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Challenges of the Iranian E-Banking Business Model in Digital Transformation

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With advanced information and communication technology, the organizations' business model has undergone fundamental changes. These changes are also observed in the banking industry. This research aims at explaining the Iranian electronic banking business model and recognizing its challenges in the transformation to digital banking, which is considered as the research innovation. In terms of method, the present research is a qualitative study and in terms of goal, it is primary research. In this research, grounded theory has been used as a systematic method for the investigation of complex multilateral issues. The population includes the expert managers of the banking industry who have mastery over macro policies of banking and electronic payment in Iran. Regarding the research method, all the interviews were recorded and converted to text. The coding and classification process was done based on three stages of open coding, axial coding, and selective coding. The outputs of these three stages were provided in the form of codes, concepts, and categories. During and after data collection, the data were reviewed for several times, the key points were specified, and the related codes were counted. Finally, 761 codes, 26 concepts, and 14 categories related to the research topic were identified based on which, the conceptual business model of Iranian electronic banking was developed. Based on the conceptual model of the research, seven challenges for digital banking transformation were identified.

Keywords: Business Model, Electronic Banking, Digital Banking, Digital Transformation.
JEL Classification*:* E58, E52, M21, L21, M15

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1 Introduction

The business model is at the core of the competitive response of any company to the market, defining the value proposition, the required activities, resources and partners, and knowledge of customers, costs, or profits related to its overall operation (Leitao et al., 2013). To employ a scientific approach in developing a business model by companies, first, the proper framework which is based on the company's activity should be identified, and then, the optimal business model should be developed and used based on the company's perspective, mission, and strategies (Bagheri, 2015).

In today's competitive world, those companies can survive that choose a more appropriate business model than their competitors and can update and supplement the model based on the market needs and technological necessities (Haji Heydari and Mohaghar, 2010). On the other hand, the increasing use of the internet has changed the business methods in different areas, including the banking industry. The customers' satisfaction with internet-based services has increased the number of banking service customers. As a risky business in the field of financial services, electronic banking has a better perspective than other types of electronic commerce (Rezvani and Eslahi, 2016). Rapid performance of tasks and avoiding waste of time are considered as the most critical factors of success in competition among the banks. Today's banking requires employing modern customer-orientation methods besides providing new technologies and proper customer service. Electronic banking is the only choice for banks to achieve these goals (Ghanadan et al., 2017).

Reviewing the financial statements of the Iranian private and public commercial banks over the years, 2008-2013 reveals the significant decrease in the share of Rial loans. According to the analyses, only 12% of the banking system's profit is gained from non-shared incomes. In other words, about 88% of the banks' income is gained from shared incomes, and a significant part of these incomes belongs to depositors. Looking at the banks' cost-revenue ratio, it is found that a major part of the banks' profits is spent on costs, including human force costs. Finally, based on the average net profit margin of bank facilities that has been about 2% in recent years, it is concluded that the banks' profit from their main business is at risk (Rezaei Manesh et al., 2017). Therefore, banks are trying to expand their activities in the area of electronic banking and so increase their competitive advantage, market share, and commission income as one of the sustainable sources of income (Ghodsollahi and Tondnevis, 2018).

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Some experts believe that entering into the area of digital banking is a necessity for transformation in the Iranian banking industry. According to Westerman, Didier, and Mcafee's statements (2014), predictions of the world banking industry reveals that digital banking will be the predominant business model of future banking, especially in micro banking. Similarly, studies performed by Buvat and KVG (2014) suggest that the role of digitalization cannot be ignored in the improvement of the key indicators of banking performance. Regarding the undeniable effects of the new technologies such as web development, bandwidth, and high-speed internet, influence of the social media and smartphones in the country, and the emergence of a generation of customers with new needs and demands and more tendency to do their banking affairs by using the latest technologies, digitalization of the country's banking industry is necessary.

Because of the ICT progress, many business models of organizations have been called into question, and companies face severe challenges in changing their business models (Haji Heydari and Mohaghar, 2010), Iranian e-banking has also faced challenges as a result of these changes. Therefore, the aims of this study are:

1) Identifying the components of the Iranian e-banking business model as a prerequisite for the transition to digital banking.
2) Presenting the challenges of Iranian e-banking for the transition to digital banking.

In this research, the literature on the topics is studied. Then the research method based on grounded theory is explained. The fourth section describes the process of analysis regarding the Corbin and Strauss's theory. Later reliability and validity of the research are discussed in the fifth section. The conceptual model of the study presented in the sixth section and challenges of Iranian electronic banking in digital transformation is discussed in the seventh section. Finally, suggestions for future studies are offered in the last part.

2 Research Background

2.1 Business Model

It is almost challenging to propose a definition of a business model because it has different meanings in different business areas. According to the definition proposed by Business Encyclopedia, the business model includes the tools and methods employed by a company to achieve the predicted income. Some definitions address the goals followed by a business model. Some others are focused on the major components of business models and the internal

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relationships between these components (Haji Heydari and Hosseini Kia, 2017). Table 1 presents some of the previous studies about the business model.

Table 1
Some of the previous studies about the business model

Author, year	Elements of business model
Casadesus et al. (2010)	The business model is a reflection of the realized strategy of the enterprise.
Teece (2010)	Business model determines the logic, data, and other documents supporting the customer value proposition and an appropriate structure for the enterprise revenues or costs that creates value.
Zott et al. (2011)	The business model is mainly used for explaining or clarifying three phenomena: 1) electronic business and the use of information technology in organizations, 2) strategic issues such as value creation, competitive advantage, and the enterprise performance, and 3) innovation and technology management.
Kujala et al. (2013)	In terms of focus, definitions of business models can be classified in economic, operational, and strategic approaches. The economic approach is focused on the companies' profit. The functional approach is focused on the company's internal processes and infrastructures, and the strategic approach is focused on creating and developing opportunities.
Leitao et al. (2013)	The business model is a response to competitive conditions. It describes the company's profitability ways regarding its value chain and interaction with suppliers, customers, and other parties having complementary competencies.
Fuller & Haefiger (2013)	The business model is a system that solves the problem of recognizing the company's customers and their needs, satisfying them, and the way of gaining revenue from the value provided for the customers.
Bagheri (2015)	The business model is the business system logic in value creation, which is beyond the company's real processes. In the business model, the company integrates different dimensions of the networks existing in the company for describing the value, which is to be provided for different parts of the market.

Based on Norton and Kaplan's scorecard approach (1992) and the literature of business management, Osterwalder (2004) adopted a framework that focused on four areas, including the product, customer mediator, infrastructure management, and financial aspects of business model. He divided these four basics into nine fundamental interconnected components, i.e. the business model elements. These four areas are the raw classifications of the nine core ontological elements that are summarized in Table 2.

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Table 2
The nine fundamental components of Osterwalder's business model

Basics	Business model elements	Description
Product	Value proposition	The value proposition is the company's overall view of the products and services that are valuable for the customer.
Customer	The target customer	The target customers are those customers for whom the company is going to provide value.
	Distribution channel	A distribution channel is a tool for communicating with customers.
	Relationship	The relationship describes a company's relations with customers.
Infrastructure management	The key resources	Configuration describes the value of activities and the necessary support in creating value for the customers.
	The key activities	Capability is the ability to make a repeatable pattern of actions that are necessary for creating value for the customers.
	The key partnerships	The partnership is a voluntary cooperation agreement between two or several companies to create value for the customers.
Financial aspects	Cost structure	Cost structure presents all the arrangements of the business model planned based on money.
	Revenue model	The revenue model describes a company's method of gaining revenue from different income streams.

2.2 Digital Banking

2.2.1 Digital Banking Transformation

Digital transformation is defined as an organizational transformation that is made by revising the business models and employing digital technologies proportional to the new business structure; so that as a result, the organization's performance becomes significantly improved. It is worth emphasizing that rather than including only the technology used in the organization, digital transformation also consists of the nature of the organization's business. Beyond transforming the organization, digital transformation can also affect the industry value chain, the business space, and the ecosystem dominating the industry. To avoid making a mistake in defining digital transformation, we should always remember that this transformation is not about decorating the organization with some new technologies; this transformation is not considered as a project and limited to the organization's information technology department (Franz et al., 2017).

2.2.2 Digital Banking Models and Dimensions

The future business model of the banking industry will be strongly affected by the emergence of new technologies. The digitalization of bank services will

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lead to the entrance of many non-bank competitors into this area. Financial service startups and also large technology-based companies such as Google, Apple, etc. have taken the first steps in competing with traditional bank services and products. These actions have changed them into severe competitors in the banking industry. Although these new competitors do not have the required specialty in all the areas of financial services, their agility and specialization in information technology enable them to have a successful performance in the field of payment, lending, etc. (Saarniit, 2018).

Nowadays, startups and technology-based companies have taken over a significant part of the bank services market, and shortly, the daily payments done by these technology-based companies will have a substantial effect in decreasing the banks' interaction with customers through payments. So, nowadays, many banks believe that to avoid losing a customer in different areas such as payments, they should move along the rapid innovations of technology-based (fintech) companies. On the other hand, the existing banking business models will not respond to these extensive technologies. Here, the raised question is about the ability of traditional banks to move along the changes and innovations (PWC, 2014). Not only a successful business model requires an appropriate configuration of products and services, interacting with customers, and technology, but also supportive rules are of particular importance in this area. These rules are expected to become stricter in the future. The regulatory challenges created for the future generations of banks will affect the whole organization including the business models and their strategy. About 57% of bank experts believe that these regulations will impose a lot of pressure on banks and they will not be able to go along with the technological innovations (Guest, 2014). To balance and create more strict regulatory standards, banks should move beyond following regulations and regard the effect of such rules on their business models. The constraints and costs resulting from these regulatory changes will transform the bank customers, products, services, and distribution channels (PWC, 2014).

In general, the main issue addressed in all papers is that to go along with the world that is moving towards digitalization, the business model of the future generation banks needs to increasingly focus on their technological capabilities and business model agility to provide innovative products and services for the customers. Changes in a business model will not guarantee a bank's success in a new market. The business model constitutes only a part of the challenges before the banks in the current age. The extent to which a business model is professional and agile is not necessary; because if this model is not able to continuously move along the organizational strategies and

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become properly defined for operational levels, it will never achieve its planned goals (Robinson et al., 2015). According to Code Halo Group research, technologies required for the implementation of digital banking have been classified into seven categories (Delacastro et al., 2014), as presented in figure 1.



Figure 1. Seven Strategic Areas of Digital (Delacastro et al, 2014)

According to McKinsey Co. studies (Sengupta et al., 2014), pioneering banks mainly consider four interrelated factors, including connectivity, automation, innovation, and decision making (figure2).

1) Innovation: It refers to the bank's continuous activity in rehabilitation and making on-time changes in the banking industry.
2) Decision making: It refers to the way of using big data for making better, quicker, and more accurate decisions about the customers' purchases and the banks' judgments about the risks.
3) Connectivity: It refers to how the bank employs growing social networks for creating competition and loyalty.
4) Automation: It relates to the method of applying digital tools in process redesign to more effectively use the resources and create a better customer experience (Sengupta et al., 2014).

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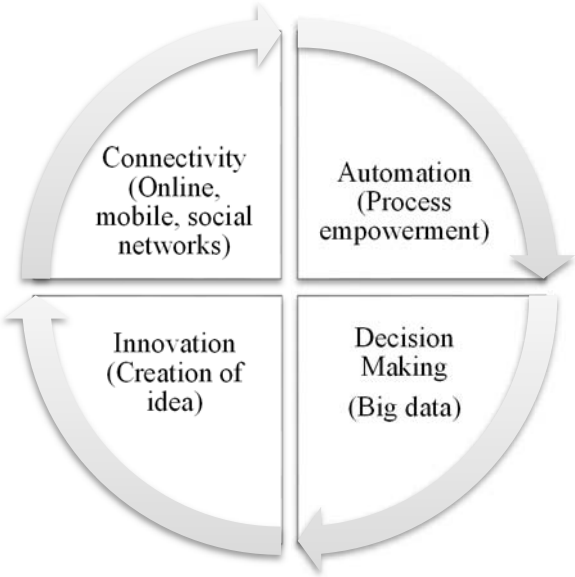

Figure 2. Digital Banking Framework According to McKinsey (Sengupta et al., 2014)

Table 3
Classification of digital organization models by Deloitte

Model	Description
Tactical model	Some business units independently invest in digital areas.
Centralization model	A central unit is responsible for strategy development, prioritization, and distribution of technologies.
Champion model	Independent from the central unit, leaders and staff perceive their role in digital strategy areas and engage in activities.
Business as usual model	Digital business culture, process, and model constitute a part of the organization's daily affairs.

Deloitte institute has classified digital organizations in four categories as table 3 (Guest, 2014).

This institute has proposed the dimensions included in figure 3 for measuring the digital readiness index (Guest, 2014).

According to the studies and surveys of A. T. Kearney about the share of success factors in achieving bank digitalization, the elements included in figure 4 have been recognized (Jaubert, 2014).

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Figure 3. Digital Readiness Dimensions (Guest, 2014)

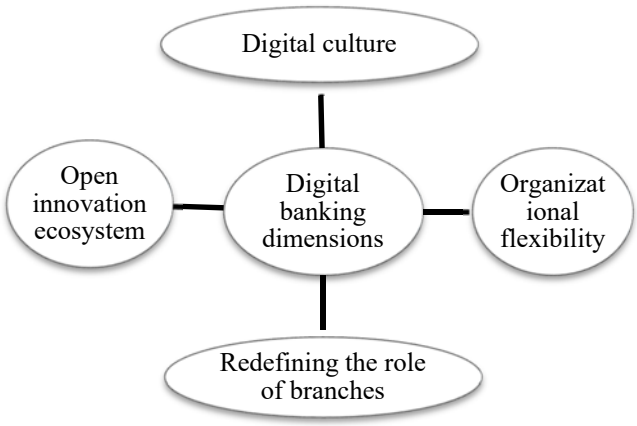

Figure 4. Digital Banking Dimensions according to A. T. Kearney Studies (Jaubert, 2014)

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2.2.3 Summary of Digital Banking Dimensions According to Studies

By reviewing the previous studies, digital banking dimensions are summarized in table 4.

Table 4
Digital banking dimensions based on theoretical studies

Dimension	Code Halo model	A. T. Kearney model	Deloitte model	McKinsey model
Data and data analysis	*		*	*
Digitalizing the process	*	*	*	*
Agile infrastructure	*	*		
Social networks	*		*	*
Mobile-based	*	*		*
Open innovation		*		*

3 Research Method

3.1 Research Orientations

Research is divided into four categories of applied, developmental, fundamental, and evaluation.

Sometimes the objective of the research is solving a common problem in the workplace; sometimes, its objective is to promote knowledge in a specific area, and sometimes research aims to examine the proposed effects of applied research and sometimes the development of previous research. When an analysis is carried out for using the results of its findings to solve a particularly common problem in the organization, such a research is called applied research. However, when research is conducted for increasing our knowledge and understanding of specific issues that commonly occur in organizational environments and how to solve them, it is called fundamental research. The findings of this type of research create knowledge in different fields of management. When research is conducted for evaluating the effects of applied research recommendations, it is called evaluation and when a knowledge of a fundamental or applied area is developed, it is called developmental research (Danaeifard et al., 2019).

In this research, the Iranian e-banking business model was presented using the grounded theory, and thus, it was considered as fundamental research.

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3.2 Research Approaches

There are different approaches to conducting research. Research, which begins with the creation of a theoretical framework and then the steps of developing hypotheses and logical inference have resulted, which is known as the hypothetical-deductive approach. Another research approach is an inductive approach by which the researcher first collects data, then develops hypotheses, and after that proposes a theory based on these hypotheses. In research, resting hypothesis testing through deductive research and developing hypotheses through induction are two common issues. In other words, both approaches are typically used in investigating the phenomena (Danaeifard et al., 2019).

Accordingly, the present study was conducted as an exploratory-inductive approach to elicit and present the Iranian e-banking business model through interviews with banking system experts and policymakers because, in previous studies, no structured and comprehensive research was found to use such an approach for discovering the model.

3.3 Research Type

The type of research being conducted according to the approaches mentioned above may be quantitative, qualitative, or mixed (Danaeifard et al., 2019). Accordingly, the present study aimed to discover the e-banking business model and develop a theory based on the data obtained from the in-depth interviews of qualitative research.

3.4 Research Strategies

Depending on the quantitative or qualitative nature of research, there are various strategies for conducting it. The main strategy of qualitative research includes case studies, action research, mixed methods, historical methods, grounded theory, the social construction of reality, survey, correlation and empirical (Danaeifard et al., 2019). Research strategy includes the skills, hypotheses, and activities used by the researcher while moving from a paradigm and research design towards empirical data collection. The research strategy associates the researcher with specific approaches and methods to collect and analyze the empirical data (Feyzi and Sarkisian, 2008).

Due to the lack of a conceptual model of e-banking business in Iran and the theoretical gap in this area, the grounded theory was selected as the strategy of this research.

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3.4.1 Grounded Theory

Grounded theory is a systematic research method in social sciences and even other areas for discovering and developing a theory or hypothesis through the data being obtained from the natural field. Thus, the objective of this method is providing detailed procedures with thorough systematic details for the continuous collection and analysis of data from the natural field at the time of occurrence and theorizing through the continuous comparative method. Therefore, grounded theory is a research method which does not begin its work with a predetermined theoretical hypothesis or framework, but first goes to data collection and then theorizes or develops hypotheses through the continuous process of comparative analysis in line with a particular event, situation, or phenomenon not testing the hypotheses (Mirzaei, 2016). Since there was no model and theory regarding the Iranian e-banking business model, the grounded theory strategy was used in this study.

For this strategy, several definitions were presented by its founders and followers, some of which are mentioned here (Danaeifard et al., 2019):

Strauss and Corbin (2017): "It is a kind of qualitative strategy which uses a systematic set of data (such as interviews) and procedures for developing a theory on a phenomenon inductively." Martin and Turner (1986) and Fernandez (2004): "It is an inductive methodology of discovering theory which enables the researcher to develop a theoretical report on the general features of the subject while simultaneously reinforcing the foundation for this report in the empirical observation of data." Creswell (2012): "It is a systematic and qualitative procedure for producing a theory which explains a process, action, and interaction on a micro-real subject at a general conceptual level."

3.4.2 The Process of Grounded Theory Analysis

In grounded theory, data is the only thing helping the researcher with forming concepts towards the creation of theory in his selected area of study. Data include interviews, observations, conversations, memories, meetings, articles in newspapers and magazines, and even personal thoughts. Figure 5 shows the process of grounded theory analysis (Qasemi, 2013).

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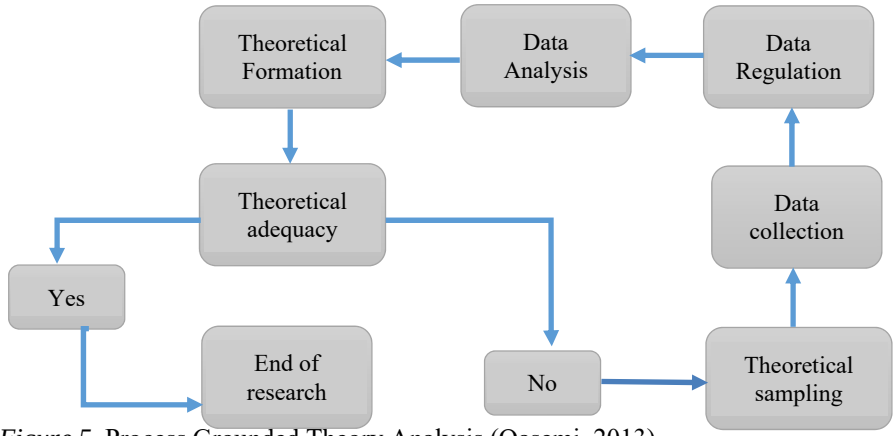

Figure 5. Process Grounded Theory Analysis (Qasemi, 2013)

3.4.3 Essential Elements in Grounded Theory

Three critical features in the progress of grounded theory include codes, concepts, and categories. In general, this strategy converts the data obtained from information sources into a set of codes, converts shared codes into concepts and converts concepts into a kind of category. Finally, a theory is created by concepts (Danaeifard et al., 2019). In the present study, the codes, concepts and categories extracted from the interviews with experts are presented in Section 4.

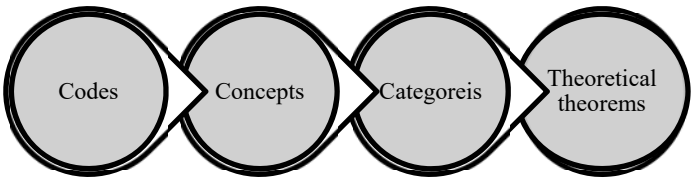

Figure 6. Evolution of Codes to Theory in Grounded Theory (Danaeifard et al, 2019)

3.4.4 The Selected Approach in Grounded Theory

Various methods were developed over time to this methodology, including a systematic approach, an emerging approach, and a constructivist approach. It should be noted that due to the more consistent with the nature of the research

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context and the loyalty of the emerging approach to the fundamental mission of grounded theory, the selected method of the researcher in this study was developing as explained below. This approach which was raised by Glaser (1992) for criticizing the systematic approach states that the development of concepts and categories in a predetermined framework is entirely in conflict with the principle of grounded theory. Glaser emphasized the gradual formation of concepts and categories from the data using a process called continuous comparative coding (Figure 7) enabling the researcher to recognize the relationships between categories without a need for a predefined framework (Creswell, 2012).

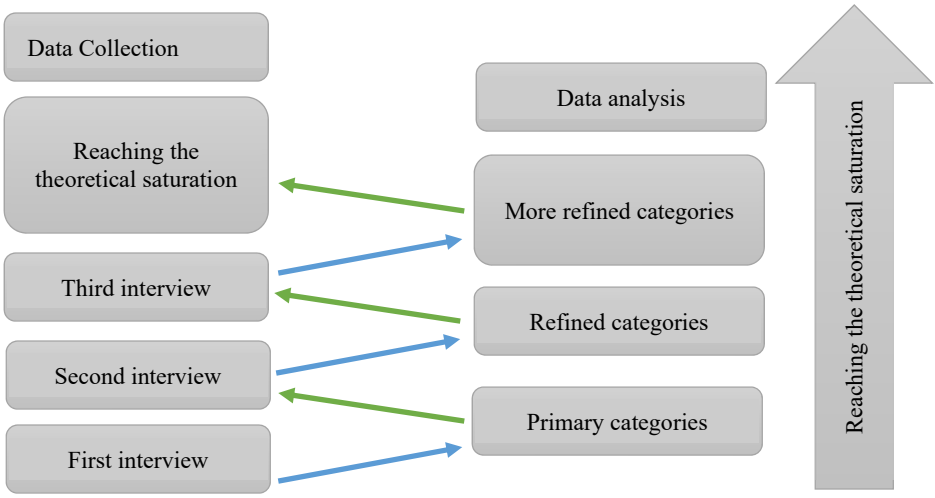

Figure 7. Emerging Approach in Grounded Theory (Creswell, 2012)

3.4.5 The Reasons for Using Grounded Theory

Due to the features being mentioned for the grounded theory method, this strategy was used for the present study for the following reasons:

1) Due to the question and objective of the study, the researcher needed a method for collecting "primary data" from experts and creditors. In other words, the data can be elicited directly by the researcher. Since the basis of grounded theory, analysis is generally the primary data. Thus it was entirely in line with this criterion.
2) Given the research objective, a method had to be used where the data collection tool was interactive (bi-directional) with the simultaneous

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attraction of research participants' attention. In other words, it was not considered appropriate for realizing the research objective for surveying or quantitative analysis using one-directional data collection tools such as questionnaires. The most suitable tool for this purpose is specialized "unstructured and semi-structured interviews" as the core of the data collection process in grounded theory.

3) In line with the nature of the research subject which is due to the lack of knowledge of the Iranian e-banking business model, the answer to the research question required an inductive approach (from the interviewees' data towards the creation of theoretical theorems), and the use of deductive approach derived from the literature was not responsive. In other words, answering the research questions requires a method that fails at relying on the theoretical foundations and literature of the subject but its cornerstone was the researcher's objective data and this criterion is entirely consistent with the inductive logic of the grounded theory method.

3.5 The Primary Purpose of the Study

Research can be conducted either in descriptive or exploratory nature or to test the hypotheses. The quality of research relies on the steps of knowledge progress in the area of that study. Decision-making about the research plan starts from the exploration step and ends with the hypothesis testing step. In the exploration step, the researcher aims at discovering new areas of organizational research; in the descriptive step, he attempts to describe the specific characteristics of the phenomena he is interested in finding out. Finally, at the hypothesis testing step, it determines whether the hypothetical relationships between the factors affecting the phenomenon are confirmed or not. These efforts guide him to find an answer to the research question (Danaeifard et al., 2019). Since no research has been already conducted on the e-banking business model and there is no reliable theory, the present study was of exploratory type.

3.6 Statistical Population and Sample

Population refers to a group or class of people, objects, variables, concepts, or phenomena that share at least one trait. In this regard, a sample is a subset of the population whose members are part of the main community (Parhizgar and Aghajani Afroozi, 2011).

Due to the nature of the research subject, the statistical population of this study included the academic experts and policy-makers of the Iranian banking industry. To identify the participants in qualitative interviews, first attention

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was paid to the specialty area of the individuals, so that as they have a deep relationship with the subject of banking and electronic payment, information technology, and other important areas during the research. Since the research subject was the e-banking business model, the experts who were effective in making policy in the e-banking business model were selected.

In the grounded theory approach, the correct selection of respondents is of high importance. The data sampling method of grounded theory has its design. This method supports a unique approach in targeted sampling for interview or observation being known as theoretical sampling. Theoretical sampling follows the "gradual selection" rule. This type of sampling is a strategy being used in grounded theory and is defined as sampling based on emerging concepts to explore the next domain of variable conditions along which the properties of concepts also change. Theoretical sampling was first raised by Glaser and Strauss in 1967 in his book “Discovery of Grounded Theory” and was then developed by Corbin and Strauss in 1998 in his book “Qualitative research fundamentals: The principles and procedures of grounded theory.” Theoretical sampling is a particular type of targeted sampling where the researcher samples the events, individuals, or units based on their potential contribution to the development and testing of theoretical structures.

The process of this type of sampling has a repeated nature. In this way, the researcher takes a primary sample, analyzes the data, and then takes more samples for refining his emerging categories and theories. This process continues until the researcher reaches the saturation step where no new attitude or idea can be obtained from the more expansion of samples (Mohammadpour, 2013).

Another sampling method which was used in this study was snowball sampling. This method is a commonly targeted sampling technique which requires the use of primary informants or participants to identify additional items which may be gradually used in the study. This strategy is an appropriate approach for finding key informants with important information or issues. Assuming several primary informants or items, the researcher can raise questions like: "Who else knows more about this? Whom should I talk to? Who else do you suggest in this regard?" Thus, it can be said that the research sample in the grounded theory method is affected by each of the items (specialized semi-structured interviews or referenced texts).

In this regard, the analysis of each interview will lead to the next interview. The expertise of interviewees in the present study followed the following criteria:

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1) Having professional experience in the banking industry with at least 15 years of experience.
2) Having scientific and specialized knowledge in the area of e-banking and e-payment.
3) Being at the top management level in various areas of the banking industry.

The sample framework in the grounded theory is targeted and theoretical rather than being statistical. Targeted means that the target groups of informants can be defined based on the subject, problem, and situation of the research of those being involved and carry a variety of lived and thought experiences in the case. The theoretical nature of the sample means that it has enough adequacy to reach the researcher to the level of theoretical abstraction.

For this purpose, theoretical sampling is a repetitive process to reach the extent of content adequacy until the researcher reaches the level of abstraction and the discovery of theory (Ferasatkhah, 2016).

Theoretical sampling is a kind of data collection that is based on emerging concepts. Theoretical sampling depends on the concept of comparison. Comparison means that we look for places, people, and events that maximize the variety of discoveries and enrich the categories in terms of features and dimensions (Strauss and Corbin, 2017).

Interviews were conducted, recorded, and implemented between 45 and 65 minutes from July to September 2019. By reviewing the conversations repeatedly, a more detailed analysis and review of the participants' attitudes were obtained. It should be noted that the number of interviews mentioned was specified based on the realization of the theoretical adequacy criterion, not a predetermined plan. In other words, the stop limit of interviews (data collection) according to grounded theory, is a step where the researcher ensures that new concepts or categories have not emerged or no more modifications will be made.

3.7 Data Collection and Analysis Tool

In-depth interviews were used as unstructured and semi-structured for data collection. Unstructured interviews: They are known as open or non-standardized interviews. Such interviews start with no clear direction and are based on the fact that there is little knowledge of the studied subject. For this reason, the researcher performs such interviews without a specific framework. These interviews are in the form of open discussions including general questions without any predetermined answers (Ryan, Coughlan and Cronin, 2009). Semi-structured Interviews: These types of interviews can be regarded

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as a subset of structured interviews where the interviewer can penetrate the mind of participants more than ever (Alshenqeeti, 2014).

In this study, it was attempted to raise challenging and general questions to discuss the participants' views on the Iranian e-banking business and digital banking.

4 Data Analysis

4.1 Open Coding

After conducting the interviews and implementing them through a process, the transcripts of the interviews were regularly reviewed for finding the main categories, features, and dimensions of these categories. In the first step, propositions (dimensions and features) were extracted from the transcript of the interviews. Then, the data were analyzed at the sentence and phrase level, and sub-categories were also discovered. In other words, after extracting the propositions through the categories, some sub-categories were developed. After that, the main categories were extracted from the sub-categories and named temporarily. Every main category included several sub-categories, all of which were obtained from the propositions extracted from the interviews. The central unit of analysis for open coding was the concepts or propositions. Coding was performed either directly from the transcripts of the interviews or according to the items. Finally, the transcripts of the interviews were further examined and data analysis was conducted more precisely more than ten times to reach a reasonable saturation. For the main categories, their dimensions and features were performed repeatedly. The limits of each category and their dimensions were not determined definitively at the beginning of the analysis and such categories were reviewed throughout the analysis.

Coding stopped when:

A. The same significant classification was obtained by reviewing the transcripts of the interviews repeatedly.

B. Subcategories and features were repeated.

C. No new relevant information was found from the transcripts of the interviews, and even if new information was found, it was matched to the existing classification.

At this step, a total of 761 codes, 26 concepts, and 14 categories were obtained.

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4.2 Axial Coding

Axial coding is a stage of analysis being called by Strauss and Corbin and known as theoretical coding by Glaser. At this step, the researcher compares, combines, merges, reduces, summarizes, mixes, and sorts the whole meaning of the research is derived from the study according to their relationships at some points or main axes with his intellectual and abstract creativity (Ferasatkhah, 2016).

Thus, the most significant activities of axial coding in this research include:

1) Overview and reflection of open coding;
2) Reflection on the concepts of related concepts and their final sorting;
3) The ultimate understanding of the relationships between associated concepts and categories;
4) The ultimate composition of associated categories;
5) Efforts for reducing the total meanings in several large families (cluster categories);
6) Comparison of several big family clusters of categories with each other and reflect on the meaningful relationships between these large categorical families.
7) Discovery of the central phenomenon;
8) Asking if any of the categorical axes has reached the required saturation in terms of the data they contain.

It means data saturation, which is a critical criterion in grounded theory. In other words, the obtained data sequentially fall into one of these axes but no other axis is formed with each time of observation and interview. If only one datum is collected from a situation not being any of our axes, it will mean the lack of saturation, and the research should continue (Ferasatkhah, 2016).

4.3 The Axial Category (Phenomenon)

In this research, the axial category is directly involved in the primary research problem. The studied phenomenon should be axial. In other words, all the other main categories should be related to that. It means that in all cases, we can find clues implying the concept of the main axial phenomenon. This explanation becomes gradually developed by connecting the categories, and it is logical and reasonable. When the concept is improved by being combined with the other concepts analytically, the depth and exploratory strength of the theory grow. The main category is the basis of the process to which all the different major categories are related (Nazari et al., 2019). “Free electronic banking services” is considered as the main axial category; other categories

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are related to this category and they create its causal conditions and the conditions affecting that.

Table 5
Categories related to the axial phenomenon

Axial phenomenon	Codes obtained from the experts' viewpoints
Free electronic banking services	"In foreign countries, people pay money for receiving service, whereas, in Iran, bank services are almost free. One of the pieces of evidence of this fact is that in foreign countries, you should pay a commission fee for having a bank account. "

4.4 Causal Conditions

Causal factors include the categories which directly affect the free electronic banking services. In other words, these categories are the basis of services. These categories can be considered as a pre-requisite for the research topic; the causal conditions can be found regarding the phenomenon itself and based on the data, incidents, and events that are prior to the studied phenomenon. Accordingly, causal conditions can be divided into "banking necessity", "the customers' false mental image", and "lack of independence among bank managers."

Based on the experts' viewpoints, electronic banking is currently a fundamental need, and without electronic banking, the country's banking system will not be able to survive. So, banks need electronic banking to protect and develop their business. This necessity is so definite that they have provided free electronic banking services for their customers. On the other hand, customers assume that they deserve receiving free services due to depositing their money in banks, and the costs of keeping cash and providing electronic banking services are not transparent for the customers. Furthermore, managers of different banks cannot decide independently from the regulator and the country's economic macro policies. As a result of all the mentioned facts, electronic banking services are provided for free.

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Table 6
Categories related to the causal conditions

Causal conditions	Codes obtained from the experts' viewpoints
Banking necessity	"IT cannot be separated from the bank network anymore, i.e., you cannot even imagine a traditional bank."
The customers' false mental image	"Customers have always thought that the banks gain profit from the money they deposit. They think that their savings accounts, checking accounts, or even short-term accounts create profit for the banks, and the banks should pay them for that profit."
Lack of independence among bank managers	"Iranian banks have traditional and strict structures that cannot be changed easily. Banks and the Central Bank should be independent to make such decisions."

4.5 Contextual Conditions

The categories belonging to the contextual conditions are considered as integral components of the Iranian business environment. Contextual conditions provide general conditions by which businesses become formed, and they directly lead to the provision of free electronic banking services in the country. Contextual conditions include "economic factors", "political factors", and "cultural background." According to the experts' viewpoints, a high inflation rate and economic pressure are among the causes of the provision of free electronic banking services. On the other hand, due to syndicated objections and political conditions over the past years, these services are still provided for free. Meanwhile, payment of commission fee by the customer and service receiver has not been accepted to be able to cut these free services.

Table 7
Categories related to the contextual conditions

Contextual conditions	Codes obtained from the experts' viewpoints
Economic factors	"In some cases, economic conditions are also important, especially in the current situation. For example, in the case of 50% inflation, the regulator does not apply business models modification policies and tries to provide a condition in which, less economic pressure is imposed on people."
Political factors	"Government always looks at the acquirers and believes that if the commission fee is charged on the acquirer, acquirers will strike, as in the case of added value …"
Cultural backgrounds	"Culture development is necessary. In this case, the proposition of commission fees would not cause objection. People believe that the banks should pay commission fees…"

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4.6 Intervening Conditions

Intervening conditions balance the causal conditions and affect the strategies and interactions. The categories considered as intervening conditions in electronic banking business are effective in internal and environmental dimensions. In the internal dimension, "the banks' unhealthy competition in attracting deposits", and in the environmental dimension, "lack of connection to international payment systems" affects this phenomenon and creates the results.

According to the experts' viewpoints, in the case of connection of the country's national payment systems to international systems and working based on international standards, electronic banking services would not be provided for free. On the other hand, the banks' interest in shared incomes over the past years and unhealthy competitions for the attraction of more financial resources led to the provision of free electronic banking services.

Table 8
Categories related to the intervening conditions

Intervening conditions	Codes obtained from the experts' viewpoints
Lack of connection to international payment systems	"If we were connected to VISA and MASTER, costs and revenues would be measured based on global standards, and we would not be faced with these problems."
The banks' unhealthy competition in attracting deposits	"Once a governmental bank adopted damping as a way of attracting financial resources and deposit. Three large governmental banks and the players of this area removed the card owner's commission fee for attracting customers and acquirer. The settlements that had been used to be done in 15 days and the settled money that had been used to be transferred to the customer's account in 48 hours were done instantaneously by a bank."

4.7 Strategies and Interactions

Strategies represent for interactions and reactions of players in the face of that condition. Actions are done in response to specific incidents and situations (Nazari et al., 2019). The categories that affect the phenomenon as strategies and interactions include "the banks' interaction with other players of the banking industry" and "the legislators' interaction with banks."

According to the experts' viewpoints, banks' interaction with other players of the banking industry, such as fin-tech companies and competing with them, is one of the effective factors in the formation of free electronic banking services. If banks interact with new players, this phenomenon will not be

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created. On the other hand, the legislator's interaction with banks is also effective in the formation of this phenomenon. Legislation based on the banks' viewpoints by the legislator will lead to the creation of a different condition affecting the axial phenomenon.

Table 9
Categories relation to strategies and interactions

Strategies and interactions	Codes obtained from the experts' viewpoints
Banks' interaction with other players in the banking industry	"If we consider micro banking as free services people daily receive, micro banking or electronic banking would be excluded from the banks, and it will be the primary threat for the banks, and fin-tech are the players of this phenomenon."
The regulator's interaction with banks	"Undoubtedly, the regulator plays a major role in the area of electronic banking and any electronic service. The evidence includes the card to card services in which the maximum sum was decreased; or POS that had provided a card to card service, but it was removed then."

4.8 Consequences

After coding and explaining the central category, the researcher will have a clearer image of the research. In the last stage of the research method, the researcher illustrates the research image to others. For developing the research model, the results of the previous steps of coding that were presented in the form of categories besides the main category should become connected systematically. In this regard, these relationships are validated, and the categories are developed. Advocates of grounded theory propose their theory in three ways: visual coding model, a group of theorems (or methods), and narratives (Creswell, 2012).

In the explained conceptual model, the axial phenomenon creates consequences in two ways. On the one hand, the provision of free electronic banking services leads to the customers' expectation of continuance of receiving free services, and on the other hand, it creates an "improper commission system" and "payment service providers' benefit from the commission fees." Meanwhile, as a mediator variable, "the customers' expectations" are a cause of creation and continuance of consequences. According to the experts' viewpoints, the provision of free electronic banking services has led to increased expectations of customers for receiving these services, the formation of a corrupt commission system, and improper

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distribution of non-shared incomes in the banking system. This distribution is so unfair that it has led to high profitability for payment service providers besides major losses for banks.

Table 10
Categories related to consequences

Consequences	Codes obtained from the experts' viewpoints
Wrong commission system	"Why do not wallet ecosystems form in Iran? Why don't you prefer to keep your wallet filled? Because there is no commission preference for you."
Payment Services Providers' benefit from commission fees	"The current electronic banking model is more profitable for PSPs than banks. This model causes losses to our banks."

5 Reliability and Validity of the Research

Qualitative research is the result of a new attitude towards research in the process of transition from positivist centrality of quantity to interpretative mentalism. So, it can be stated that the primary goal of qualitative research has been trying to avoid the centrality of statistics and defining all aspects of the human mind by numbers and trying to observe the behaviors naturally. In other words, the research shift from quantitative methods to qualitative methods is a result of extensive changes in theoretical areas of humanities and social sciences (Abbaszadeh, 2012). In quantitative studies, the terms reliability and validity are used for evaluating the research quality. On the other hand, in qualitative studies, the equivalent of these two terms is accuracy (or, in other words, the researcher's ability to perceive the participants' knowledge about the research area) (Wu et al., 2016). Meanwhile, it should be acknowledged that due to the importance of accuracy/credibility, concepts such as reliability and validity in quantitative studies cannot be used in this area (Billups, 2014). Accordingly, qualitative researchers conducting surveys such as Lincoln and Guba (1985) and Guba and Lincoln (1994) believe that new concepts and methods should be created for qualitative evaluation and they should be replaced for quantitative validation. For this purpose, researchers propose the following indicators instead of reliability and validity (Abasszadeh, 2012).

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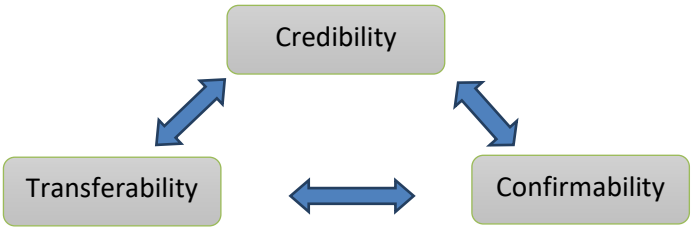

Figure 8. Dimensions of reliability in qualitative research (Abbaszadeh, 2012)

6 Findings and Results

As no business model has been proposed for Iranian electronic banking yet, this research is innovative in this regard. On the other hand, since Iranian electronic banking is independent of the international banking network, its business model is unique. In this research, it has been tried to develop a model providing a full image of the Iranian electronic banking business. This conceptual model has been extracted based on the qualitative grounded method (addressed in section 4) and presented in figure 9.

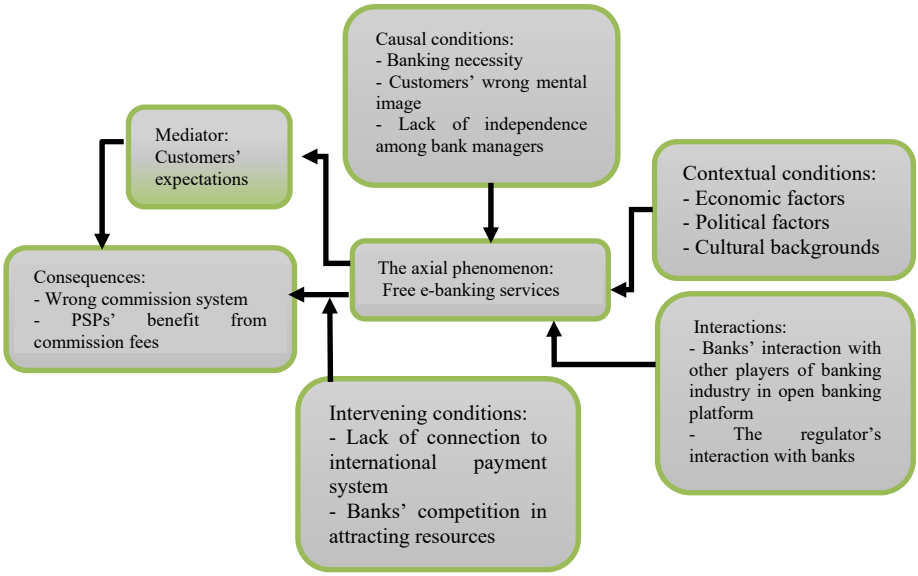

Figure 9. Conceptual Model of the Research.

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Table 11
Comparison of the conceptual model elements of the present research and the previous researches

Elements of the earlier researches	**Elements of the present research conceptual model**
Product and service	In the Iranian business model of electronic banking, these items are the same as "the axial phenomenon" and electronic banking services. Other conditions affect that, and consequence comes out from that.
Customer	In the conceptual model of the present research, "customers' expectations" increase by the provision of free services (the phenomenon), and it creates the consequences.
Participation and interaction	"Banks' interaction with other players of the banking industry" and "the regulator's interaction with banks" affect the axial phenomenon and cause the consequences.
Cost and revenue	In the conceptual model of the research, "economic factors" affecting the axial phenomenon and "wrong commission system" constitute the costs and revenues of the Iranian business model of electronic banking. Lack of consideration of the final value of electronic banking products and services by the banks leads to the provision of free services for the customers and, finally, improper profitability of the corrupt commission system.
Human resources	"Lack of independence among the bank managers" was considered as one of the contextual conditions in the conceptual model which affects the axial phenomenon.
Culture	"Cultural background" is one of the contextual conditions of the conceptual model. The customers' perception of using electronic banking services and commission fee payment are among the cultural factors which affect the Iranian business model of electronic banking.
Rules	Rules and regulations affect the conceptual model of the research in two ways. On the one hand, the legislation of rules and regulations by the regulator regarding the political conditions of the country and on the other hand, the regulator's interaction with banks for legislation of these rules affect that research model.
New players	Fin-tech companies are considered as the new players of the Iranian business model of electronic banking. In addition to interacting with banks, they affect the axial phenomenon.
Innovation	"Open banking" is a new concept in the electronic banking business that is introduced and applied in Iran. This concept belongs to the subcategory of "the banks' interaction with other players of the banking industry"; because fin-tech companies provide their services in an open banking platform.

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The conceptual model of this research includes 14 major elements classified in causal conditions, contextual conditions, intervening conditions, interactions, the axial phenomenon, mediator variable, and consequences, as presented in figure 9. The elements of this model are unique and specific to electronic banking in Iran. However, in terms of concept, they can be compared with other researches and it is considered as a strong point of this research.

7 Discussion and Conclusion

The Iranian electronic banking business model is faced with some challenges in the transition to digital banking. According to the experts' viewpoints and regarding the conceptual model of the research, these challenges include the following.

7.1 Free E-Banking Services

Based on what has been accounted for in this research, "Free e-banking services" is the axial phenomenon of the e-banking business model in Iran. It is made by various factors that are explored in section 4 and led to the formation of the corrupt commission system in Iran that had the following consequences for the banking system in the transition towards digital banking.

7.1.1 The Loss of Banks in the Field of E-Banking

According to the conducted surveys, the infrastructures of e-banking in Iran have been created by the substantial investment of banks during the last years and while it was expected that these banks to take advantage of e-banking services commission, and by providing free e-banking services to their customers, they had to pay the commission. The recipients of these commissions are the companies providing the payment services and other active firms in the area of e-banking. If the commission were received from the customers, it would reimburse the significant part of the banks' expenses and banks as one of the stakeholders would benefit from the related revenues. Therefore, by creating a loss for banks in the field of e-banking, the ability of Iranian banks would reduce the investment in the transition towards digital banking.

7.1.2 Payment Services Providers' Benefit from Commission Fees

Payment Services Providers' benefit from commission fees is one of the consequences of free e-banking services and creating the wrong commission system in Iran. The way of legislation and obtaining and distributing the commissions is in such a way that it would thoroughly benefit the companies.

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So by increasing the number of micro and online transactions of the payment network, the profitability of these companies has increased, and the management cost of micro and online transactions for the banking network of the country has increased as well.

7.1.3 Non-Formation of E-Wallet Ecosystem

The non-formation of the e-wallet ecosystem in Iran is another challenge for e-banking in the transition towards digital banking. The main reason is the lack of commission preference for customers. Because customers got accustomed to receiving free e-banking services, using e-wallet has not been more valuable. If customers paid the commission to receive the online e-banking services, they were more inclined to use the e-wallet (probably had less commission). Meanwhile, the decline of online transactions resulted in a remarkable decrease in banking network expenses.

7.1.4 Increasing the Finished Cost of Money in Iran

The items mentioned in paragraphs 7.1.1 to 7.1.3 led to the heavy load of e-banking expenses on banks. Banks, as an economic enterprise, had to compensate for these expenses. So increasing the interest rate of offered facilities to manufacturing and business companies and customers was one of the simplest ways that Iranian banks have chosen during recent years. It has led to an increase in money finished cost in Iran, which has other consequences for Iran's macroeconomic.

7.2 Digital Culture

According to A. T. Kearney's research (Jaubert, 2014) mentioned in the research literature, one of the dimensions of digital banking is digital culture. In the present Iranian electronic banking business model, this culture has not been developed well. The provision of free electronic banking services for the customers and the customers' expectations to receive these services are among the fundamental challenges of the digital transformation of Iranian banking.

7.3 Interacting with Other Players

PWC (2014) states: "nowadays, startups and technology-based companies have taken over a major part of the bank services market, and shortly, daily payments done by these technology-based companies will be significantly effective in decreased interaction of banks with customers. So, many banks believe that to avoid losing a customer in different areas such as payments, they should move along the rapid innovations of technology-based (fintech) companies." In the Iranian electronic banking business model, interacting with

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fintech companies is considered one of the main challenges in the transition to digital banking. Iranian banks should interact with these new players. Any opposition with fin-techs will lead to losing customers and the market.

7.4 Open Banking

With advanced technologies, banks should provide innovative products. Open banking is a concept that has been introduced and become rapidly accessible in recent years. Jaubert (2014) state: "innovation of ecosystems leads to design and supply of products in digital space. Regarding the rapid market growth, competition in providing new products requires employing new technologies." In the Iranian electronic banking business model, interacting with fin-tech in an open banking platform has been considered as one of the major challenges of digital transformation. Currently, a limited number of banks provide their services in an open banking platform. With the development of open banking platforms and the provision of innovative products, the conditions required for the transition to digital banking will be realized. Schueffel and Vadana (2015) state: "bank leaders should promote the culture of innovation. Banks usually employ a combination of internal programs and investing in startups for encouraging innovation in the organization. In large organizations, open innovation is about using external solutions, including the technology, providing the opportunity of intellectual property in the organization, and recognizing new growth areas."

8 Suggestions for Future Researches

As this research has investigated the Iranian electronic banking business model and its challenges in the transition to digital banking, future studies must evaluate the correspondence of this model with standard international models and determine the probable deviations to improve the banking business space in Iran to achieve a rapid digital transformation.

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