

Investigating Audit Committee Effectiveness and Related Factors to Improve Corporate Governance in Banks

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Abstract: This research aims to investigate audit committee effectiveness and its related factors to improve corporate governance in Iranian banks. In terms of purpose, this is an applied research, and in terms of data collection method, this is descriptive and non-experimental and in terms of research type, this is analytical. In this research, factors related to audit committee effectiveness were first found by searching and reviewing the relevant literature, then key factors of research and their relationship and priorities were achieved using grounded theory methodology which is a qualitative method, and using in-depth interview. According to studies, these factors are as follows: audit committee process, corporate governance environment, expertise, power, independence and resources. Also, data were analyzed using ANP-DEMATEL approach. According to the results of the research, it was concluded that the factor of "resources" has the highest effectiveness and interaction among the factors and the factor of "independence" is the most causal factor. Also, the factor of "power" with normal weight ranks the first priority.

Keywords: Audit Committee, Corporate Governance, Effectiveness

Introduction

Audit committee and factors affecting it are one of the most important subjects in the area of audit and capital market. The importance of this category in making a sense of trust in investors and enhancing transparency in capital market, ultimately leading to economic growth and development in countries, is obvious to all. However, due to recent developments and future prospects of the capital market, it is of the most importance to pay special attention to audit quality. At present, due to the general policies of Article 44 of the Iranian Constitution, the process of bank privatization has started since a short time ago, whereby the shares of a number of banks have been transferred to investors. In this regard, due to the scope of the activity of these firms and relatively high knowledge of potential investors in this regard in the first step, banks' capital is highly distributed among many investors, and as a result, owner's equity is distributed among many individuals. On the other hand, due to the fluidity of the number of this industry's customers worldwide, executive units are created under the title of "branch" in and out of the mainland indicating a wide range of activity of this industry. Also, due to the high share of financing of firms by bank facilities, the distribution of resources should be monitored by the owners.

Research objectives

The main purpose of the present research is to provide a model for audit committee effectiveness to improve corporate governance in banks.

This research is conducted specifically in the banking sector (regardless of the owners' type). However, the results can be used in other sectors.

Research questions

The research questions are presented and investigated as follows:

1. What are factors associated with audit committee effectiveness to improve corporate governance in banks?
2. How is the internal relationship among factors associated with audit committee effectiveness to improve corporate governance in banks?
3. How is the prioritization of factors associated with audit committee effectiveness to improve corporate governance in banks?

Theoretical framework of research

Since the adoption of the Sarbanes-Oxley Act in 2002, research on audit committees has developed geographically from the United States and the United Kingdom to other stock changes; for example, Carson (2002) in Australia, Chao and Leung (2006) in Hong Kong, Rinsbury, Bradbury and Kahan (2008) in New Zealand. In these countries, the mandatory requirements to establish audit committee are less stringent than those in the United States and the United Kingdom, and they can be considered as ones following countries that are at the forefront of corporate governance reform.

Corporates and shareholders rely on the judgment of audit committee members in regard with more supervision on areas such as risk, prevention of loss of company resources, accuracy of financial reporting and compliance with statutory and regulatory requirements (Jamei & Rostamian, 2016).

The main task of audit committee is to monitor, investigate and approve financial activities and to ensure that the activity of controlling and monitoring internal controls is complete (Ittonen et al., 2018). In recent years, establishment of audit committees has become mandatory, with more emphasis on their role in relation with financial reporting. Previously, researchers explained that quality of financial report reflects auditors' expertise and their supervisory activities (Wu et al., 2016).

Fakhari and Rezaei Pine Noei (2018) investigated the impact of audit committee expertise on corporate information environment. The results showed that there is a positive and significant relationship between audit committee financial expertise and corporate information environment, and audit committee financial expertise improves corporate information and enhances its measurement index.

Agyei-Mensah (2019) stated that earnings management can be easily investigated by audit committee. The overall impression is that audit committee size can have a positive impact on earnings quality. The larger audit committee can be more effective because they can have different specialists to perform effective operations (Agyei-Mensah, 2019).

In a research conducted by Chan and Li in 2008, audit committee financial expertise and the relationship between litigation risk and corporate governance were examined. It was concluded that organizations with higher potential risk for litigation were more likely to appoint financial experts to their audit committee. More in-depth analyses showed that the relationship between litigation risk and the possibility of appointing financial experts to organizations with strong corporate governance is more evident.

Extensive studies have been conducted on audit committees. It is necessary to review related literature to provide basic information for the present study. The purpose of the literature review is to investigate existing studies with a view to identifying gaps in information and knowledge about audit committee effectiveness.

In order to achieve audit committee effectiveness, some features should be considered as follows:

1. The ability to recognize potentially when analyzing and deciding;
2. Understanding audit processes (internal and independent);
3. Asking questions about present tasks and finding a suitable and convincing answer to them;
4. Having the necessary skill to communicate with executives, auditors and legislators;
5. A sense of innate curiosity (Hasas Yeganeh, 2005).

Most research conducted on audit committee effectiveness has focused on fundamental issues and factors (including composition, power, resources and diligence).

Dezort et al. (2002) have emphasized that audit committee effectiveness can protect the interests of stakeholders by ensuring reliable financial reporting, effective internal control and quality risk management (in other words through audit committee output). Research conducted by Dezort et al. (2002) is the first overall systematic review of audit committee literature focusing on the factors leading to audit committee effectiveness from the perspective of agency theory.

Bedard and Gendron (2010) investigated the relationship between audit committee characteristics and strengthening financial reporting system. They studied the scientific literature related to audit committee with the aim of evaluating the impact of audit committee on positive effectiveness of financial reporting environment.

Following the financial crises observed in the United States, Europe and even Japan in recent years, Anderson Company in January 2002, Enron in November 2001 and Worldcom in March 2002, corporate governance was recognized as a risk prevention tool (Sheila & Ronaldo, 2013).

Charo defines corporate governance as follows: "A set of mechanisms designed to limit the power and effectiveness on decisions made by managers. In other words, it monitors the management method and their precautions." Also, the Cadbury Committee defines corporate governance as follows: "A system through which societies are managed and controlled". In fact, it enables investors and activists to better control managers and prevents the most important financial misuses and embezzlements (Ziani, 2014). The internal audit association defines corporate governance as follows: "A set of processes and structures implemented by the board to inform, manage and monitor the activities of an organization in order to achieve its objectives."

In all organizations, poor corporate governance can lead to financial instability and consequently to increased overall risk status of organizations; this is more serious in regard with banks and financial institutions. In other words, poor corporate governance in banks and financial institutions reduces their ability to identify, monitor and manage leading risks and it can lead to low-quality facilities or excessive risk of financial institutions. Depending on the conditions of markets and financial institutions, these risks can spread to a wider level of financial system and it can lead to financial instabilities and possible bankruptcies (Central Bank of the Islamic Republic of Iran, 2009).

Idris Adamu Alhaji in a research investigated the role of audit committee in promoting appropriate corporate governance. The results of this study showed that failure in corporate governance is a major threat to the future of any organization. With corporate governance effectiveness based on the core values of integrity and truthfulness, corporates will enjoy competitive advantages in attracting and having geniuses and creating positive reactions in a competitive market. Corporate governance effectiveness can be achieved by adapting a set of perfectionist principles and norms. Organizations should consider corporate governance risks, including compliance with regulations, contract operations and the effectiveness of information system operations, reliability and accuracy of financial affairs, operational information and capital protection which are noticeable in the organization.

Materials and Methods

This is an exploratory research seeking to answer research questions using a well-accepted approach. One of the best methods in exploratory research is the mixed method. The present study uses a mixed research method. This method focuses on the central challenge of two quantitative and qualitative approaches rooted in paradigmatic disputes between positivists and non-positivists on ontological, epistemological and social sciences methodological assumptions.

In this research, a sequential-exploratory method is applied. In this method, first the qualitative data are collected and analyzed, then the quantitative data are collected and analyzed to test the model derived qualitatively. Finally, both qualitative and quantitative analyses are interpreted.

In this research, the research background is investigated and related factors are extracted using library and field method and a sequential-exploratory design. Then, using qualitative approach, data-based strategy is adopted and quantitative approach and ANP-DEMATEL method were used to test the model derived from qualitative studies and analyzes.

In the qualitative approach, data were collected using in-depth interviews with experts. Data were also analyzed applying data-based method. The result of using data-based strategy will be factors of audit committee effectiveness from the experts' viewpoint. The mentioned model is based on a quantitative approach; compatibility test will be used to confirm the model after extracting the model proposed.

The research population consists of 6 experts in monetary and auditing fields who have been present in audit committee at least in one bank since 2011. Subsequently, the parameters of forming audit committee are investigated and strengthened by holding meeting with experts as mentioned. Finally, the model will be formulated and tested by multiplying the relevant parameters and adjustment coefficients.

Results

This study was conducted using different qualitative (data-based approach) and quantitative methods. First, factors related to audit committee effectiveness (audit committee process, general corporate governance environment, expertise, power, independence and resources) were found by examining previous studies. Then, to examine these factors, a purposeful and following it a theoretical sampling were applied. Data were collected and analyzed simultaneously. Two methods were used for data collection: unstructured interviews and taking notes resulted from interviews with 6 experts. Interviews conducted through open-ended questions; each interview lasted approximately 45 to 90 minutes (average: about one hour). All interviews were recorded and transcribed and approved by participants. The data obtained from each interview were coded in written form and analyzed using constant comparative analysis in accordance with the Strauss and Corbin method. After each interview, conversations were changed to texts using Microsoft Word software. All interviews were repeatedly reviewed and read line by line. They were coded using keywords in the text or ones inferred by the researcher. Three stages of open, axial and selective coding were performed on data. During the study, methods were used to ensure the accuracy and reliability of the research. The researcher's long-term contact and communication with research sites, relevant authorities and contributors attracted participants' trust and helped the researcher understand research environment. Participants reviewed the data in order to verify the accuracy of data and codes; interview transcript was returned to participants to ensure the accuracy of codes and interpretations. Codes that were not consistent with participants' viewpoint were corrected; this method is called "external browsers" leading to internal validity of research. After coding, multi-criteria decision making and ANP technique were used to rank final factors; DEMATEL technique was applied to determine the relationships between main variables, and finally data were analyzed using Excel software.

In this research, the researcher survey and review the prevailing operations in regard with establishing audit committee in banks and providing an effective model for audit committee to improve corporate governance. The coding process was applied to analyze the data collected through grounded theory method. Basically, interviews were examined based on the establishment of audit committee effectiveness in the form of six conceptual factors (audit committee process, power, independence, resources, overall environment, and corporate governance). It should be noted that there was a face to face interview conducted directly by the interviewer (researcher).

Then, interviewers were numbered from 1 to 6, and the data coding process was repeated for three times. In each stage, the interview transcripts are coded in sequence and divided into different sets of codes (which will be used as alternatives); as a result, different sets of developed codes are created.

Interviews stages and their examination are presented in three steps as follows:

First stage: Interviewees' understanding of their own role in audit committees;

Second stage: Researchers understanding of interviewees' responses;

Third stage: Classifying topics and subjects based on researcher feedback and similarities.

Then, the main variable is determined; focusing on the process, the researcher found that which category or variable has been most frequently repeated in the data and is capable of connecting other variables to each other.

These factors were extracted from the research literature:

1. Audit committee process: This includes frequency of meetings, meetings' schedule, inter-organizational relationships and leadership

2. Resources: This includes organization size, financial resources allocated to committee and information resources available to the committee. Audit committee should have access to all resources required to carry out its responsibilities. Assistance and support of internal auditors, external auditors and audit committee size are among the most important determinants of audit committee effectiveness.

3. Overall corporate governance environment: This includes corporate governance structure and Post-SOX changes or any other changes to relevant laws and regulations.

4. Independence: This factor monitors committee's working, employment, personal and business relationship with the organization.

5. Expertise: This includes individual characteristics of committee member in terms of financial literacy, financial expertise, supervisory expertise and other specialties.

6. Power: This includes monitoring the external communications of the internal control system and monitoring independent auditor.

Audit committee responsibilities are very diverse. The evidence shows that these responsibilities are gradually increasing over time. Of course, the research background shows that monitoring financial reporting, financial auditing and financial controls are among its most important responsibilities which are considered as examples of committee power.

The analysis of experts' opinions indicates that the six main conceptual components derived from the review of the related literature have been selected accurately. At this stage, after open coding, the process of systematically selecting the main category and linking it to other categories is to validate relationships and fill the gaps with those categories that need further refinement and development. The coding is the process of integration and refinement of categories in order to create the theory; in this regard, the internal relationships between factors are identified using DEMATEL technique, and finally they are ranked using ANP technique.

According to Table 1, audit committee process with 188 frequency has the highest rank, and resources with 35 frequency has the lowest rank in the interviews.

Table 1. The stage of ranking factors

| Factors | Frequency |
|--|-----------|
| Audit committee process | 188 |
| Overall corporate governance environment | 171 |
| Expertise | 113 |
| Power | 50 |
| Independence | 44 |
| Resources | 35 |

According to the above-mentioned explanations, to indicate the internal relationships among six key factors associated with audit committee effectiveness in order to enhance corporate governance in banks, the conceptual model of research is presented in Figure 1 as follows:

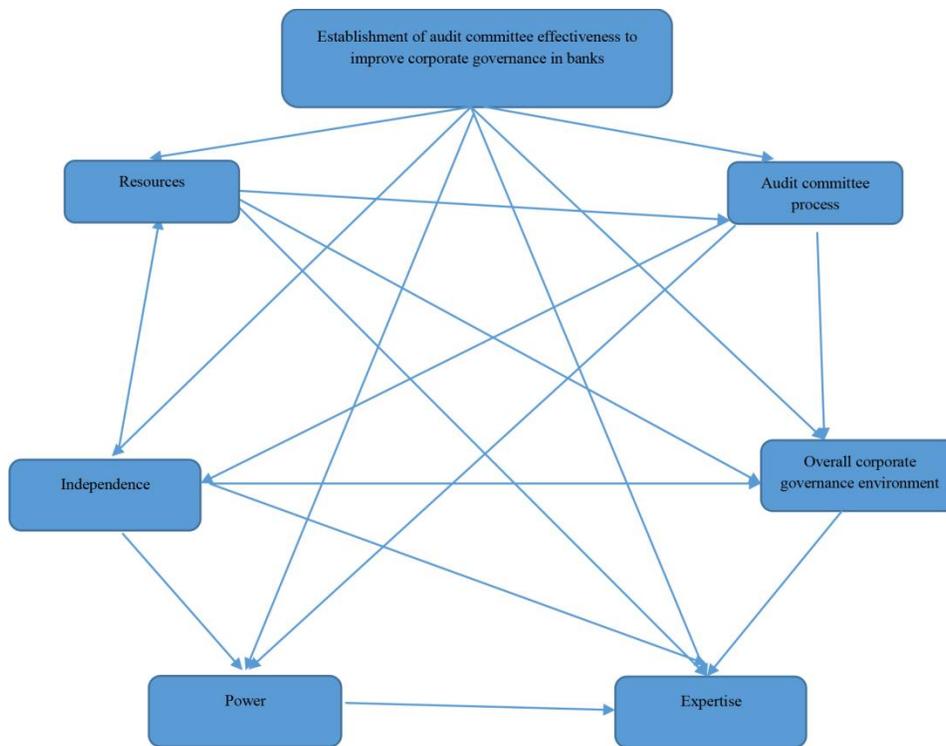


Figure 1. The conceptual model of research

Model of relationships among variables by DEMATEL technique

DEMATEL technique was used to reflect the interrelationships between criteria; so that experts are more able to express their views on the effects (effects' direction and severity) among factors. It should be noted that the matrix

derived from DEMATEL technique (matrix of internal relationships) shows cause-effect relationship among factors and the category of being affected as well as their effectiveness on other variables.

First step: Calculating direct-relation matrix (M)

Simple arithmetic mean of views is applied when using several experts' viewpoints, and the direct-relation matrix (M) is formed (Table 2).

Table 2. Direct-relation matrix (M)

| M | Overall corporate governance environment | Audit committee process | expertise | Power | Independence | Resources |
|--|--|-------------------------|-----------|-------|--------------|-----------|
| Overall corporate governance environment | 0.000 | 2.700 | 2.800 | 2.100 | 2.300 | 3.300 |
| Audit committee process | 2.600 | 0.000 | 3.100 | 2.200 | 2.100 | 3.300 |
| Expertise | 2.300 | 2.400 | 0.000 | 3.000 | 3.100 | 3.600 |
| Power | 3.000 | 2.900 | 2.500 | 0.000 | 3.400 | 3.500 |
| Independence | 3.700 | 3.500 | 3.100 | 3.700 | 0.000 | 3.500 |
| Resources | 3.500 | 3.600 | 3.400 | 3.500 | 3.700 | 0.000 |

Second step: Calculating normal direct-relation matrix

First, the sum of all rows and columns is calculated. The reverse of largest number forms rows and columns of K. According to Table 3, the largest number is 17.700, and all values are multiplied by this number reverse to normalize the matrix.

$$k = \frac{1}{\max \sum_{j=1}^n a_{ij}} = \frac{1}{17.700} = 0.0565$$

$$\Rightarrow N = K * M \text{ } 0.0565M$$

Table 3. Normalized matrix (N)

| N | Overall corporate governance environment | Audit committee process | expertise | Power | Independence | Resources |
|--|--|-------------------------|-----------|-------|--------------|-----------|
| Overall corporate governance environment | 0.000 | 0.153 | 0.158 | 0.119 | 0.130 | 0.186 |
| Audit committee process | 0.147 | 0.000 | 0.175 | 0.124 | 0.119 | 0.186 |
| Expertise | 0.130 | 0.136 | 0.000 | 0.169 | 0.175 | 0.203 |
| Power | 0.169 | 0.164 | 0.141 | 0.000 | 0.192 | 0.198 |
| Independence | 0.209 | 0.198 | 0.175 | 0.209 | 0.000 | 0.198 |
| Resources | 0.198 | 0.203 | 0.192 | 0.198 | 0.209 | 0.000 |

Third step: Calculating total-relation matrix

To calculate total-relation matrix, first identity matrix (I) is formed. Then, normal matrix is subtracted from identity matrix, and the matrix obtained is reversed. Finally, the normal matrix is multiplied by the reverse matrix (Table 4):

$$T = N \times (I - N)^{-1}$$

Table 4. Total-relation matrix (T)

| T | Overall corporate governance environment | Audit committee process | expertise | Power | Independence | Resources |
|--|--|-------------------------|-----------|-------|--------------|-----------|
| Overall corporate governance environment | 0.809 | 0.943 | 0.938 | 0.889 | 0.903 | 1.058 |
| Audit committee process | 0.941 | 0.814 | 0.955 | 0.897 | 0.899 | 1.063 |
| Expertise | 0.999 | 1.004 | 0.873 | 1.000 | 1.010 | 1.152 |
| Power | 1.071 | 1.067 | 1.039 | 0.894 | 1.061 | 1.194 |
| Independence | 1.201 | 1.194 | 1.165 | 1.165 | 0.999 | 1.309 |
| Resources | 1.204 | 1.209 | 1.189 | 1.168 | 1.183 | 1.157 |

Fourth step: Showing network relationship map (NRM)

The threshold intensity should be calculated to determine NRM by which partial relationships can be neglected and reliable relationship network can be outlined. Only relations with values higher than threshold value in T-matrix are displayed in NRM. To calculate the threshold value of relations, it is sufficient to calculate the mean of the T-matrix values. After determining threshold intensity, all values of T-matrix which are lower than the threshold become zero; in other words, it is not considered as causal relation. In this research, threshold intensity was 1.045; therefore, the model of significant relationships is shown in Table 5 as follows:

Table 5. Model of significant relationships among factors

| NRM | Overall corporate governance environment | Audit committee process | expertise | Power | Independence | Resources |
|--|--|-------------------------|-----------|-------|--------------|-----------|
| Overall corporate governance environment | * | * | * | * | * | 1.058 |
| Audit committee process | * | * | * | * | * | 1.063 |
| Expertise | * | * | * | * | * | 1.152 |
| Power | 1.071 | 1.067 | 1.039 | * | 1.061 | 1.194 |
| Independence | 1.201 | 1.194 | 1.165 | 1.165 | * | 1.309 |
| Resources | 1.204 | 1.209 | 1.189 | 1.168 | 1.183 | * |

Regarding the relationship model, the causal graph is displayed according to the numbers obtained from Table 4 and relationships based on Figure 2. Accordingly, all factors affect the category of resources represented by the symbol C6, and this factor affects all other factors. In the meantime, overall corporate governance environment by the symbol C1, audit committee process by the symbol C2 and expertise by the symbol C3 have the least influence on other factors and they only affect resources factor; on the other hand, power factor by the symbol C4, independence by the symbol C5 and resources factor by the symbol C6 affect all factors except themselves.

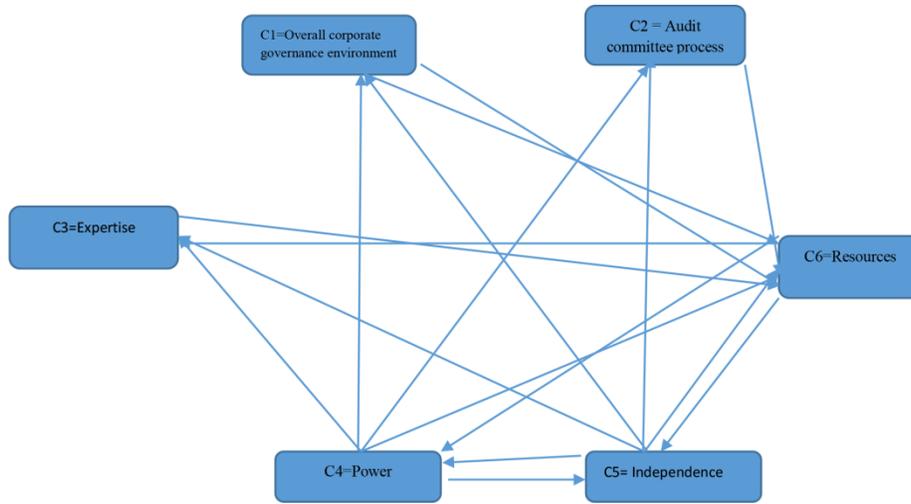


Figure 2. Output of internal relationships among research factors

The causal relationships model of main factors is shown in Table 6. In this table, the sum of values of each row (D) indicates the extent to which that factor affects other factors of the model. Accordingly, resources factor is most effective. Independence is the next. The overall corporate governance environment factor has the least impact on other components. The sum of values of column (R) for each factor indicates the extent to which that factor has been influenced by other factors in the system. Accordingly, resources factor has a high degree of effectiveness. Power has the least effectiveness. The horizontal vector (D + R) shows the effect and effectiveness degree of the factor considered. In other words, the higher D + R factor, the more it interacts with other factors in the system. Accordingly, the resources index has the highest interaction with other factors studied. The overall corporate governance environment has the least interaction with other factors. The vertical vector (D - R) shows the effect power of each factor. In general, if D - R is positive, the variable is considered as causal, and if it is negative, the factor has been affected. In this model, factors of power, independence and resources are causal and factors of overall corporate governance environment, audit committee process and expertise have been affected.

Table 6. Causal relationships model of main factors

| Factor | Symbol | D | R | D + R | D - R |
|--|--------|-------|-------|--------|---------|
| Overall corporate governance environment | C1 | 5.541 | 6.225 | 11.766 | - 0.684 |
| Audit committee process | C2 | 5.569 | 6.231 | 11.800 | - 0.662 |
| Expertise | C3 | 6.039 | 6.160 | 12.199 | - 0.121 |
| Power | C4 | 6.326 | 6.013 | 12.339 | 0.313 |
| Independence | C5 | 7.034 | 6.056 | 13.091 | 0.978 |
| Resources | C6 | 7.110 | 6.934 | 14.043 | 0.176 |

Cartesian coordinate diagram is shown in Figure 3 in which the horizontal vector displays the degree of interaction between factor (D + R), and the vertical vector displays the effect power of each factor (D - R); accordingly, the resource factor has the most interaction with other factors, and the independence factor is the most causal one.

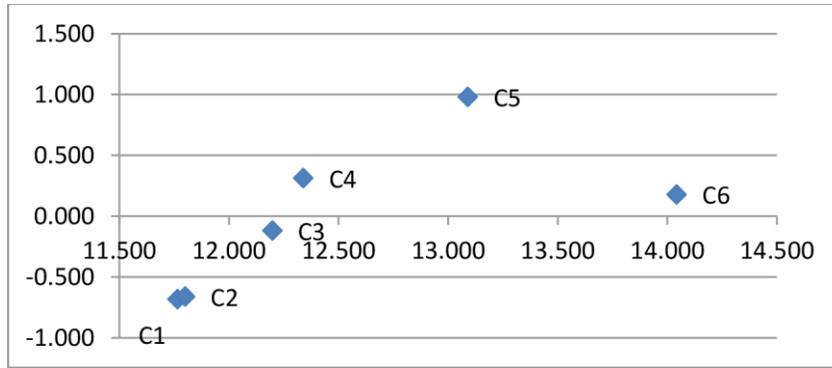


Figure 3. Cartesian coordinate chart obtained from DEMATEL method

Fifth step: Calculating the weight of factors

1. Forming comparative matrix and controlling their compatibility

At this stage, factors comparative matrix and dependency of factors to each other are displayed and their compatibility is controlled.

2. Paired comparison of factors

To calculate the relative weight, experts' opinions were applied according to ANP method (pairwise comparison), including a matrix for paired comparison of factors. Since there are six factors, the number of comparisons will be calculated as follows:

$$\frac{n(n-1)}{2} = \frac{6(6-1)}{2} = 15$$

In addition, their incompatibility will be examined separately.

Table 7. Paired comparison matrix of factors (regardless of internal dependency of factors)

| No. | Factors | A | B | C | D | E | F | Weights |
|-----|---------|-------|-------|-------|-------|-------|-------|---------|
| 1 | A | 1 | 1.245 | 1.393 | 0.468 | 0.514 | 2.686 | 0.157 |
| 2 | B | 0.803 | 1 | 2.382 | 1.069 | 0.648 | 1.543 | 0.179 |
| 3 | C | 0.718 | 0.420 | 1 | 0.530 | 1.515 | 1.650 | 0.131 |
| 4 | D | 2.139 | 0.935 | 1.888 | 1 | 3.987 | 2.338 | 0.287 |
| 5 | E | 1.947 | 1.543 | 0.660 | 0.251 | 1 | 1.216 | 0.154 |
| 6 | F | 0.372 | 0.648 | 0.606 | 0.428 | 0.822 | 1 | 0.091 |

(IR= 0.07 < 0.1)

The results obtained from analysis of Table 7, regarding factor weights, show that power factor (D) with relative weight of 0.287 is in first rank, and then expertise factor (B) with relative weight of 0.179 is in second rank, independence factor (A) with relative weight of 0.157 is in third rank, overall corporate governance factor (E) with relative weight of 0.154 is in fourth rank, audit committee process (C) with relative weight of 0.131 is in fifth rank and resources factor (F) with relative weight of 0.091 is ranked sixth. Also, incompatibility rate of this matrix is acceptable and expert judgment can be trusted. The result of this paired comparison as well as the vector resulted (w_{21}) is given below.

$$w_{21} = \begin{bmatrix} A & 0.157 \\ B & 0.179 \\ C & 0.131 \\ D & 0.287 \\ E & 0.154 \\ F & 0.091 \end{bmatrix}$$

Discussion and Conclusion

This research aims to present a model for audit committee effectiveness to improve corporate governance in banks. In terms of purpose, this is an applied research, and in terms of data collection method, this is descriptive and non-experimental and in terms of research type, this is analytical. In this research, factors related to audit committee effectiveness were first found by searching and reviewing the relevant literature, then key factors of research and their relationship and priorities were achieved using grounded theory methodology which is a qualitative method, and in-depth interview with six experts. According to studies, these factors are as follows: audit committee process, corporate governance environment, expertise, power, independence and resources. Also, data were analyzed using ANP-DEMATEL approach.

In the present study, since research approaches in operations have been used, the research population is consisted of experts in the field. In each phases of the study, the expert group has been determined based on the technique used. In the first phase of the study, final factors of the research were identified using data-based theory method. In the next phase, the internal relations among factors were measured using DEMATEL technique. Then, the network analysis process was used for prioritization. At the next stage, forming weighted and un-weighted matrix, limit matrix is calculated applying MATLAB software, and finally the factors are prioritized.

Answering research questions

First question: What are factors associated with audit committee effectiveness to improve corporate governance in banks?

Audit committee process: This includes frequency of meetings, meetings' schedule, inter-organizational relationships and leadership

2. Resources: This includes organization size, financial resources allocated to committee and information resources available to the committee. Audit committee should have access to all resources required to carry out its responsibilities. Assistance and support of internal auditors, external auditors and audit committee size are among the most important determinants of audit committee effectiveness.

3. Overall corporate governance environment: This includes corporate governance structure and Post-SOX changes or any other changes to relevant laws and regulations.

4. Independence: This factor monitors committee's working, employment, personal and business relationship with the organization.

5. Expertise: This includes individual characteristics of committee member in terms of financial literacy, financial expertise, supervisory expertise and other specialties.

6. Power: This includes monitoring the external communications of the internal control system and monitoring independent auditor. Audit committee responsibilities are very diverse. The evidence shows that these responsibilities are gradually increasing over time. Of course, the research background shows that monitoring financial reporting, financial auditing and financial controls are among its most important responsibilities which are considered as examples of committee power.

Second question: How is the internal relationship among factors associated with audit committee effectiveness to improve corporate governance in banks?

To reflect interactions among factors, DEMATEL technique has been used, so that direct-relation matrix of indices was first formed. According to the analysis, the resources factor is the most effective one. Independence is the next. The overall corporate governance environment factor has the least impact on other components. The resource factor has been affected greatly. Power has been affected less than other factors. The factor of "resources" has the highest interaction with other factors. The factor of overall corporate governance environment has the lowest interaction with other variables. In this model, factors of power, independence and resources are causal and factors of overall corporate governance environment, audit committee process and expertise have been affected. All factors affect the category of resources and this factor affects all other factors. In the meantime, overall corporate governance environment, audit committee process and expertise have the least influence on other factors and they only affect resources factor; on the other hand, power factor, independence and resources factor affect all factors except themselves.

Third question: How is the prioritization of factors associated with audit committee effectiveness to improve corporate governance in banks?

The power factor with relative weight of 0.287 is in first rank, and then expertise factor with relative weight of 0.179 is in second rank, independence factor with relative weight of 0.157 is in third rank, overall corporate governance factor with relative weight of 0.154 is in fourth rank, audit committee process with relative weight of 0.131 is in fifth

rank and resources factor with relative weight of 0.091 is ranked sixth. Also, incompatibility rate of this matrix is 0.07 which is lower than accepted value (0.1); therefore, it is acceptable and expert judgment can be trusted.

According to the results of the research, the "resources" factor is the most influential one compared to other factors; it indicates that the more the factor of resources applied in banks in regard with audit committee, the more effective establishment of audit committee will be; accordingly, overall corporate governance environment will be influential. This only happens when audit committee is composed of expert, powerful and independent individuals; hence, resources factor is identified as the most influential one. In general, it can be said that allocation of resources as the double-edged sword is affected by expertise, power, independence, audit committee process and overall corporate governance environment, and at the same time it affects these factors.

Professional auditing power is bound with professional thinking within framework of economic logic. The audit supervisory role is applicable if the auditing has the professional power to assist in securing corporate governance in banks by observing professional standards. On the other hand, enhancing the professional power of auditing through expertise achieved by understanding bank risks and internal controls to mitigate these risks, it assists management and offers recommendations to improve the situation.

Various environmental and individual factors can influence audit committee effectiveness in banks. Each of these factors can affect individuals' independence. Specialist auditors can operate independently and far from individual and environmental pressures; only expertise is enough. If these people are not expert in their field of work, this means that they are not able to act independently without others help, and it will negatively affect their performance. In general, auditing can make financial statements clear, when it is independent and far from environmental pressure and authority of financial statement maker; therefore, it requires independence. If there is a desire for independency, it requires clear and strict regulations on behalf of public interests to pave the way for auditor independence.

The formation of banks and small and large financial and credit institutions, and then issues related to separation of ownership from management and financial crises in recent years have made some banks and small and large financial and credit institutions pay too much attention to corporate governance. Changes in corporate governance and business environments have led to extensive corporate restructuring around the world. If the auditing process is a systematic process of gathering and evaluating evidence and commenting on compliance with predetermined factors; and considering the importance and accuracy of financial statements, if independent and expert auditing committee expresses its own viewpoint, and if the audit committee assures that the bank's financial status is properly displayed in the financial statements, the audit committee can obtain accurate and clear information about resources factor. Independence is one of the most important factors of audit committee effectiveness, and it is considered as existential philosophy and spirit of independent audit. At the same time, being certain about expertise of audit committee including audit knowledge, sufficient experience in this regard, knowledge of financial statements, auditor expertise and acceptance of membership in new committee due to expertise and interest are among most important reasons to employ these members. The audit committee should consist of strong members who can carry out their responsibilities with no fear. These all will result in audit committee effectiveness without any fault leading to improved corporate governance in banks.

The audit committee is formed to assist the board of directors in carrying out its responsibilities. In this regard, there are major tasks such as increasing confidence in regard with objectivity of the financial information, cooperation with board members to fulfill financial responsibilities and enhancing independence of board members. Currently, audit committees seek to monitor corporate governance system, financial reporting, internal control structure, performance of independent and internal auditors and services provided by them. Establishing audit committee effectiveness in banks results in improving corporate governance and thus reducing investment risk, improving the quality of intra- and inter-organizational decision-making, increasing return on trading securities and improving investment portfolio structure and various individuals and groups. Considering the important role of banks in financial intermediation, their overwhelming talent due to inefficient corporate governance and necessity to keep depositors' funds safe, have made establishment of corporate governance effectiveness more important than the past for international financial system; it requires to provide targeted supervisory guidelines.

The audit committee in banks should continuously support minority shareholders with detailed report of working balance and banks financial reports in a short-term and certain time. In this case, banks information will be fully transparent through the access of all shareholders to a single and certain financial report; accordingly, shareholders rights will be observed equally.

Compared to other previous research, it can be said that Idris Adamu Alhaji (2012) consistent with the present research investigated the role of audit committee in improving appropriate corporate governance. The results of this study showed that experts and geniuses should be employed in audit committee. Corporate governance effectiveness can be achieved by adapting a set of perfectionist principles and norms. Organizations should consider corporate governance risks, including compliance with regulations.

Claessense & Yurtoglu (2013) conducted a research with the title of corporate governance in emerging markets in which overall corporate governance environment was considered as an important and effective factor in creating corporate governance. They also considered environmental performance as an effective factor in corporate governance.

Bedard and Gendron (2010) investigated the relationship between audit committee characteristics and strengthening financial reporting system. It was consistent with the present research, and they concluded that independence, power, expertise, overall corporate governance environment and audit committee process are identified as main factors.

Acceptance in the most stock exchanges in the world requires that all companies and applicants accepted in the stock exchange should form at least a few committees, including audit committee, rights and benefits committee and corporate appointment and leadership committee in which all or most of its members should be independent (Mashayekhi & Mehrani, 2016).

Regarding the above-mentioned information, establishment of audit committee effectiveness in banks results in improving corporate governance and thus reducing investment risk, improving the quality of intra- and inter-organizational decision-making, increasing return on trading securities and improving investment portfolio structure and various individuals and groups.

In a consistent research, Turley and Zaman (2004), emphasized on factors such as overall corporate governance environment and audit committee process.

In a consistent research, Dezoort et al. (2002) considered power and resources factors influential in audit committee effectiveness. They also considered composition and diligence influential in this regard. Composition includes factors such as independence and expertise, and diligence is considered within the factor of audit committee process in this research. All factors mentioned in the research were studied and covered.

In a consistent research, Klein (2002) introduced independence as one of the main components.

Therefore, it can be said that regarding previous studies and considering wide range of factors and examining all factors and their relationship with each other, the model presented in this research covers the results of previous studies; accordingly, it is considered as an efficient model to achieve research objectives.

Some practical suggestions are offered as follows:

- The "resources" factor is the most influential component and has the highest interaction with other factors. It has been affected more than other components; hence, it can be said that before establishing audit committee, appropriate resources allocation strategies (financial and information) should be adequately formulated by audit committee because this component has the highest level of cause and effect.

- The "power" factor ranked the first priority among other components; hence, it can be said that to increase audit committee power, this committee should be able to easily and accurately investigate qualifications of independent auditors and be able to submit proposals for removal and keeping them. Also, audit committee should monitor establishment and performance of internal control system and internal audit unit without any limitation and offer its own efficient recommendations. In this regard, to ensure the board of directors, audit committee opinions should be applied in the formulation of bank's strategic system. Finally, the audit committee as the bank's highest supervisory unit, should monitor financial performance and prevent financial distortions timely and lead banks financial processes to standards and clarity.

Conflict of interest

The authors declare no conflict of interest

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