities of the existence of Land Tech in the banking system is to make the payment system comprehensive and avoid crediting in such a way that in addition to the optimal allocation of resources, it prevents any corruption and rent-seeking in the field of credit. Therefore, in this research, an attempt has been made to provide a comprehensive framework of the key elements of the digital lending platform (Lend Tech) by reviewing and analyzing the content of the research literature, and by benefiting from the opinion of experts and specialists in the financial profession using the Delphi method, to

confirm this The assurance framework is achieved. It is worth mentioning that in the field of lending with the Land Tech approach, the present study is the first study that identifies the key factors and elements of the digital lending platform, and the output presented from it can be used as input for future articles in this field. It should be considered and in this way help the development of knowledge in this sector.

The research structure continues as follows; First, the background of the research has been examined, and after that, a description of the research methodology including the implementation process, data collection method and tools, the validity and reliability of these tools and the population and statistical sample is provided. In the following, a detailed description of the research findings is given and the results are analyzed and reviewed. Finally, suggestions for future research will be provided.

2- Theoretical foundations and research background

The literature review shows that many researches have been done in the field of digital lending platform (Lend Tech). Since in this research we intend to find out the key elements of digital lending by analyzing the content of lending technology literature, the group The thematic classification of the research done in this regard can be a good guide. In recent years, researchers have reviewed the literature in the field of Fin Tech, among which the following can be mentioned:

Jagtiani and Lemieux (2015; the extent of Fin Tech influence), Pulaski et al (2016; new approach to banks and the transformation of the payment system), Chen et al. (2017; the transition from traditional banking to Fin Tech banking), Zalan (2017; Fin Tech) in emerging markets), Van limpart (2017; System approach in Fin Tech banking industry), Han Ji et al. (2017; The impact of Fin Tech on competition and stability in banking), Li Wai et al. Fin Tech on the share price of small banks), Coetzee (2018; review of Fin Tech literature in South Africa), Jagtiani (2018; Fin Tech activity in untapped areas of banking), Sonson et al. (2019; financial ecosystems, fin startups) single). In this way, many researchers from all over the world have studied Fin Tech literature and its derivatives in different regions of the world with the aim of documenting how the financial system

functions changes in response to the changes in business practices around the world. Other topics that Fin Tech studies have focused on worldwide can be grouped as described in Table 1:

Table 1. Thematic grouping of digital lending literature

Authors	topic
Ahmed and Haroon (2002), Adel Khaki and others (2011), Saleh Nowrozi (2016), Sheikh et al. (2018), Amin et al. (2014), Mohammad (2003), Hasbi (2005), Hassan (2007), Farhad et al. (2018), Abolfazl (2018), Alam and Gupta (2017), Big et al. (2018), Shafaq and Dezfulinejad (2016), Ghaemi et al. (2016), Farmansia and Ramdani (2018)	Laws related to Islamic banking
Milian et al. (2019), Miskam et al. (2019), Hasbi (2005), Ala Abed and Mirakhor (2017), Farmansia and Ramdani (2018), Mohammad (2011)	Laws related to Islamic fintech
Miscom (2019), Colgin et al. (2004), James et al. (2017), Rapa Kadeva (2011), Marius (2014), Kalo et al. (2018), Corneli and J. Frost (2019), Bao and Huang (2021), Hong Lin (2017), Tang (2019)	Electronic financing
Miscom (2019), Han (2002), Zalan and Tufili (2017), Jin Wang et al. (2019), Weissenberg (2019), Bao and Huang (2021)	Monitoring and controlling credit risk factors and trying to reduce it
Han (2002), Bulat (2016), Zalan and Tufili (2017), Jin Wang et al. (2019), Ra Pa Kadeva (2011), Martinez Priya (2008), Miscom (2019), Jagtiani and Lemieux (2018), Bank Central Malaysia (2020), Ghaemi et al. (2016)	The platform of the new electronic lending system
Rahim et al. (2019), Mohammad (2003), Homayun (2009), Hasbi (2005), Hassan (2007), Farhad et al. (2019)	Jurisprudence Committee
Davis and his points (1996), Davis (1989), Chavoho (2001), Rogers and Shoemaker (1983), Hong and Lu (2016), Fishbein and Ajzen (1975), Davis (1989), Chavoho (2001), Lee et al. (2007), Garwal and Prasad (1998), Amin et al. (2014), Keljin et al. (2004), Ramaya et al. (2017), Sheikh et al. (2018), Karahana and Straub (2016), Syed and Angelita (2019)	Acceptance of technology by customers
Milian et al. (2019), Abraham Leon Bettinger (2019), Gopi and Ramaiah (2007), Amako et al. (2007), Challenges (2017), Lee and Shin (2017), Nemet (2009), Behnam Shushtri (1400), Hong Lin (2017), Chen, Huang, Lin Wesheng (2021), Ben David, Johnson and Stolz (2021)	Information Technology
Amin et al. (2014), E. Savi (2013), Bhata Cherji (2000), Ebrahim et al. (2005), Hayes et al. (2014), Plasik and Piotrowski (2018)	E-commerce services
David Varga (2017), Douglas et al. (2016), Barberry (2016), Ross et al. (2016), Professor Horoff et al. (2016), Vikas Sangwan (2019), Anjan Thakur (2019), John Frost et al. (2021), Mancilla et al. (2018), Nicoletti (2017), Roubini (2017), Arner et al. (2017), Kilber et al. (2021), Behnam Shushtri (1400), Emorim et al. (2018), Ben David, Johnson and Stolz (2021)	Fin Tech
Hoi Ho (2019), Keating (2019), Dersch et al. (2018), Kami et al. (2017), Samitsu (2017), Carney (2017), Frigen et al. (2017), Gambacorta, Huang, Lee, Qiu et al. Chen (2022), Emorim et al (2018)	Digital platform

In this research, in order to draw the model of digital loan with the Land Tech approach, some key elements of digital lending have been pointed out, which were also a suitable guide for conducting the present research. Despite this, the literature review indicates that no research has been done so far with the aim of providing a comprehensive framework of the key elements of the digital lending platform, and the present study has helped to fill this gap.

3- The main goal of the research

As stated in the previous section, the main purpose of this research is to compile and identify the key elements of Land Tech in Iran's banking system. Digital lending is one of the categories that has been discussed at the global level for several years and is

known in the financial world, but in Iran it has not been seriously addressed yet, hence the researcher is trying to rely on the literature. In-depth research and study of the relevant laws has tried to design and present the key concepts, factors and dimensions of Land Tech with regard to Iran's banking system. In this matter, the researcher has researched and studied the viewpoints and points of view of the activists. In this way, the approach of this research is a quantitative approach. The quantitative approach is based on the paradigm of positivism. According to the positivism approach, in order to understand the social reality, one should use the same tools and methods specific to the understanding of the natural reality. In this research, the researcher tries to take into account the innovation aspect of the model presented in the field of lending in

expressing the key factors and concepts of the content analysis method and determining the sub-set components, as well as to validate the main components presented in the model. through a survey of experts in the credit department of banks under the supervision of the central bank and using the Delphi method, and finally, according to the understanding and study experiences of the researcher and in accordance with the documentation, the results of the two mentioned methods will present the model of digital lending.

4-Research methodology

This research has been carried out in two general steps as follows:

The first step is to determine the key elements of the digital lending platform with the Land Tech approach: for this purpose, the content analysis method of the research literature was used by searching for various keywords such as: "FinTech and Bank" in the title and keyword section in reliable scientific information sources. available such as ProQuest, Elsevier, Emerald, Wiley Online, Science Direct, etc., as well as the Google Scholar search engine, 114 texts, including research and promotional articles, master's and doctoral theses, conference or seminar reports, were obtained by examining 95 texts were found suitable for content analysis and searching for concepts and key factors of the digital lending platform. Coding elements of the lending platform with the Land Tech approach: a complete list of all the variables and aspects of lending technology that was used in the selected texts was prepared with the help of Excel software, and in parallel, similar items in 16 floors with the title The key factors of digital lending were placed. Then, based on thematic similarity and referring to the concepts used in the research literature, these cases were placed in four general categories with the title of key concepts of digital lending

The second step of validating the key elements of digital lending: Delphi method was used to determine the validity of the key concepts and factors of the digital lending platform from the point of view of experts and experts in the financial profession.

As described in the previous section, two methods of content analysis and Delphi have been used to conduct this research and collect and analyze data. Due to the fact that the concepts in the topic of lending were self-evident and obvious and did not need to be

discovered and deduced from the hidden layers of the texts, the primary definition of content analysis, i.e. measuring the frequency of symbols or other various categorical units, has been used. In this method, coding was done through the nominal measurement of categories and thus the key concepts and factors of digital lending were extracted and classified. In the implementation of this stage, attention was also paid to the number of repetitions of digital lending concepts and factors, and key items were selected based on the frequency of repetition. In the second step of the research, in order to confirm the validity of the key concepts and factors of digital lending, the Delphi method, which is the main tool for collecting data in the questionnaire, has been used.

One of the validity measurement criteria is content validity. In the current research, the questionnaire contained the results of content analysis, and in the preliminary stage, by asking open questions in the questionnaire, the experts were requested to give their opinion on each of the "yes" or "yes" aspects of the items in addition to confirming or rejecting them. By choosing the options of digital lending, he announced and provided suggestions in this regard if necessary, he assured of this. It is worth mentioning that the "Questionnaire" and "Content Analysis" can be compared to the confirmation of the validity of the questionnaire prepared in the first to third stages of the Delphi method, the result of modifying the preliminary stage questionnaire by applying the opinion of experts. On the other hand, one of the simple methods to verify the reliability and validity of content analysis is to use the "inter-coder reliability" method. In the present study, this method was implemented and the reliability coefficient was obtained for two levels of concepts and factors, 94 and 98% respectively, which shows the high reliability of the two coders. The reliability of the questionnaire was also checked by calculating Cronbach's alpha coefficient. For this purpose, using SPSS software, Cronbach's alpha coefficient for the first stage questionnaire (questionnaire with closed items) was obtained as 0.81, which indicates the acceptable and desirable reliability of the questionnaire¹.

¹ -Inter-Coder Reliability

In this method, parts of the analyzed cases are coded by at least two researchers and their difference is measured. In order to calculate the reliability level of the model, the C.R

4-1- Society and statistical sample

In the second step of the research, the statistical community included experts and experts in the auditing profession with the following conditions:

1. People working in the financial profession with a master's degree who have at least two years of experience in this field; or people with an expert degree who worked in the financial profession for more than three years; or specialized academics who have taught finance at the master's or doctorate level and have written books in this field.

Due to the fact that the names of all the people of the statistical community described above were not available, the target sample should have been selected from among the available people. In this way, the snowball or chain sampling method was used. Finally, among the 65 experts and experts we consulted, 45 people cooperated with us in the implementation of this research.

5- Research results

5-1-Findings of the first step

As stated before, four concepts and 16 key factors of digital lending were extracted from the content analysis of the literature in this field

coefficient can be used, which is calculated through this relationship:

respectively N_1 , N_2 cases and the number of cases where two coders match, M is the reliability coefficient; C.R. in this relation $C.R.=2M/(N_1 + N_2)$

Decision making is for the first and second codings (Ezekia and Darban Astana, 2012)

Table 2. Frequency of concepts and key factors of digital lending

Absolute and relative abundance	Key factors of digital lending	Absolute and relative abundance	Key concepts of digital lending
22 (8.6%)	Laws related to lending technology in Islamic banking	51 (24.7%)	Identifying regulations related to digital lending in banks and financial and credit institutions
25 (9.8%)	Laws related to Islamic Fin Tech		
14 (5.5%)	Monitoring and controlling credit risk factors and trying to reduce them		
12 (4.7%)	Setting up an electronic lending system platform	68 (32.2%)	Identification of internal ecosystem entities
9 (3.5%)	Information gathering system		
16 (6.2%)	Main banking system		
21 (8.2%)	Fraud detection system		
12 (4.3%)	Internal validation system		
11 (5.3%)	Processor and analytical system		
19 (7.4%)	External controller system	38 (18.4%)	Identification of external ecosystem entities
13 (5.1%)	External validation system		
17 (6.9%)	Jurisprudential committee overseeing the performance of banks		
22 (8.6%)	Information Technology	49 (23.7%)	Identifying the components of the interface system (partner)
19 (7.4%)	E-commerce system		
14 (5.5%)	Language and computer program suitable for digital lending		
8 (3.2%)	Other partner systems		
254 (100%)		206 (100%)	total

Based on the frequency of articles that mentioned certain key concepts or factors, the number of repetitions was determined. As can be seen in Table 2, the concepts of two-way interaction with "internal ecosystem" and the key factors of "laws related to Islamic Fin Tech", "laws related to lending technology in Islamic banking", "information technology" and "fraud detection system" They had the most repetitions.

5-2-Findings of the second step

In the second step, in order to ensure the validity of the concepts and key factors of digital lending, the experts and experts of this profession were polled using the Delphi method. Based on the collected data, most of the respondents had a master's degree and worked

between 2 and 5 years in the financial profession. The average age of the respondents was 37 years and 70% of them were men.

The results of the Delphi method: The Delphi method was carried out in four stages First, the zero or preliminary stage open questionnaire was given to the experts and they were requested to, in addition to choosing the option, in order to confirm or reject each of the key concepts and factors of digital lending listed as "no" or "yes" in the questionnaire, the items that Ignore them to add to the list. Then, based on the results obtained from the previous stage, the first stage questionnaire with closed items was prepared and sent. At this stage, the experts had to choose one of the five options on the Likert scale and determine the importance or priority of each of them. In the second

and third stages, the results of the analysis of the previous stage were provided to them along with the questionnaire.

The results of the preliminary stage: After examining the answers of the questionnaire in the preliminary stage, it was found that more than 94% of the respondents approved the key concepts of digital lending. Also, no other key concepts were suggested to be added to this list.

The results of the first to third stages: In the first to third stages, to analyze the results, in addition to calculating some central and dispersion indices, for each category (including a concept and related key factors), an average was calculated. The statistical results of all three stages can be seen in Tables 3, 4 and 5

Table 3. Descriptive statistics of concepts and key factors of digital lending (results of the first stage of Delphi)

mean of each category	variance	standard deviation	mode	median	Mean	Class	title
4.083	0.404	0.635	4	4.00	4.222	Concept	Identifying regulations related to digital lending in banks and financial and credit institutions
	0.355	0.596	4	4.00	4.088	Factor	Laws related to lending technology in Islamic banking
	0.431	0.656	4	4.00	4.022	Factor	Laws related to Islamic Fin Tech
	0.409	0.639	4	4.00	4.000	Factor	Monitoring and controlling credit risk factors and trying to reduce them
4.139	0.345	0.587	4	4.00	3.866	Concept	Identification of internal ecosystem entities
	0.409	0.639	4	4.00	4.000	Factor	Setting up an electronic lending system platform
	0.331	0.575	4	4.00	4.177	Factor	Information gathering system
	0.363	0.606	4	4.00	4.000	Factor	Main banking system
	0.631	0.794	5	4.00	4.222	Factor	Fraud detection system
	0.772	0.879	5	5.00	4.333	Factor	Internal validation system
	0.558	0.747	5	5.00	4.377	Factor	Processor and analytical system
4.077	0.427	0.653	4	4.00	4.066	Concept	Identification of external ecosystem entities
	0.454	0.674	4	4.00	4.000	Factor	External controller system
	0.476	0.690	4	4.00	4.022	Factor	External validation system
	0.404	0.635	4	4.00	4.222	Factor	Jurisprudential committee overseeing the performance of banks
4.053	0.340	0.583	4	4.00	3.977	Concept	Identifying the components of the interface system (partner)
	0.355	0.596	4	4.00	4.088	Factor	Information Technology
	0.328	0.572	4	4.00	4.111	Factor	E-commerce system
	0.382	0.617	4	4.00	4.066	Factor	Language and computer program suitable for digital lending
	0.431	0.656	4	4.00	4.022	Factor	Other partner systems

As can be seen in table number 3, the average of all categories is more than 4, which shows that the experts considered the items related to all concepts to be very important on average. The obtained mean, mode and standard deviation also confirm this statement. Therefore, it can be concluded that there is a good consensus of opinion among the experts. On the other hand, the average of the categories is between 4.05 and 4.13 and the range of changes of the average of the

categories is 0.08, which shows the consensus among the experts.

The results of the second stage also show the importance of the concepts and factors of digital lending from the experts' point of view, which is confirmed by the mean, mode, standard deviation and mean obtained for the categories.

After the implementation of the second and third stages, Kendall's coefficient, which shows the degree of consensus among experts and experts regarding the

totality of concepts and indicators, was calculated. According to table number 6, the Kendall coefficient or the correlation coefficient between the first and second stages was equal to 87 and the second and third stages were equal to 89, which can be said that there was a consensus among experts and experts among

many stages. The calculated Kendall coefficient and its lack of significant difference in both stages is a good reason to stop the Delphi stages and the validity of the key concepts and factors of digital lending can be confirmed

Table 4. Descriptive statistics of concepts and key factors of digital lending (results of the second stage of Delphi)

mean of each category	variance	standard deviation	mode	median	Mean	Class	title
4.066	0.325	0.570	4	4.00	4.244	Concept	Identifying regulations related to digital lending in banks and financial and credit institutions
	0.264	0.514	4	4.00	4.088	Factor	Laws related to lending technology in Islamic banking
	0.264	0.514	4	4.00	4.088	Factor	Laws related to Islamic Fin Tech
	0.316	0.562	4	4.00	4.044	Factor	Monitoring and controlling credit risk factors and trying to reduce them
4.253	0.270	0.520	4	4.00	3.955	Concept	Identification of internal ecosystem entities
	0.290	0.539	4	4.00	4.066	Factor	Setting up an electronic lending system platform
	0.240	0.490	4	4.00	4.177	Factor	Information gathering system
	0.270	0.520	4	4.00	4.044	Factor	Main banking system
	0.540	0.735	4	4.00	4.222	Factor	Fraud detection system
	0.427	0.653	5	5.00	4.600	Factor	Internal validation system
	0.434	0.659	5	5.00	4.555	Factor	Processor and analytical system
4.061	0.355	0.596	4	4.00	4.088	Concept	Identification of external ecosystem entities
	0.340	0.583	4	4.00	3.977	Factor	External controller system
	0.381	0.617	4	4.00	4.066	Factor	External validation system
	0.285	0.534	4	4.00	4.177	Factor	Jurisprudential committee overseeing the performance of banks
٤,٣١	0.270	0.520	4	4.00	4.044	Concept	Identifying the components of the interface system (partner)
	0.209	0.457	4	4.00	4.133	Factor	Information Technology
	0.254	0.504	4	4.00	4.133	Factor	E-commerce system
	0.310	0.556	4	4.00	4.088	Factor	Language and computer program suitable for digital lending
	0.340	0.583	4	4.00	4.022	Factor	Other partner systems

Table 5. Descriptive statistics of concepts and key factors of digital lending (results of the third stage of Delphi)

Mean of each category	variance	Standard deviation	mode	median	Mean	Class	title
4.061	0.210	0.458	4	4.00	4.288	Concept	Identifying regulations related to digital lending in banks and financial and credit institutions
	0.237	0.487	4	4.00	4.111	Factor	Laws related to lending technology in Islamic banking
	0.173	0.416	4	4.00	4.088	Factor	Laws related to Islamic Fin Tech

Mean of each category	variance	Standard deviation	mode	median	Mean	Class	title
	0.264	0.514	4	4.00	4.088	Factor	Monitoring and controlling credit risk factors and trying to reduce them
4.320	0.204	0.451	4	4.00	3.977	Concept	Identification of internal ecosystem entities
	0.200	0.447	4	4.00	4.066	Factor	Setting up an electronic lending system platform
	0.149	0.386	4	4.00	4.177	Factor	Information gathering system
	0.128	0.358	4	4.00	3.911	Factor	Main banking system
	0.473	0.687	4	4.00	4.266	Factor	Fraud detection system
	0.364	0.603	5	5.00	4.666	Factor	Internal validation system
	0.382	0.617	5	5.00	4.600	Factor	Processor and analytical system
4.05	0.328	0.572	4	4.00	4.111	Concept	Identification of external ecosystem entities
	0.204	0.451	4	4.00	4.022	Factor	External controller system
	0.290	0.539	4	4.00	4.066	Factor	External validation system
	0.209	0.457	4	4.00	4.200	Factor	Jurisprudential committee overseeing the performance of banks
4.026	0.271	0.520	4	4.00	4.044	Concept	Identifying the components of the interface system (partner)
	0.118	0.343	4	4.00	4.133	Factor	Information Technology
	0.209	0.457	4	4.00	4.133	Factor	E-commerce system
	0.245	0.495	4	4.00	4.066	Factor	Language and computer program suitable for digital lending
	0.271	0.520	4	4.00	4.044	Factor	Other partner systems

Table 6. Kendall's coefficient of agreement between the opinions of experts in the first and second stages of the distribution of the Delphi questionnaire

Significance level	coefficient value	Description
0.000	0.870	Kendall's coefficient between the total average of the questions in the first and second stages
0.000	0.898	Kendall's coefficient between the total average of the questions in the second and third stages

6- Conclusion and discussion

As explained before, the purpose of this research is to identify the key elements of Land Tech in the banking system of Iran. As mentioned before, apart from lending models with Fin Tech approach that have paid attention to some key elements of lending, no comprehensive research has been done to provide a framework regarding Fin Tech in Iran's banking system. Therefore, in order to achieve the goal of the research, the subject literature was analyzed and reviewed; Then, in order to ensure the validity of the extracted key elements at the level of concepts and factors, experts and experts in the financial profession were polled using the Delphi method. According to the results of the research, four concepts and 16 key factors were obtained, and these factors can be seen in Table 7. It should be mentioned that all the key factors and concepts were approved by experts and experts in the financial profession

□ Finding No. (1) - Determining the key concepts and factors of Lend Tech in Iran's banking system: As explained before, in the first stage of the research, by reviewing the research literature and using the content analysis method, 4 key concepts of Lend Tech include various factors. It was extracted that their list is presented separately for each of the concepts in the above table.

□ Finding No. (2) - Validation of the concepts, factors of Lend Tech and how to measure them by experts and experts in the financial profession: in order to ensure the validity of the concepts, factors and key dimensions of digital lending (Lend Tech) and how to measure them, in addition to Citing the research literature and the researcher's knowledge and practical experience, the opinions of 45 experts and experts who were selected using the snowball method were investigated by implementing Delphi rounds.

According to the results, all these cases were confirmed.

□ Finding No. (3) - Designing a digital lending model: after determining the concepts, factors and key dimensions of digital lending and how to measure them and ensure their validity from the point of view

of experts and experts in the profession, with reference to accepted models in scientific publications that have high credibility, the concepts were gathered in a single model and thus the digital lending model was prepared and set.

Table 7- The list of key concepts and factors of the lending model with the Land Tech approach

Key Factor	Key Concept
Laws related to lending technology in Islamic banking	Identifying regulations related to digital lending in banks and Financial and credit institutions
Laws related to Islamic Fin Tech	
Monitoring and controlling credit risk factors	
Setting up an electronic lending system platform	Identification of internal ecosystem entities
Information gathering system	
The main banking system	
Fraud detection system	
Internal validation system	
Processor and analytical system	
External controller system	Identification of external ecosystem entities
External validation system	
jurisprudential committee overseeing the performance of banks	
Information Technology	Identification of components of the interface system (partner)
E-commerce system	
Language and computer program suitable for digital lending	
Other partner systems	

6-1-Using the Lend Tech model:

In this section, we will analyze the application of this model and examine its benefits. The main goals of this model are:

It is a communication tool: this model tries to improve and facilitate the communication between the borrower (individuals, companies and small businesses, etc.) and the lender on a platform covered by the central bank.

It is a framework for evaluation: a framework for evaluating lending capabilities against the standards introduced in new financial technologies (Fin Tech) and especially in the Lend Tech sector, as well as a basis for showing the importance of digital lending with a Lend Tech approach In the banking system of Iran.

A Roadmap for Continuous Improvement: This model is a road map for building capabilities that specifies the steps that the banking system can use to establish and perform better in the field of lending. In order to carry out future research, the following topics are suggested:

- 1) Examining how to measure and evaluate the key factors of the digital lending model with the Land Tech approach in the banking system of Iran.
- 2) Investigating the level of synergy between the participation of high-tech start-ups and banks in order to enhance the growth of the domestic economy.
- 3) Lend Tech startups in the Islamic banking system.

Sources

- * Chishti S, Barberis J. The Fintech book. 1st ed. Hoboken, New Jersey: John Wiley & Sons; 2016.
- * Bharadwaj A, El Sawy OA, Pavlou PA, Venkatraman N. Digital business strategy: Toward a next generation of insights. MIS quarterly. 2013;471–82.
- * Châlons C, Dufft N. The role of IT as an enabler of digital transformation. In: The drivers of digital transformation: Springer; 2017. p. 13–22.

- * Schweizer A, Schlatt V, Urbach N, Fridgen G. Unchaining Social Businesses– Blockchain as the Basic Technology of a Crowdlending Platform. 2017.
- * Nemet GF. Demand-pull, technology-push, and government-led incentives for nonincremental technical change. *Research Policy*. 2009; 38:700–9.
- * Veit D, Clemons E, Benlian A, Buxmann P, Hess T, Kundisch D, et al. Business models. *Business & Information Systems Engineering*. 2014; 6:45–53.
- * Marous J. Top 10 retail banking trends and predictions for 2014. Hg. v. *The Financial Brand*. Online verfügbar unter <http://www.jimmarous.blogspot.de/2013/12/2014-topbank-trends-predictions-forecast-digital-disruption.html>, Downloaded from mri.modares.ac.ir at 11:29 IRDT on Saturday September 5th 2020 Archive of SID www.SID.ir 165 zuletzt aktualisiert am. 2013; 6:2013.
- * Hill J. *Fintech and the remaking of financial institutions*: Academic Press; 2018.
- * Navaretti GB, Calzolari G, Mansilla-Fernandez JM, Pozzolo AF. *Fintech and Banking. Friends or Foes? Friends or Foes*. 2018.
- * Sironi P. *FinTech innovation: From robo-advisors to goal based investing and gamification*: John Wiley & Sons; 2016.
- * Wilson Jr JD. *Creating Strategic Value through Financial Technology*: John Wiley & Sons; 2017.
- * Fortnum D, Pollari I, Mead W, Hughes B, Speier A. *The Pulse of Fintech Q4 2016: Global analysis of investment in Fintech*. Amstelveen: KPMG. 2017.
- * Ansari SS, Krop P. Incumbent performance in the face of a radical innovation: Towards a framework for incumbent challenger dynamics. *Research Policy*. 2012; 41:1357–74.
- * Christensen CM. *The innovator's dilemma: When new technologies cause great firms to fail*: Harvard Business Review Press; 2013.
- * Dapp T, Slomka L, AG DB, Hoffmann R. *Fintech–The digital (r) evolution in the financial sector*. Deutsche Bank Research”, Frankfurt am Main. 2014.
- * Chishti S, Barberis J. *The Fintech book: The financial technology handbook for investors, entrepreneurs and visionaries*: John Wiley & Sons; 2016.
- * Nicoletti B. *The future of Fin Tech: Integrating finance and technology in financial services / Bernardo Nicoletti*. Cham, Switzerland: Palgrave Macmillan; 2017.
- * Rubini A. *Fintech in a flash: Financial technology made easy*. London, United Kingdom: Simtac Ltd; 2017.
- * Kim WC, Maubourge R. *Value innovation*. Havard Business Review. 1997.
- * Chandy RK, Tellis GJ. The incumbent's curse? Incumbency, size, and radical product innovation. *Journal of Marketing*. 2000; 64:1–17.
- * Fagerberg J, Mowery DC, Nelson RR. *The Oxford handbook of innovation*. Oxford, New York: Oxford University Press; 2005.
- * Schumpeter JA, Swedberg R. *Capitalism, socialism and democracy*. London: Routledge; 2005. Downloaded from mri.modares.ac.ir at 11:29 IRDT on Saturday September 5th 2020 Archive of SID www.SID.ir 166
- * Teece DJ. Business models, business strategy and innovation. *Long Range Planning*. 2010; 43:172–94.
- * Haycock J, Richmond S. *Bye Bye Banks? How Retail Banks are Being Displaced, Diminished and Disintermediated by Tech Startups and what They Can Do to Survive*: Wunderkammer; 2015.
- * McMillan J. *The end of banking: Money, credit, and the digital revolution*: BookBaby; 2015.
- * Waupsh J. *Bankruption: How community banking can survive fintech*. Hoboken New Jersey: Wiley; 2017.
- * Blomstrom D. *Emotional banking: Fixing culture, leveraging FinTech, and transforming retail banks into brands*. Basingstoke, Hampshire: Palgrave Macmillan; 2018.
- * King B. *Bank 3.0: Why banking is no longer somewhere you go, but something you do*. Singapore: John Wiley; 2013.
- * Tornjanski V, Marinković S, Săvoiu G, Čudanov M. A need for research focus shift: Banking industry in the age of digital disruption. *Econophysics, Sociophysics & Other Multidisciplinary Sciences Journal (ESMSJ)*. 2015; 5:11–5.31
- * Economist Intelligence Unit. *Strategic Partnerships for the Digital Age*. Telstrea report. 2015.

- * Jaubert M, Marcu S, Ullrich M, Malbate JB, Dela R. Going digital: The banking transformation road map. AT Kearney, Efma. 2014;12.
- * Chesbrough H. Managing open innovation. *Research-Technology Management*. 2004; 47:23–6.

