International Journal of Finance, Accounting and Economics Studies, 4(3), 2023, 45-69
Print ISSN: 2251-645X Online ISSN: 2383-2517

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

International Journal of Finance, Accounting and Economics Studies
Journal homepage: https://ijfaes.srbiau.ac.ir

Design and Formulate a Conceptual Framework for Sustainable Development in Iranian Governmental Banks with the Delphi Technique and Shannon Entropy Approach

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doi 10.30495/IJFAES.2023.73510.10133

Article History
Submission Date: 31 May 2023
Revised Date: 2 July 2023
Accepted Date: 25 August 2023
Available Online: 23 October 2023

JEL Classification:

Keyword:
Conceptual Framework
Sustainable Development
Iranian Governmental Banks
Delphi Technique
Shannon Entropy Approach

Abstract

Background: Sustainable development is one of the most important driving forces of business strategies and the banks have taken steps to implement principles of sustainability and move toward being sustainable.

Objective of Study: The aim of present study was design and formulate a conceptual framework for sustainable development in Iranian governmental banks.

Research Method: The present study was a basic research in terms of purpose that conducted by mixed method in exploratory model of Model based Development Tool, whereby in qualitative the grounded theory was used, and in quantitative the Delphi method and Shannon Entropy were employed. In qualitative, the population consisted all experts of sustainable development and board members of banks, as well as, senior managers of credit and human resources departments in Iranian governmental banks. And in quantitative, among the staff managers of Iranian governmental banks who held M.A degree or higher, 10 managers were selected by convenience sampling method.

Findings: The results showed that, elites believe that the highest weights go to consequences (0.499), strategies (0.457), intervening conditions (0.450), core category (0.417), context conditions (0.416) and causal conditions (0.248) in the sustainable development of Iranian governmental banks, respectively.

Result and Conclusion: The banking sustainable development as an effective solution for using natural resources, minimizing effect of environmental pollutions, making the environment resilient to natural disasters, and managing environment and natural capitals to prevent physical incidents.

Discussion: Managers of Iranian governmental banks should be familiar with the goals and plans of sustainable banking and place it at the top of the vision and mission of the banking industry.

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1. Introduction

Sustainability is increasingly being acknowledged as central to the growth of an economy. Every economy now considers environmental protection and social justice to be its core so banks and financial institutions should create a sustainable environment that can help reap substantial benefits. Sustainable banking implies incorporating environmental, social, and ethical considerations into the banking operations and strategy to carry out its business activities thereby promoting sustainable development. Sustainable banking focuses on integrating environmental, social, and corporate governance (ESG) criteria into banking (Abor et al., 2019; Deloitte, 2017) and considers ESG as a key objective (Deloitte, 2017). The US National Academy of Sciences' Board on Sustainable Development named 3 categories of sustainability and discussed banking not destructive of nature (environment), life support system (economy), and community (people) is sustainable. The concept of sustainability extends to the triple bottom line (TBL) principle as coined by Elkington (1997) — people, planet, and profits. The concept of social banking, ethical banking, green banking, and corporate social responsibility (CSR) come under the scope or umbrella of sustainable banking. Banks adopting sustainable banking practices enjoy a number of advantages as they are able to differentiate themselves from their competitors, improve reputation among key stakeholders and gain their support, attract new clients, capital, and market, and generate goodwill. The banking sector plays an important role in encouraging sustainable development as it is a requisite for and enabler of economic development in the economy. Banks must embrace sustainable practices (World Finance, 2019). Moreover, growing awareness among stakeholders is prompting banks to become more proactive in terms of sustainable banking (Capgemini, 2019). In the last decades, the bank's attitude towards environmental and social issues has witnessed change, and also financial sector's accountability on environmental and social issues has gained importance (Capgemini, 2018). Thus, the adoption of sustainable practices by banks has become inescapable in the banking industry due to the growing demand for sustainability. In view of this, several research questions are raised, for example:

- What does sustainable banking include?
- What are the different dimensions of sustainable banking that need to be considered?
- What are the dimensions if included in the banking activities that will make banking practices sustainable and be called sustainable banking?
- Is there any framework for assessing the performance of these sustainable banking practices?

Therefore, in the light of the research questions raised, the current study is conducted to explore the different dimensions of sustainable banking, to identify the existing framework for the assessment of sustainable banking practices performance, and to identify the sustainable banking practices adopted by the Iranian governmental banking sector.

2. Literature Review

Economic development is critical for all societies, but in recent century, the world witnessed an unsustainable pattern in economic growth. Thus, socio-economic and environmental challenges on sustainable development have attracted the attentions worldwide. The current challenges point to the fact that the nations may not live a healthy life without considering the sustainable development (Ataie Gharacheh, Davoudi, & Hartamni,

2021). Sustainable development is one of the most important driving forces of business strategies and the World Commission on Environment and Development (WCED) defined it as 'a development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (Shahbandarzadeh, Kabgani & Shoja-Aldin, 2016). Therefore, sustainable development means consistency in economic, social and environmental goals of community, making effort to achieve those goals, and finally, maximizing life quality of modern human beings, by taking into account needs of future generation.

Today, sustainable development is a commitment rather than a choice, and all governmental and non-governmental actors should do their best to achieve the sustainable development in transition to a stable economic condition (Najafbeygi, 2018). While in developing countries, the sustainable development is focused primarily on socio-economic development, including poverty reduction, availability of health care services, educational facilities and economic development, in the developed economies, the environmental aspects of economic development are highlighted (Fortunski, 2011). The social and environmental aspects of sustainable development are intangible and hard to measure compared to its economic dimension (Robinson, 2012).

In this regard, the banks have taken steps to implement principles of sustainability and move toward being sustainable. As result, the concept of Sustainable Banking is introduced, which refers to a strategy to support economic, social and environmental development at the same time, while supplying the future sources of the world (Ataie Gharacheh, Davoudi, & Hartamni, 2021). According to the United Nation Environment Program (UNEP), the sustainable development of banks is a pattern that will lead to increased welfare and quality of life of individuals, employment and social equality, while minimizing environmental hazards and ecologic shortfalls. In other word, it is a framework designed to improve human life, create social justice, and at the same time, minimize the environmental damages (Rahman et al, 2013). World Bank recognizes the banking sustainable development as an effective solution for using natural resources, minimizing effect of environmental pollutions, making the environment resilient to natural disasters, and managing environment and natural capitals to prevent physical incidents. Then, this term refers to ecological considerations on protecting the planet and its ecosystems, and it is underway to become the symbol of awareness on environmental compatibility across the world (Rajesh & Dileep, 2014). Banking sustainable development fosters income growth and employment through public and private investments, and it helps the banks to mitigate carbon emission and pollution, to increase productivity, and to prevent destruction of biodiversity and ecosystems. Therefore, in the developed countries, the operations of financial and economic institutions revolve around sustainable banking (Ataie Gharacheh, Davoudi, & Hartamni, 2021).

As stated above, banking industry plays a critical role in environmental protection. Due to high usage of energy and waste of papers, banking is considered a threatening industry for environmental sustainability. Therefore, this industry is trying to mitigate the negative effects of its operation on environment, moving toward environmental sustainability (Ebrahimi, 2020). In facts, the banks could be a driving force that encourages other industries toward sustainability (Musvoto et al, 2015). Banking sector provides the finance for investment in the projects of highly important for economic development, then, this sector could play

crucial role in promotion of environmentally sustainable investment and social responsibility. Banking sector as one of the major industrial stakeholder is exposed to credit and liability risks. Moreover, environmental impacts may affect quality of assets and rates of return in long term. Therefore, the banks should move toward green banking, playing active role in environmental protection (Kord Noori, Edalatian Shahryari, Azizi, & Kabaranzadeh Ghadim, 2020).

In the past, due to the nature of banking operation as provider of financial services, sustainable development was not integrated into the strategies of this financial institution and the banks were based their strategy on increased profitability and share of stakeholders (Akin & Yilmaz, 2016). However, today, the banks as the most important economic institutions of each country, plays crucial role in sustainable development. Nowadays, the policies and strategies of banks will contribute mainly in economic development, employment and national income (Kazemi, 1998). Among different types of banks, commercial banks are an important part of banking industry, reflecting the capacity of sustainable development in banking industry through operational effectiveness and risk level (Yang & Zhao, 2009). In recent decades, commercial banks have faced with globalization and customer-centricity demands, and thus, they have undergone significant changes (Kazemi, 1998).

Sustainable banking is a new concept in the realm of sustainable development, with significant importance in developed countries. It is a new approach to support innovative goals of leading companies which have developed as result of providing services and products consistent with their social responsibility and green economy strategies. The main strategy of sustainable banking is to support economic development, while supplying global future resources (Ataie Gharacheh, Davoudi, & Hartamni, 2021). Since corporate social responsibility is significantly increased, the firms have been planning to develop innovative products and services compatible with goals of sustainability and resource protection. This new development entails financial resources. In addition, supply of required financial resources is matter of sustainable banking. Therefore, sustainable banking is a new approach in banking system aiming to support corporate green development (Nobahar, Dehghan Nayeri, & Rajabzadeh Ghatari, 2019).

The strategic plan of Iranian government is based on realization of social objectives and improving rate of employment among different social classes. Law to Support Development and Sustainable Employment approved by Islamic Consultative Assembly, on August 2017 and its executive regulations notified through letter on November 2017 to the relevant agencies. Therefore, employment is of high importance in socio-economic plans of Iranian government and major projects have been implemented so far in this field. Then, sustainable development in Iranian banks may be a central solution to achieve these goals, because it will turn the traditional banks, as financial institutions concentrating merely on their profitability, into a developed bank where all social and environmental factors are taken into account with the aim of natural resources conservation and environmental protection (Ali Ahmadi, Bonyadi Naeini, & Taghavi, 2020). As result, a two dimensional approach is required to achieve this goal, namely, focus on environmental protection in all domestic operations at the first phase, i.e. all banks should learn the proper ways of using renewable energy, automation, and other measures to minimize carbon footprints related to banking operation. In the second phase, all banks should adopt

environmentally friendly financing methods and reduce their environmental risks of projects before making the financial decisions (Malek Zadeh Leyli, & Jafar pour Gol Rodbari, 2017).

Then, it is important to study indices of banking sustainable development in Iranian banking industry as a particular but least-studied subject. In this regard, the present study investigates banking sustainable development through identifying its items and indices in Iranian governmental banks. This study aims to identify effective items and indices in establishment of banking sustainable development in Iranian governmental banks through investigation and assessment of the related literature. This study will design and validate a theoretical framework on banking sustainable development that can act as a scientific basis for use of academicians, researchers, and managers of public organizations. Other practical implications of this study include development of a road map for governmental banks on sustainable development of banking industry and responding to needs of researchers in this field. Moreover, the author, as an active member of the governmental banks can use the findings of this study in practice.

3. Methodology

3-1. Research Method

The present study is a basic research in terms of purpose that conducted by mixed method in exploratory model of Model based Development Tool, whereby in qualitative research the grounded theory was used, and in quantitative research the Delphi method and Shannon Entropy were employed. The mixed methods research is a study that combines qualitative and quantitative research methods, and both methods are used in sequential manner and with equal weight through compositional data method (Khanifar, & Moslemi, 2021).

3-2. Statistical Population

In qualitative research part, the population consists of all experts of sustainable development and board members of banks, as well as, senior managers of credit and human resources departments in Iranian governmental banks (including, Melli, Tejarat, Saderat, Maskan, Bank of Industry and Mine, and Sepah). In order to obtain a summary of experiences, attitudes and perception of the elites who participated in the study, on effective factors on sustainable development in Iranian governmental banks, the qualitative research method was used, in particular, the grounded theory with systematic approach proposed by Strauss and Corbin (2015). Grounded theory is an inductive method to discover the theory that allows the researcher to prepare a theoretical report on general characteristics of the subject, and at the same time, the report is grounded in the data that has been collected by experimental observations (Fernandez, 2004). In other words, the purpose of grounded theory, which is based on the data that has been collected and analyzed systematically, is to build a theory that would be explanatory in the area of inquiry (Charmaz, 2011). The underlying logic of grounded theory determines the method of collecting data and their theoretical development. Then, in this method, ‘all is data’, meaning that everything that the researcher collects in field study, or what the researcher learns surrounding the subject, can be applicable as data in the process of theory making in the grounded theory method. To do so, the researcher should collect deep interview – text data (Glaser, 2001).

Furthermore, in quantitative research part of the present study, among the staff managers of Iranian governmental banks (including, Melli, Tejarat, Saderat, Maskan, Bank of Industry and Mine, and Sepah) who held M.A degree or higher, 10

managers were selected by convenience sampling method. They participated in a survey to evaluate and approve the conceptual framework of sustainable development in Iranian governmental banks, and to determine importance of the identified dimensions and items. Next, the results of this survey which conducted by Delphi method in three rounds, were analyzed by Shannon Entropy technique.

3-3. Data Collected

Collecting data to produce grounded theory requires some assumptions taken as important point of research inquiry. One of these assumptions is 'sensitizing concepts' introduced by Herbert Blumer (1954). It means that the initial ideas that have to be pursued, and being sensitive to asking particular questions associated with the topic, along with researcher's theoretical sensitivity, will give the researcher path of data collection. Theoretical sensitivity refers to ability to find and extract the clues and details in data that help the interpretation of meaning or are associated with it (Corbin & Strauss, 2008). In qualitative research of this study, the semi-structured interviews were used to gather required data to build grounded theory. Then, according to the structured design of grounded theory, the researcher inquired the perception of participant elites on factors, strategies, background and consequences of sustainable development of Iranian governmental banks.

As such, the qualitative data were collected through semi-structured interviews with 18 board members and senior managers of credit and human resources departments in Iranian governmental banks. Demographic data of interviewees are presented in Table 1. The interviews were conducted individually, and each lasted 60 – 80 minutes in average. Therefore, the validity of interviews in this study depends on the validity of research team, what tools are used, proper samples, and required sampling size to the point of reaching theoretical saturation. In additions, to evaluate validity of qualitative data, the validity criteria of qualitative research were used, namely, reliability engineering, transferability, generalizability, connectivity, and credibility. And saturation point was used to evaluate reliability of qualitative data (Eidan Torkzadeh, Rezaei, & Seighali, 2021). The basic principle of qualitative research is the commitment of researcher to accuracy and it depends primarily to define theoretical saturation, i.e. a point where description of categories is completed. Theoretical saturation implies reliability in grounded theory methodology, because this point identifies the iterative data in the research under development, and iteration implies the reliability of methodology (Danayifard & Alvani, 2019).

In quantitative research part, the data were collected through a researcher-made checklist containing 17 items; the items designed as closed-ended questions in 5-point Likert scale, from very low (Code 1) to very high (Code 5). The estimated Cronbach's alpha coefficient to check the internal consistency of the items was 0.973, suggesting high level of reliability of the checklist. One way to measure validity of an instrument is measuring validity of its content that is estimated by CVR and CVI ratios. To measure content validity of our instrument, the questionnaire was distributed among seven experts who were academician elites, managers, vice-presidents and practitioners of banking industry. As result, CVR and CVI ratios were computed as 0.86 and 0.92, respectively. As CVR is higher than 0.62 and CVI is higher than 0.42, then the content validity of the checklist is confirmed and validity is verified by experts.

3-4. Sampling Method

In selection of elites for interviews, judgmental sampling method was used in qualitative research that would be in line with purpose of our study. To do so, the sampling process continued until the point of theoretical saturation. Theoretical saturation is a criterion in process of data gathering using theoretical sampling in which point the researcher can stop process of sampling and data collation, because he/she notices that no additional categories are being found in the responses (Charmaz, 2006).

Moreover, for selection of samples in quantitative research, judgmental sampling method was used whereby during 3 phases of Delphi technique 10 individuals as expert panel participated in a survey regarding the conceptual framework extracted from grounded theory.

3-5. Hypotheses

As in this study, the focus is on qualitative research, and due to the fact that final variables and their interrelations or final research model are not clear, the following questions are made:

- What are the challenges and obstacles of sustainable development in governmental banks?
- How is model of sustainable development in Iranian governmental banks?
- What are effective causal factors on sustainable development of Iranian governmental banks with focus on pathology?
- What are effective context factors on sustainable development of Iranian governmental banks with focus on pathology?
- What are effective phenomenon factors on sustainable development of Iranian governmental banks with focus on pathology?
- What are effective intervening factors on sustainable development of Iranian governmental banks with focus on pathology?
- What are effective strategies on sustainable development of Iranian governmental banks with focus on pathology?
- What are effective consequences on sustainable development of Iranian governmental banks with focus on pathology?
- What are weights of effective factors on sustainable development of Iranian governmental banks with focus on pathology?

3-6. Data Analysis

In qualitative research of the present study, all interviews were written down word by word before reaching the saturation point. In this stage, the researcher tried to consider all non-verbal expressions, tones, and feelings of individuals during the interview. Then, the extracted data from interviews were converted to text data and a bulk of collected data was coded and categorized for purpose of structured investigation. At last, the researcher analyzed the data using grounded theory, based on the theory of Strauss and Corbin (2015). The structured version of grounded theory is based on Strauss and Corbin (2015) theory and has six items. This version consists of the selective and axial categories in addition to central phenomenon. Six items of the mentioned paradigmatic model are as follows (Strauss and Corbin, 2015):

1. **Causal conditions:** they are incidents which generate contexts, discussions and related problems to the phenomenon and explain to some extent that how and why individuals and groups got involved into the phenomenon. In fact, causal conditions refer to the incidents that have been affected the phenomenon and made it to appear.

2. **Context conditions:** they are specific set of conditions in which the strategies and actions tend to handle the phenomenon and react to it.
3. **Core category or Phenomenon:** it is a representation of the phenomenon which forms the basis of research process.
4. **Intervening conditions:** they are broad and general conditions including culture, space, etc, which either facilitate or hinder the implementation of strategies.
5. **Strategies:** they include special actions or interactions resulted from core phenomenon. Strategies and actions help the design of model.
6. **Consequences:** they include influential outcomes, both tangible and intangible, that are consequences of designing model in population and can be considered as outcome of a set of conditions, strategies etc.

There are three steps in this analysis method, namely, open coding, axial coding and selective coding. At first, the open coding was performed accurately and in process of initial coding, the initial concepts derived from the data. In a second coding or concentrated coding, the similar concepts were assigned into a single category. When open coding finished, axial coding was performed. In this step, the derived categories were compared using constant comparison method and their dimensions were identified. Next, in selective coding step, the core category was determined. In data analysis stage, MAXQDA Software were used. The output of this stage was a conceptual framework for sustainable development in Iranian government – owned banks. This conceptual framework was assessed in quantitative research and then, its items were weighted through Delphi method and Shannon Entropy technique under supervision of experts panel.

3-7. Research implementation process

Process of conducting this research is described here:

Step 1: development of a conceptual framework for sustainable development in Iranian government – owned banks using grounded theory approach

To do so, the grounded theory and structured approach were used; as such, semi-structured interviews were conducted with 18 board members and senior managers of credit and human resources departments of government – owned banks. After each interview, the contents were transcribed word by word and categorization and coding of data was performed. In order to evaluate validity and reliability of coding, when researcher finished the process of coding, five interviews were randomly selected and coded by another person who was not member of research team. To ensure that researcher's insights had no effect on data analysis, coding was reiterated by software. At the end, the coded documents were compared with each other and Kappa coefficient calculated to measure their reliability, and the resulting percentage of agreement for these documents were 79%, 75%, 83%, 71% and 87%, respectively. Generally, in a content analysis, the value of inter-coder agreement should be at least 0.7 in order that the reliability of coding can be verified (King & Horrocks, 2010). As result, reliability and validity of conducted coding are established. The output of this step was a conceptual framework for sustainable development in Iranian government – owned banks and a list containing identified dimensions, items, and indices.

Step 2: design of a checklist to evaluate the conceptual framework and to determine weights of the identified dimensions, items and indices

In order to check whether the conceptual framework derived from the grounded

theory in previous step is valid or not, having the panel of experts completes a survey. To do so, a researcher-made checklist was used. In this regard, to get opinion of experts on validity of research instrument, Delphi method was used in three rounds and some modifications were made in questionnaire under supervision of experts. Moreover, ethical considerations were considered in present study, and rights of interviewees and confidentiality of their opinions were observed.

Step 3: analysis of the survey data

When data were collected to evaluate conceptual framework of sustainable development in Iranian governmental banks in quantitative manner, the data analyzed by Shannon Entropy method to find weights of the identified items, dimensions and indices derived from the survey of expert panel. This method, which enjoys higher accuracy than frequency ratio method, allows finding the information-load of each index and consequently, the weights of item can be calculated. In this method, at first, the normalization of responses from expert panel, which are presented in Table 4, are made by Eq. 1, and then, information-load of each activity is computed through Eq. 2, and finally, the weight of each activity is calculated by Eq.3.

$$P_{ij} = \frac{F_{ij}}{\sum_{i=1}^{m} F_{ij}} \quad (i = 1,2,\dots,m\,;\, j = 1,2,\dots,n) \qquad \text{Eq (1)}$$

$$E_j = -k \sum_{i=1}^{m} \left(P_{ij} ln P_{ij}\right) \qquad (j \in 1,\dots,n) \quad ;$$

$$k = \frac{1}{\ln(m)} \qquad \text{Eq (2)}$$

$$W_{ij} = \frac{E_j}{\sum_{j=1}^{n} E_j} \qquad \text{Eq (3)}$$

Step 4: formulation of conceptual framework of sustainable development in Iranian governmental banks

Finally, when conceptual framework of sustainable development in Iranian governmental bank was verified and the weights of the identified dimensions, items and indices were calculated by Shannon Entropy method, we embarked to formulate the theoretical framework of sustainable development for Iranian government – owned banks.

Table 1. Demographic information

Interviewee	Organizational Level	Work Experience	Educational Level	Major	Location
1M	Deputy Director	26	Master	Financial Management	Melli
2M	Deputy Director	24	PhD	Organizational Behavior	Industry and Mine
1S	Director	23	PhD	Accounting	Tejarat
3M	Deputy Director	17	PhD	Financial Management	Maskan
4M	Deputy Director	19	PhD	Business administration	Saderat
2S	Director	19	PhD	Financial Management	Sepah
3S	Director	21	PhD	Public Administration	Tejarat
5M	Deputy Director	28	Master	Insurance management	Tejarat
6M	Deputy Director	27	Master	Executive MBA	Maskan
7M	Deputy Director	25	Bachelor	Law	Saderat
4S	Director	24	Master	Business administration	Melli
5S	Director	29	PhD	Financial Management	Industry and Mine
6S	Director	29	PhD	Public Administration	Saderat
8M	Deputy Director	26	Master	Accounting	Melli
1C	Advisor to Managing Director	29	Bachelor	Business administration	Industry and Mine
7S	Director	26	Master	Accounting	Sepah
9M	Deputy Director	23	Master	MBA	Sepah
1K	Expert	18	Master	Accounting	Maskan

Source: Researcher's findings

4. Results and Discussion

4-1. Identifying the effective factors on banking sustainable development (formulation of conceptual framework)

Grounded theory was analyzed based on three coding methods, i.e. open, axial and selective coding, on the data obtained from interviews, observations and documents. Open coding conducted in three steps, leading to grasp of concepts and categories. In this step, the characteristics and domain of each category were identified. Then, it was followed by axial coding, in which the core phenomenon associated with the theme of research was selected from a set of identified categories. The relationship between core phenomenon and other categories was identified in this step, relying upon grounded theory paradigm with structured approach. As stated, open, axial and selective coding on content of interviews was conducted based on grounded theory with structured approach in three phases and six steps that are presented in Table 2.

- **Open coding:** in this method, the parts of text are conceptualized by labels which simultaneously summarize and explain each part of data. In fact, open coding is the operation of breaking up the data and attaching initial concepts to them (Charmaz, 2006).
- **Axial coding:** it includes making relations between categories (Corbin, 2008). In fact, axial coding acts as link between categories and their subcategories or concepts; it identifies content and dimensions of each category, and makes relations between the data that broken up by researcher during open coding (Charmaz, 2006).

    1. **Core category (phenomenon):** core category should be linked to all other categories and this link should be seen repeatedly in data. In fact, all subcategories should have characteristics associated with the core category. The concept is gradually developed by relating the categories to each other, and when the concept is improved through integration with other concepts, the theory will grow in terms of depth and exploratory effect (Goulding, 2000). The present study aims to formulate the framework of sustainable development in Iranian governmental banks with respect to main categories and the effective factors identified from interviews with elites. Then, in this study, the organizational structure is considered as core category. How to encode the axial phenomenon is presented in Table 3.
    2. **Causal conditions:** in this study, causal conditions are those categories which directly affect or contribute to sustainable development of Iranian governmental banks and their organizational structure. In fact, causal conditions affect core category, leading to its occurrence, development and expansion (Creswell, 2005). How to encode the causal conditions is presented in Table 4.
    3. **Context conditions:** context includes set of conditions without which sustainable development and changing structure of Iranian banks would not be possible. In fact, context conditions provide the specific conditions in which strategies are shaped to handle, control and react to core category (Creswell, 2005). How to encode the context includes is presented in Table 5.
    4. **Intervening conditions:** they are conditions where adjust the causal conditions and affect strategies and interactions. In other words, intervening conditions either

facilitate or hinder strategies to allow the core category occurred, in this case changing structure of Iranian government – owned banks (Creswell, 2005). How to encode the intervening conditions is presented in Table 6.

5. **Strategies:** they include actions / interactions resulted from exposure to above conditions. In other words, strategies are a set of actions in response to events and special contexts interacting with core category (Creswell, 2005). The strategies are targeted and based on actions/interactions in order to control, handle, and react to core category, or in this case, changing structure of Iranian government – owned banks and sustainable development in them. How to encode the strategies is presented in Table 7.
6. **Consequences:** they refer to the results obtained by implementing strategies. In fact, consequences are the outcomes of actions and interactions that performed by strategies to overcome or to manage the core category of changing structure of Iranian governmental banks and their sustainable development (Creswell, 2005). How to encode the consequences is presented in Table 8.

- **Selective coding:** selective coding is the final stage of coding in which the identified categories that have been saturated theoretically being integrated to each other based on the coded categories of previous stages, they are related to other categories and final theory is prepared (Charmaz, 2006). In this stage, researcher extracts the theory with respect to the mutual relations of different categories during axial coding, and provides an abstract explanation including integration and modification of theory, in order to describe the process under study (Creswell, 2005). The final model is consequence of implementing grounded analysis on the results obtained by interview with elites. Figure 1 presents the model of sustainable development in Iranian governmental banks which extracted in the present study.

Table 2. The stages and steps of analysis in the grounded theory with a systematic approach

Stage	Step	Action
Decomposition and Description of the text	Getting to know the text	– Writing data (if necessary). – Initial study and re-study of the data. – Writing initial ideas.
	Creating initial codes and coding	- Proposing a coding framework for preparing the category template. - Separating the text into smaller parts. – Coding the interesting features of the data.
	Search and recognize categories	- Matching the codes with the template of the categories. - Extracting themes from coded parts of text. – Refining and revising categories.
Commentation and interpretation of the text	Drawing a network of categories	– Checking and controlling the agreement of the categories with the extracted codes. – Sorting the categories. – Selection of basic, organizing and inclusive categories. – Drawing category maps. – odifying and verifying category networks.
	Analyzing a network of categories	- Definition and naming of categories. – Description and explanation of the network of categories.

Stage	Step	Action
Combine and merge text	Reportage	– Summarizing the network of categories and expressing it concisely and clearly. – Extracting interesting data samples. – Relating analysis results to research questions and theoretical foundations. – Writing a scientific and specialized report from the analysis.

Source: Khanifar and Moslemi (2021)

Table 3. The results of open and axial coding of the core category section

Core Category (C_1)		
General Category	**Concepts**	**Attributes**
Organizational Structure (C_{11})	Organizational change (C_{111})	Professional development of all elements of the organization, Acceptance of change, Change of attitude of senior managers.
	Organizational social development (C_{112})	Accountability, Social responsibility, Participation, Social justice, Expanding the level of trust, Transparency and justice, Clear and honesty.
	Biological development (C_{113})	Paying attention to the environment, Encouraging people to comply with environmental issues.
	Improve customer service (C_{114})	Customer interests, Focus on activities, Promotion of new services.

Source: Researcher's findings

Table 4. The results of open and axial coding of the casual conditions section

Casual Conditions (C_2)		
General Category	**Concepts**	**Attributes**
Providing advice for the supply of services by experienced human resources (C_{21})	Providing new banking services (C_{211})	Providing new banking plans and services, Providing facilities, Giving economic and financial advice.
	Individual characteristics of human resources (C_{212})	Manpower equipped with specialized and professional trainings, Recruiting elite forces, Hiring efficient people, Necessary skills, Focusing on the main activity in the organization, Organizational training, Awareness, Employee experiences, Forming working groups, Cooperation links, Resources Expert human, Software capabilities, Permanent cooperation, Directing human forces, Empowering human forces, Promoting financial knowledge, Maintaining and maintaining efficient forces, Encouraging employees, Looking only at expertise.
Preservation and provision of resources and preservation of the environment by suppliers (C_{22})	Supplier evaluation system (C_{221})	Creating a system for evaluating suppliers from an environmental point of view, Creating a system for evaluating suppliers from a social point of view.
	Optimal energy consumption (C_{222})	Reduction of gas emissions, Patterns of consumption, Optimal use of energy, Production factors, Reduction of consumption, Supply of consumed energy, Sources of energy, Supply of many products.
	Environmental Protection (C_{223})	Investing to preserve endangered species, The importance of sustainable development, Environmental standards, Reducing environmental damage.

Source: Researcher's findings

Table 5. The results of open and axial coding of the Context Conditions section

Context Conditions (C_3)		
General Category	**Concepts**	**Attributes**
Reconstruction of society's culture (C_{31})	Society culture (C_{311})	Organizational culture, Cultural limitations, Cultural attachment of economic plans.
	Conservation of historical monuments (C_{312})	Preservation and restoration, Preservation of natural resources of the country, Revival of intangible cultural heritage, Social environments.
Organizational characteristics (C_{32})	Institutionalization (C_{321})	Use of specialized institutions, Institutionalization, Supply of entrepreneurial knowledge, Daily needs of society.
	Independence and change of viewpoint (C_{322})	Changing the attitude of all officials, Appointment of managers, Independence of managers, Non-affiliation of managers, No change of bank officials, Absence of special biases.
	Organizational Structure (C_{323})	Employee promotion system, Reward allocation, Creating security within the organization, Research and development for innovation, Holding meetings, Establishment of organizational structures, Effective activity, Convenience and ease of use, System of attention to the issue of sustainable development, Necessary support of executive bodies, Providing advertisements, Producing advertising programs, Creating an innovation system, Making organizational management agile, Creating a brand, The ability to lead the organization, Job security for employees, Increasing financial knowledge, Avoiding sexism, The existence of work tools, Building internal and external trust, Creating Balance, Coordination and alignment with the cultural system, Advertising programs, Strengthening the health of employees, Updating banking knowledge, Significantly reducing time, Reducing the number of branches, Implementing creative ideas and thoughts, Creating a comprehensive information bank, Creating motivation in the bank's human resources, Calculating the efficiency of people, Creating a stable link, Stable relationship, public relations, Organizational chart, Maintaining the independence of units.
Evaluation of managers based on meritocracy (C_{33})	Competency-based management (C_{331})	Selection of strong management, Meritocracy system, Efficient scientific management, Management based on successful experiences with regulatory laws.
	Monitoring and inspection (C_{332})	Continuous monitoring, Internal and external controls, Use of different tools, Performance monitoring.
Investment Environment Analysis (C_{34})	Environmental Analysis (C_{341})	Improving the business environment, The homogeneous relationship between the external environment and the internal environment, Improving political conditions, Preventing any pollution, System infrastructures, Environmental factors caused by politicization, Creating a competitive environment, Creating facilities for public visits.
	Well Governance (C_{342})	Non-interference of governments, Corporate governance, Structure of corporate governance, Strict implementation of corporate governance, Cut off direct government interference.
	Capital analysis (C_{343})	Attracting domestic and foreign funds, Using emerging opportunities, Investing in the protection sector, Using fuel return indicators, Investment analysis and feedback, Project investment credit, Development plans, Financing mechanism, Infrastructure investments, Facilities and financial capacity.

Source: Researcher's findings

Table 6. The results of open and axial coding of the Intervening Conditions section

Intervening Conditions (C_4)		
General Category	**Concepts**	**Attributes**
Legal system (C_{41})	Drafting and implementing regulations (C_{411})	Legal requirements, Laws and regulations, Establishing laws, Effective implementation of laws, Eliminating physical correspondence and creating administrative automation, Instructions and directives.
	Code of ethics and customer rights (C_{412})	Ethics and accounting charter, Past records, Customer and shareholder rights charter.
Political system and environment (C_{42})	Political situation (C_{421})	Political system, Reduction of inequality, Fair distribution of facilities, Focus on the distribution of organizational power.
	Environmental status (C_{422})	Environmental plans, Importance to environmental issues.
Financial system (C_{43})	financial situation (C_{431})	Budget planning and allocation, Non-crediting of environmentally damaging projects, The amount of payment facilities, Non-crediting of unjustified projects, The number of financed projects, The amount of payment instruments.
	Capacities of electronic government (C_{432})	Using corporate banking capabilities, E-government, Marketing and branding capabilities, Digital banking capabilities, Hardware and software capabilities.

Source: Researcher's findings

Table 7. The results of open and axial coding of the Strategies section

Strategies (C_5)		
General Category	**Concepts**	**Attributes**
Strategic Analysis (C_{51})	Developing a strategic plan (C_{511})	Developing an organizational policy, Having accurate information, Coordination between the multiple goals of the organization, Balancing between the multiple goals of the organization, Understanding and quantifying the shortcomings and limitations, Creating a study mechanism, Obtaining information, Analyzing information, Presenting practical indicators to the people, Compiling Strategic plan, Information collection and analysis system, Definition and explanation of macro-organizational management.
	Strategy implementation (C_{512})	The strategy of these organizations, The implementation of the main mission, The strategy of combating the current factors, Reporting actions, Demand and budget allocation.
	Monitoring and correction performance (C_{513})	Corrective measures, Performance monitoring, Administrative system reform, Standardization of organizational processes and activities.
Providing financial resources from the participants (C_{52})	Providing financial resources (C_{521})	Establishing a payment system, Helping and securing project investment credit, Paying bonuses to bank customers, Paying bonuses to employees.
	Participation of organs (C_{522})	The level of participation of state banks in providing facilities, The level of participation of state banks with universities.
Improving political and communication conditions (C_{53})	Improving communication (C_{531})	Appropriate location of forces, Expansion of communication with customers, Increase of interactions, Expansion of international communications.
	Political conditions (C_{532})	Expanding social assets, Participating in national projects, Reducing government ownership, Supporting political movements.
Risk control to attract investment plans (C_{54})	Risk control and assessment (C_{541})	Risk control, Familiarity with credit risks, Reduction of external risks.
	Attracting economic and knowledge-based infrastructure projects, etc. for investment (C_{542})	Infrastructural and important economic projects, Designing and setting up all kinds of executive systems, Using databases, Segmentation and sharing, Attracting investors, Focusing on profitable projects, Infrastructure projects and knowledge base.

Source: Researcher's findings

Table 8. The results of open and axial coding of the Consequences section

Consequences (C_6)		
General Category	**Concepts**	**Attributes**
Economic and social productivity (C_{61})	Economic productivity (C_{611})	Improving productivity in the organization, Purposefulness of deposits, Effectiveness of facilities, Sustainable job creation, Multiplicity of service portfolio, Financial support of conferences, Fight against money laundering.
	Make a profit (C_{612})	Profitability, Allocation of financial resources, Financing.
	Customer retention and attraction (C_{613})	Allocation of resources and credit to customers, Customer retention.
Improving the level of information and services (C_{62})	Improving service quality level (C_{621})	Facilitation in services, Development of non-present electronic services, Quality of services, Provision of diverse and appropriate services, Use of virtual space and smart phones capabilities, Promotion of added value of services.
	Improving the information level (C_{622})	Improving the level of awareness of customers, Providing clear and up-to-date reports, Increasing the ability to provide information, Improving people's living standards.
Design and investment in services (C_{63})	Investment in services (C_{631})	Investment portfolio, Having system infrastructure, Project investment, Facilitating capital attraction, Appropriate distribution of financial resources, Financing special projects, Investing in environmental projects, Creating a platform for entrepreneurship, Expanding investment
	Design of service system (C_{632})	Designing and creating electronic service systems, Designing and creating remote work systems.
Developing competitive intelligence (C_{64})	Development of digital banking (C_{641})	Digital banking, Development of electronic banking, Setting up an electronic service desk.
	Development and improvement of community interests (C_{642})	Development of literacy, Technological development of financial instruments, Improvement of administrative equipment, Special attention to location, Development of smart space, Continuous development at the community level, Development of construction projects, Development of knowledge-based projects, Effectiveness of activities, annual development, Preservation National and sustainable interests, Continuous improvement.

Source: Researcher's findings

4-2. Quantitative assessment of conceptual framework (formulation of theoretical framework)

Then, the checklist of dimensions, items and indices of sustainable development in Iranian governmental banks was sent to panel of elites in Tehran Municipality ICT Organization and three rounds of Delphi technique was implemented to obtain their opinions on the subject under study. The opinions of experts on each item were analyzed by Shannon Entropy method. Entropy is an applicable concept in social sciences, physics and information theory, and an important weighting method in multi-criteria decision-making process. This technique requires a criteria – alternatives matrix and in the case that decision matrix data are known, it can be used to evaluate the weights. In information theory, entropy is a measure of uncertainty, whereby the greater the value of dispersion, the greater the importance of that index. In this method, closeness of the measured alternatives for an index reveals that rival alternatives are not significantly different in terms of that index, and then role of that index in decision making should be reduced accordingly (Azar & Rajabzadeh, 2020). Table 9 presents results of using Entropy technique.

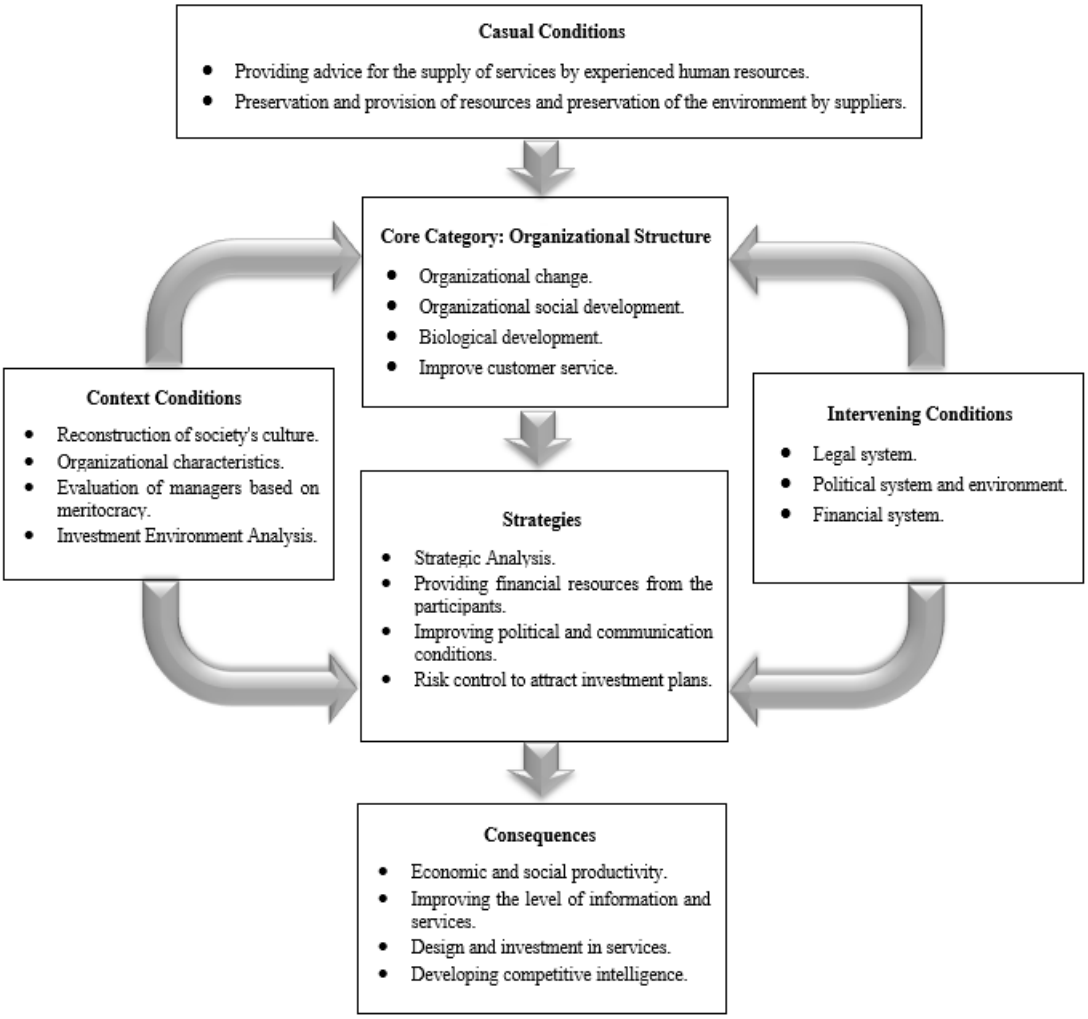

Fig 1. The theoretical framework for sustainable development in Iranian governmental banks extracted from the Grounded theory (Source: Researcher's findings).

As it is shown in Table 9, elites believe that the highest weights go to consequences (0.499), strategies (0.457), intervening conditions (0.450), core category (0.417), context conditions (0.416) and causal conditions (0.248) in the sustainable development of Iranian governmental banks, respectively. Moreover, regarding context conditions, giving consultation to provide services by experts, and protecting resources and environment by suppliers have the highest weight in sustainable development of Iranian governmental banks.

Also, in terms of consequences; Developing competitive intelligence (0.500), Economic and social productivity (0.499), Improving the level of information and services (0.499) and Design and investment in services (0.499), in terms of strategies; Providing financial resources from the participants (0.499), Improving political and communication conditions (0.499), Risk control to attract investment plans (0.499) and Strategic analysis (0.333), in terms of intervening conditions: Legal system (0.500), Political system and environment (0.500) and Financial system (0.499), in terms of core category; Organizational Structure (0.248) and in terms of context conditions; Reconstruction of society's culture (0.500), Evaluation of managers based on meritocracy (0.500), Investment

Environment Analysis (0.334) and Organizational characteristics (0.333) have the highest weight in sustainable development of Iranian governmental banks, respectively.

In the field of 'Economic and social productivity' respectively; Economic productivity (0.338), Make a profit (0.334) and Customer retention and attraction (0.327), in the field of 'Improving the level of information and services' respectively; Improving the information level (0.508) and Improving service quality level (0.492), in the field of 'Design and investment in services' respectively; Design of service system (0.508) and Investment in services (0.492), in the field of 'Developing competitive intelligence' respectively; Development of digital banking (0.511) and Development and improvement of community interests (0.489), in the field of 'Strategic Analysis' respectively; Developing a strategic plan (0.339), Strategy implementation (0.336) and Monitoring and correction performance (0.325), in the field of 'Providing financial resources from the participants' respectively; Providing financial resources (0.502) and Participation of organs (0.497), in the field of 'Improving political and communication conditions' respectively; Political conditions (0.502) and Improving communication (0.497), in the field of 'Risk control to attract investment plans' respectively; Attracting economic and knowledge-based infrastructure projects, etc. for investment (0.502) and Risk control and assessment (0.497), in the field of 'Legal system' respectively; Drafting and implementing regulations (0.508) and Code of ethics and customer rights (0.492), in the field of 'Political system and environment' respectively; Political situation (0.508) and Environmental status (0.492), in the field of 'Financial system' respectively; financial situation (0.502) and Capacities of electronic government (0.497), in the field of 'Organizational Structure' respectively; Improve customer service (0.259), Biological development (0.254), Organizational change (0.246) and Organizational social development (0.241), in the field of 'Reconstruction of society's culture' respectively; Society culture (0.505) and Conservation of historical monuments (0.495), in the field of 'Organizational characteristics' respectively; Independence and change of viewpoint (0.339), Institutionalization (0.336) and Organizational Structure (0.325), in the field of 'Evaluation of managers based on meritocracy' respectively; Monitoring and inspection (0.511) and Competency-based management (0.489), in the field of 'Investment Environment Analysis' respectively; Environmental Analysis (0.338), Well Governance (0.336) and Capital analysis (0.327), in the field of 'Providing advice for the supply of services by experienced human resources' respectively; Individual characteristics of human resources (0.505) and Providing new banking services (0.495), in the field of 'Preservation and provision of resources and preservation of the environment by suppliers' respectively; Environmental Protection (0.337), Optimal energy consumption (0.333) and Supplier evaluation system (0.330) have the highest weight in sustainable development of Iranian governmental banks.

Given the final results of grounded theory, and considering the extracted dimensions, items and indices of sustainable development in Iranian governmental banks, followed by application of Delphi technique, survey from panel of experts and using Shannon Entropy method on the collected data, theoretical framework of sustainable development in Iranian governmental banks can be formulated as it is shown in Figure 2.

Furthermore, the results of quantitative research imply the model's goodness of fit. It means that the collected data fit the research model. Then, the proposed model and all defined relations are established. According to this model, causal factors, which affect sustainable development in Iranian governmental banks with focus on green banking, include 'consultation on providing services by experts' and 'protecting resources and environment by suppliers'. Context factors, which affect sustainable development in Iranian governmental banks, with focus on green banking, include 'cultural reconstruction of society', 'organizational characteristics, 'assessment of mangers with respect to meritocracy', and 'analysis of investment environment'. Effective intervening conditions on sustainable development in Iranian governmental banks, with focus on green banking, include 'legal system', 'political-ecological system' and 'financial system'. The strategic factors which affect sustainable development in Iranian governmental banks with focus on green banking, include 'strategic analysis', 'financing by stakeholders, 'improving political conditions and communications', and managing risks to attract investments'. Core phenomena, which affect sustainable development in Iranian governmental banks with focus on green banking are 'social and economic productivity', 'improving degree of reporting and services', 'designing services and investing in them' and 'competitive smart development'. The results show that causal factors, intervening factors and context conditions affect the category. In addition, intervening factors and context conditions affect strategies, and strategies affect consequences.

Results of the present research are consistent with those of previous studies; Kumar and Prakash (2019), Yilmaz and Nuri Inel (2018), Domazet and Kovačević (2018), Aras, Tezcan and Furtuna (2018), Shabani, Habibi and Ali Zadeh (2018), Rahimi and Iman Pour (2018), Bieri and Vellacot (2017), Weber (2016), Kolk (2016), Radaideh and Al Azam (2015), Lalon (2015), Ansari and Sadeghi Moghadam (2015), Bihari and Pandey (2015), Falahi and Abo Torabi (2014), Barzegar and et al (2014), Grimm and et al (2014), Zailani and et al (2012), and Salimi Far and et al (2011).

Table 9. Findings from Shannon's entropy technique after three steps of Delphi technique

Dimension	Item	Index	Index			Item			Dimension		
			Mean	Informational load	Weight	Mean	Informational load	Weight	Mean	Informational load	Weight
C_1	C_{11}	C_{111}	3.67	0.93	0.246	3.78	0.94	0.248	3.78	0.94	0.248
		C_{112}	3.44	0.91	0.241						
		C_{113}	3.89	0.96	0.254						
		C_{114}	4.11	0.98	0.259						
C_2	C_{21}	C_{211}	3.34	0.95	0.495	3.26	0.96	0.500	3.51	0.96	0.416
		C_{212}	3.18	0.97	0.505						
	C_{22}	C_{221}	3.59	0.96	0.330	3.76	0.97	0.333			
		C_{222}	3.74	0.97	0.333						
		C_{223}	3.97	0.98	0.337						
C_3	C_{31}	C_{311}	3.24	0.99	0.505	3.16	0.98	0.500	3.52	0.95	0.417
		C_{312}	3.08	0.97	0.495						
	C_{32}	C_{321}	3.48	0.97	0.336	3.49	0.96	0.333			
		C_{322}	3.71	0.98	0.339						
		C_{323}	3.29	0.94	0.325						
	C_{33}	C_{331}	3.38	0.92	0.489	3.40	0.94	0.500			
		C_{332}	3.43	0.96	0.511						
	C_{34}	C_{341}	4.41	0.95	0.338	4.04	0.94	0.334			
		C_{342}	4.05	0.94	0.336						
		C_{343}	3.66	0.92	0.327						
C_4	C_{41}	C_{411}	4.11	0.96	0.508	4.01	0.95	0.500	4.31	0.96	0.450
		C_{412}	3.92	0.93	0.492						
	C_{42}	C_{421}	4.56	0.94	0.508	4.59	0.93	0.500			
		C_{422}	4.62	0.91	0.492						
	C_{43}	C_{431}	4.37	0.99	0.502	4.33	0.99	0.499			
		C_{432}	4.29	0.98	0.497						

Dimension	Item	Index	Index			Item			Dimension		
			Mean	Informational load	Weight	Mean	Informational load	Weight	Mean	Informational load	Weight
C_5	C_{51}	C_{511}	4.39	0.97	0.339	4.22	0.95	0.333	4.11	0.98	0.457
		C_{512}	4.19	0.96	0.336						
		C_{513}	4.08	0.93	0.325						
	C_{52}	C_{521}	4.63	0.98	0.502	4.43	0.98	0.499			
		C_{522}	4.24	0.97	0.497						
	C_{53}	C_{531}	3.79	0.97	0.497	3.87	0.98	0.499			
		C_{532}	3.95	0.98	0.502						
	C_{54}	C_{541}	3.84	0.98	0.497	3.93	0.99	0.499			
		C_{542}	4.02	0.99	0.502						
C_6	C_{61}	C_{611}	4.22	0.96	0.338	4.16	0.95	0.499	3.77	0.95	0.499
		C_{612}	4.17	0.95	0.334						
		C_{613}	4.10	0.93	0.327						
	C_{62}	C_{621}	3.90	0.94	0.492	3.94	0.96	0.499			
		C_{622}	3.98	0.97	0.508						
	C_{63}	C_{631}	3.74	0.96	0.492	3.71	0.98	0.499			
		C_{632}	3.69	0.99	0.508						
	C_{64}	C_{641}	3.34	0.95	0.511	3.28	0.93	0.500			
		C_{642}	3.23	0.91	0.489						

Source: Researcher's findings

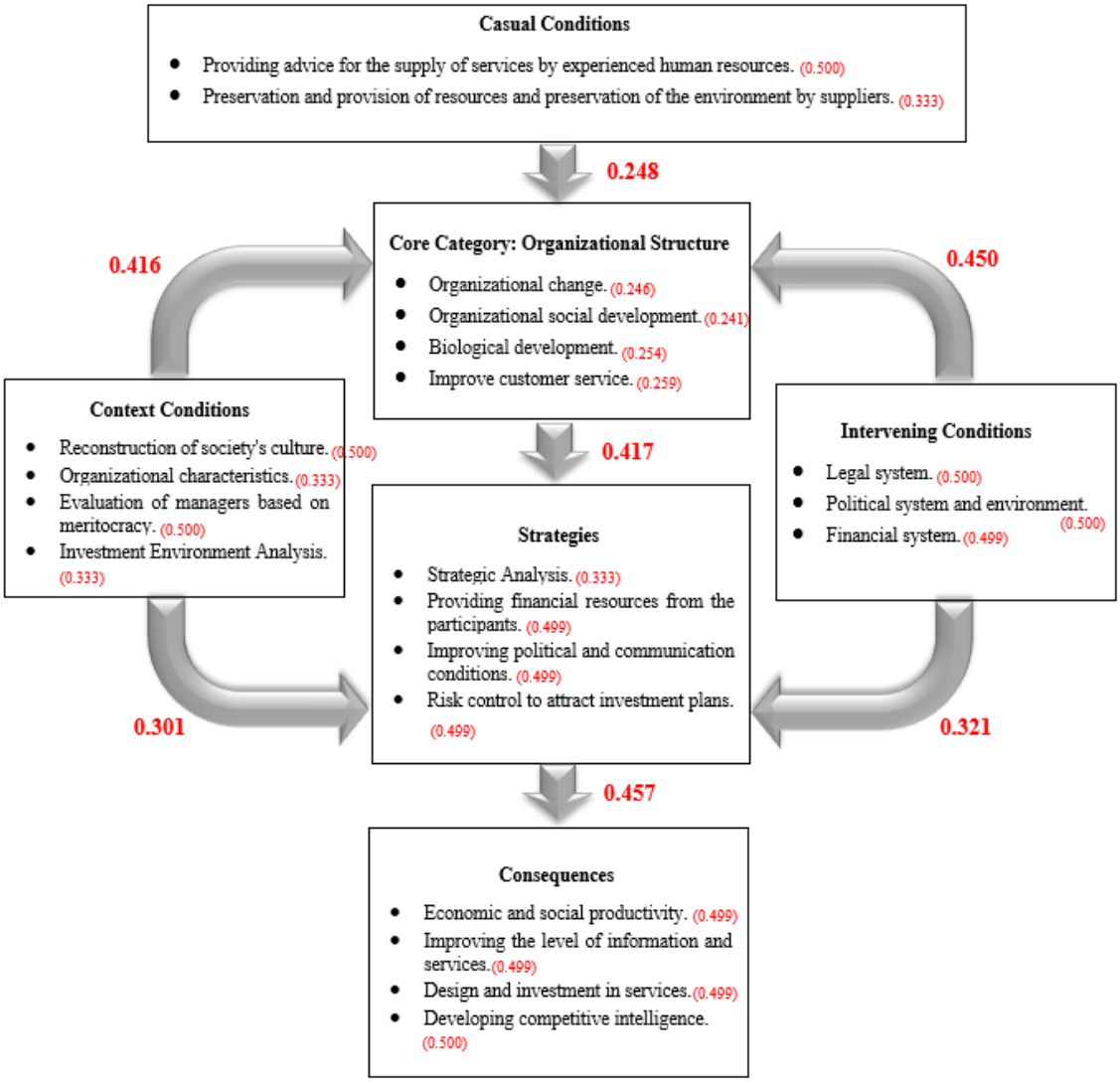

Fig 2. The conceptual framework of sustainable development in Iranian governmental banks based on experts' opinion (Source: Researcher's findings).

5. Conclusion

Goal of the present study is to develop theoretical framework of sustainable development in Iranian governmental banks. Overall, given the opinions of elites, the challenges and obstacles of sustainable development in Iranian governmental banks can be summarized as follows:

- The challenges confronting banking system can be summarized in environmental and macro levels across the banking network. In macro level, lack of independence in central bank and lack of coordination among authorities of monetary and financial policies represent the most important challenges.
- The heavy responsibilities and missions that have been defined for banking system, as well as unrealistic expectations from banks are other challenges for banking system. For instance, when capital market, for any reason, such as lack of deep markets characterized by different investment and risk management tools cannot fulfill its role in providing the funds for real part of economy, the banking system is charged with the duty of long term financing (currently, banking system accounts for more than 90% of financing activities in the economy). However, it makes sense that monetary market would play effective role in short-term financing. The current unpleasant conditions have made some banks stuck in long-term financing, getting away them from their major role in providing working capital for business enterprises.
- Lack of transparency and justice (providing audited financial statements to customers and public).
- The main challenge of banking system is the hidden disequilibrium in balance sheets and existence of an increasingly deep gap between assets and liabilities. This disequilibrium has imposed many challenges for national economy, including loans shrink, recession, and accelerated inflation. Social gaps and social unrest are secondary consequences of an unbalanced balance sheet.
- Bank regulations are another source of challenges for banking system. In fact, laws and regulations governing banking system suffer major weaknesses in terms of lacking detailed interpretations or lack of transparency. These regulations include: State Monetary and Banking Act, enacted in 1972, Usury-Free Banking Operation, enacted in 1983, and the rules derived from these laws, namely, decisions of Money and Credit Council, circulars of Iranian Central bank which design and explain architecture of banking system in macro level, and operational directions in micro level, as well as other applicable laws and regulations such as rules of five-year development plan, annual budgets, cabinet decisions and other guidelines which impose rules or duties for banking system. Given the rapid changes in economic, social and cultural circumstances of societies, along with technological advancement, which in general, affect banking operations around the world, it is necessary that governments revise and update regulations in shorter intervals compared to what happened in the past. Apparently, the regulations enacted more than three or four decades ago cannot respond to the emerging needs of present and near future rapidly.
- Inconsistencies in financial structure of banks, either in government – owned or private banks, present another challenges in banking systems. Low level of core capital and

high volume of repossessions and non-performing loans have led to loan shrink, reduced earnings, weakness in cash management, and blocking banking resources.

- Lacking the culture of interactions and communications between people and banks, and the need to provide up-to-date services by banks.
- Attempts toward improving quality of life of humans
- Lack of banks' interest for participating in infrastructure investments in the field of clean and renewable energies.
- Lack of competent managers who can implement the structured sustainable development in banks.
- Focusing on primary mission of banks and neglecting the social-political directions.
- Non-preparation of banking system to implement modern banking models. Today, despite development of novel banking models such as digital banking, corporate banking, etc the banks are not prepared, both in institutional and regulatory levels, for optimal application of these models across the banking network; whereas the future of banking sector depends heavily on state of the art technologies, as they reduce the length of administrative processes and help the banks to realize their mission effectively.
- Reduced level of awareness and information in staff.
- Disregarding the upstream and downstream requirements in governmental banks.
- Looking at past and taking no action to modify performance and procedures.
- Unhealthy competition in equipping monetary resources is another challenge confronting banking system. In one hand, it is consequence of emerging illegal credit institutions, and in other hand, it happens when banks are not able to manage liquidity and they will go into a significant liquidity deficit situation. It should be noted that proposing interest rates higher than established rates would eventually influence the banks which are obliged to adhere the laws, in a way that such banks will be compelled to enter an unhealthy competition in order to prevent liquidity crisis, proposing higher rates in comply with other market actors.
- Paying no attention to expert opinions and lack of all-inclusive analysis in major decisions of banking system can impose challenges to banking systems.
- Sustainable use of natural resources is the most important policy in environmental development. Other policies are suggested, including, incorporating environmental policies in development plans, participation, and education and tainting. Therefore, as environmental problems encompass international dimension, the internal efforts would not be sufficient; on the other hand, adoption of inappropriate foreign policy can bear another challenges for country.
- Lack of awareness on limitations and capacities of economic growth and their effects on environmental master plan.
- Poverty is an important obstacle in economic dimension of sustainable development. It is not limited to economic dimension, but it affects other dimensions too. In developing countries, poverty can intensify destruction of environment.
- Making a sustainable relationship between banking industry and university.
- Non-involvement of universities in solving the current problems of banking system.

- Insufficient efforts to improve public financial knowledge.
- Political orientation of banks' managers.
- Changing banking managers by change of governments.
- Existence of certain biases in providing services both in individual or regional levels.
- Non-collaboration among well-known international scientific, banking, credit institutions to develop human resources.
- Lack of meritocracy and executive search in practice.
- Lack of effective management.
- Lack of effective regulatory policy.

5-1. Limitations

Like any other behavioral or social research, the present study has some limitations that should be considered while generalizing the results. The limitations of this study are:

- Covid-19 pandemic affected process of research, causing selection of elites and interviews to be elongated, due to distancing and reluctance to participate in interview sessions.
- In present study the questionnaire was used to survey, therefore, there is possibility of unrealistic responses to some items.
- Limitation in effectiveness: even if the robust analytical methods were used in the study, it still would suffer from limited access to a particular population, individuals or a limited community. Therefore, the results obtained from a limited population could not be generalized to other communities.

5-2. Recommendations

The following recommendations are made based on the findings of the current study:

- It is recommended that banking authorities should provide the required infrastructure to promote rule of laws, preparing the economic, social and political context where encourages sustainable development in all dimensions and aspects.
- The government should recognize banking system as a business with the defined responsibility, not merely a solver of long-lasting problems.
- Economic system should be organized in a healthy way that can encourage sustainable development in all personal, sectoral, organizational, local, regional and national levels.
- It is recommended that senior managers of governmental banks elaborate a procedure to encourage employees on adoption and promotion of sustainable development.
- It is recommended that managers in organizations set forth a code of ethics in which the sustainable development is recognized as a systemic thinking and dominating culture.
- As economic growth is a critical criterion in achieving the economic welfare, it is recommended that the less-developed countries mobilize their resources to achieve this growth.
- Environmental impacts, both internal and external, should be minimized in banks. Banks have direct effects on environment due to their internal operations and investment in technologies. Some of these factors include greenhouse gas emissions, using electricity, using computers and ATMs, water consumption, waste disposal etc. although waste disposal and using papers in banks have relatively low impact on environment, due to extended domain of banking system, this effect may not be neglected. External effects are related to services and customers' behaviors.
- Balanced sustainability is recommended, because in practice, sustainability is a trade-off between

environmental necessities and developmental needs; this balance is achieved through two ways: reduced pressures, and increased capacities.

- It is recommended that sustainable development would be a development that meets current needs, without compromising ability of future generations to meet their own needs.
- Lack of social justice can disrupt development. Then, it is recommended that social development would precede other developments, such that the environmental capitals for future generations would not be disrupted.
- To understand sustainable development, it is required economic, social, political, environmental and cultural issues will be considered simultaneously.
- Another recommendation is repayment of loans of banks and contractors by government, aiming to increase banks' credit capacity and capital.
- Development and implementation of banking standards (in particular, standards pertaining to capitals) with purpose of approaching to international banking requirements.
- Development and compliance with strategies and plans of national economy, and modification of economic enterprises, to prevent waste of banking resources.
- Other major considerations to direct banking capacities toward value-creating economic sectors are: political and structural reforms in different levels, existence of an independent central bank, coordination of monetary policies, development of regulatory agencies along with modern banking and changing the banks' business models, modern corporate governance and implementing the scheduled plan of banking system.
- To find the solutions of improving economic and social conditions, it is recommended that to explore and compare development patterns in different regions and in different periods.

6. Acknowledgement

Hereby, all the people who helped us in this research, especially the board members of banks and all senior managers of credit and human resources management, deputies and employees working in Iranian governmental banks in Tehran, are paid the utmost gratitude.

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HOW TO CITE THIS ARTICLE:
Mohammad Ali Jafari Gorji, Reza Najaf Beigi, Abolhassan Faghihi, Mohammad Javad Kameli (2023). Design and Formulate a Conceptual Framework for Sustainable Development in Iranian Governmental Banks with the Delphi Technique and Shannon Entropy Approach, 4(3): 45-69.*

DOI: 10.30495/IJFAES.2023.73510.10133

Url: https://ijfaes.srbiau.ac.ir/article_16607.html
Journal homepage: https://ijfaes.srbiau.ac.ir