

The Effect of Gender Diversity among Managers and Members of the Audit Committee on Audit Costs

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Abstract: Objectives: Simultaneously with improving the situation of women in society and revealing their talents and competencies, their ability to carry out executive and managerial tasks becomes clearer than ever, also, differences in gender maps are one of the most important biological empirical areas between men and women that exist throughout societies and cultures. Therefore, the present study considers and evaluates gender diversity among managers and members of the audit committee on the audit costs of companies listed on the stock exchange. Method: In order to achieve the research goal, the data of 151 companies has listed on the stock exchange were selected by systematic elimination method during 7 inter-year periods (2013-2014). Gender diversity is measured using the variables, the presence of a female member in the audit committee, the board of directors. The research hypotheses were also tested using linear regression analysis with panel or combined data and Eviews10 software. Results: The experimental results of the study showed that gender diversity among managers could moderate the cost of auditing but gender diversity in the audit committee had no effect on audit costs.

Keywords: Gender Diversity, Audit Committee, Board of Directors, Audit Fee.

Introduction

This study examines the effect of the presence of a female member on the audit committee on the quality of the audit. In addition, we examine whether the financial expertise (accounting and non-accounting) of female members of the audit committee improves audit quality or not.

Empirical research provides evidence that the presence of female managers on the audit committee improves revenue quality (Trovadi and Huang, 2011). The role of the audit committee is to oversee the financial statements (Aldaman, 2018) and thus reduce agency costs (Halliwall, Nicker, & Navisi, 2010). Which shows the importance of audit committees. In addition, Bardard and Jendron (2010) stated that audit quality is one of the mechanisms for determining the effectiveness of the audit committee. Female executives on audit committees are expected to effectively oversee management, thereby improving audit quality because female executives are more likely to be less tolerant of opportunistic behaviors (Zlata, 2018).

After the collapse of companies like Enron, policymakers decided to make fundamental changes to corporate governance regulations. They included gender diversity in the system so that they could leave behind the considerations of a group consisting only male board members (Vahid, 2019).

Regulators in different countries have set mandatory quotas for women. For example, Norway, Spain and France have a 40% quota policy for women, and non-compliance is accompanied by penalties such as fines, a negative effect on government contracts, and non-payment of executive fees (Trajsen & Sili, 2016).

Previous research has examined the relationship between female managers on the audit committee and audit quality, but executives lacked the necessary accuracy in evaluating the quality of the audit.

Abdia (2019) believes that the researcher's use of indirect indicators to measure intangible audit processes is a poor way to measure audit quality. Thus, determining the quality of auditing from the perspective of auditors (executives, auditing companies and regulators) is a more effective way to ensure the quality of auditing. In fact, these people are more likely to have more information about the appropriateness of the audit (Abdia, 2019).

Extensive research in the field of auditing lacks sufficient evidence on the relationship between the presence of female executives on the audit committee and audit costs (Aldman et al., 2018; Gull et al., 2018). Lai et al. (2017) found that the positive effect of female managers on audit fees is high compared to another indicator of audit quality determination, namely private audit firms in a particular industry. Although they have used industry-specific auditing firms to compare the results of auditing fees, this approach is ineffective.

Abdia (2019) did not find a relationship between managers of specialized companies and managers' evaluation of audit costs. In contrast, Eatonen et al. (2010) did not find a negative relationship between the number of female executives on the audit committee and audit costs.

That is, the evidence lacks sufficient integrity.

Because no study has used the willingness to meet and exceed the zero profit benchmark as an audit criterion, there is no consensus on the effectiveness of female managers' oversight of audit committees. Thus, we seek to examine the impact of gender diversity among managers and members of the audit committee on audit costs.

Theoretical framework and research background

Women are likely to be more sensitive to moral issues (Zalata et al., 2018). They attach more importance to distinct socialization (Serinditi et al., 2011). Empirically, Bernardi, Bosco, and Columbus (2009) found that male executives had a positive relationship with company ethics. Similarly, Bernardi and Arnold (1997) believe that female managers have more moral development than male managers. According to them, female managers are not expected to manipulate financial statements for personal gain (Zalata et al., 2018).

It is unlikely that female executives will be present in a network of male members only. Therefore, their independence increases (Zalata et al., 2018). Thus, female managers are in a better position to question the decisions of other managers (Lai et al., 2017). Women are less likely to have false self-esteem and are more likely to take risks (Garcia Blandon, 2019). In this situation, the level of supervision is expected to increase (Lai et al., 2017). Empirical studies show that female executives in audit committees are more likely to edit audit statements (Pochetta Martinez, 2016), Reduce profit management measures (Zalata et al., 2018), and receive higher audit remuneration. (Aldman et al., 2018).

On the other hand, according to social identity theory, managers try to communicate with other managers in their own social realm. Thus, the presence of distinct members has a negative effect on group communication. Because female managers create diversity, their inclusion on the audit committee will lead to more conflict and less communication (Eatonen et al., 2010).

Eatonen et al. (2010) found that there is a negative relationship between the number of women on the audit committee and audit fees. In addition, Sun et al. (2011) found that the relationship between female executives on the audit committee and accrual accounts is not prudent.

Representation theory is not enough to describe the exact relationship between managers and their organizational effects (Gull, 2018). The proposed theoretical framework of Hillman and Dezel (2003) emphasizes both the theory of resource representation and dependence while examining the effectiveness of managers. According to this theory, the effectiveness of male and female financial professionals in audit committees depends on their type of financial expertise. Accounting professionals are one of the most important elements in monitoring financial statements. This is because financial statements have a complex accounting nature. Thus, individuals with accounting and auditing knowledge are in a better position to question managers and auditors (Dalival et al., 2010) reviewing management responses to auditors' proposed audit corrections (De Fund et al., 2005). Similarly, Krishnan and Viswanathan (2008) believe that the competence of accounting professionals allows them to evaluate guarantee laws and legal cases. In this way, they are able to properly assess the conditions of judgment, and improve the quality of auditing (De Fond et al., 2005). It is also thought that accounting professionals have more responsibility for overseeing financial statements. This is because they have more accounting knowledge and their credibility will be further damaged if the quality of the reports is poor. Thus, they are motivated to increase their oversight of financial statements (Kim et al., 2017). Lee

and Park (2018) believe that the presence of accounting professionals in committees limits the hand of managers to manipulate the field of management discussion and analysis of financial statements.

Several studies have provided evidence that better oversight of financial reporting is provided by accounting professionals on the audit committee.

Krishnan and Viswanathan (2008) found that accounting professionals on the committee have a positive relationship with accounting conservatism. Similarly, Dalival et al. (2010) believe that accounting expertise enhances the quality of liabilities. De Fund et al. (2005) found evidence that accounting professionals in audit committees are associated with a positive market response.

Cohen and Wright (2014) and Kim et al. (2017) also make it possible to have the positive relationship between The presence of accounting professionals and auditing fees.

Research hypotheses

Hypothesis 1: Gender diversity among board of directors has a significant effect on audit costs.

Hypothesis 2: Gender diversity among audit committee members has a significant effect on audit costs.

Methodology

The purpose of this study is practical and knowledge of its results can influence the decisions of different groups using financial information. The research method is descriptive and for this purpose regression analysis is used to examine the research topic.

The regression method is of the combined multivariate type due to the presence of company-year observations and due to the presence of different variables.

The research is retrospective and post-event. Due to conducting research in companies listed on the Tehran Stock Exchange, citation able information is provided through the sites and information software of the Tehran Stock Exchange. To test the research hypotheses, regression analysis with combined data and EViews 10 software was used. For this purpose, the necessary information was collected from companies active in the Tehran Stock Exchange, during the years 1392 to 1398, based on the following specific restrictions:

- The end of the companies' financial year should be the end of March;
- Have been accepted on the Tehran Stock Exchange before 1392;
- Financial information of companies is available for the research period;
- The fiscal year has not changed during the research period

Table 1. Sampling method

Description	Number of companies	Year / Company
Total number of companies	601	4207
Is deducted:	(71)	(355)
Investment companies, insurance, banks, financial institutions		
Subtract:	(131)	(917)
Companies whose fiscal year does not end in March		
Subtract:	(15)	(105)
Companies whose data are not available or whose data is incomplete		
Subtract:	(109)	(763)
Absence during the research period		
Subtract:	(124)	(868)
Trading interval of more than 6 months		
Number of final observations of this research (year / company)	151	1057

Research model

$$AuFee_{it} = \beta_0 + \beta_1 FameBr_{it} + \beta_2 FameAcc_{it} + \beta_3 Acsiz_{it} + \beta_4 Acind_{it} + \beta_5 Brind_{it} + \beta_6 Size_{it} + \beta_7 Subsildary_{it} + \beta_8 ROA_{it} + \beta_9 Debt_{it} + \beta_{10} SaleGrow_{it} + \beta_{11} MB_{it} + \beta_{12} Ret_{it} + \varepsilon$$

How to calculate the research variables is as follows:

Table 2. How to calculate research variables (Abbasi, 2020)

Definition	Variable role	symbol	Variable
Logarithm of total audit costs	Dependent	AuFee	Audit fee
If at least one woman is a member of the board, it is 1, otherwise it is zero.	Independent	FameBr	Gender diversity of the board
If at least one woman is a member of the audit committee, it is 1, otherwise it is zero.	Independent	FameAcc	Gender diversity of the Audit Committee
Number of members of the audit committee	control	Acsize	Size of the audit committee
Proportion of independent members in the audit committee	control	Acind	Independence of the Audit Committee
Percentage of number of independent members on the board	control	Brind	Independence of the board
The logarithm of all assets	control	Size	size of the company
Ratio of accounts receivable to total assets	control	Subsildinary	Accounts Receivable
Ratio of net profit to total assets	control	ROA	Profitability
Ratio of total debt to total assets	control	Debt	Lever ratio
Sales this year minus last year	control	SaleGrow	Sales growth
The ratio of market value to the book value of stocks	control	MB	Value ratio
Annual stock market price growth	control	Ret	Annual market price returns

Research findings

Descriptive statistics of data

The general characteristics of the quantitative research variables are shown in Table 2. In 1057 observations of the study, the average and median debt costs and market risk obtained are equal to 0.089, 0.086, 24.73 and 18.04, respectively, which indicates a slight skewness of this variable. In general, the average debt cost and market risk indicate good performance against debt costs and high market risk.

The highest variables of gender diversity in the audit committee are gender diversity in the board of directors and gender diversity in the position of financial manager 1, which indicates that in some companies, all members of the audit committee and the board of directors are female members. The minimum value for the variables of independence of the audit committee and independence of the board of directors is equal to zero, which indicates that the female members are not present.

Table 3. The data description

Variable	Average	median	Maximum	Minimum	Standard deviation	Observation column
Audit fee	2.729	2.787	3.040	1.897	0.235	1057
Gender diversity of the board	0.269	0	1	0	0.399	1057
Gender diversity of the Audit Committee	0.014	0	1	0	0.002	1057
Size of the audit committee	3.039	3	5	3	0.279	1057
Independence of the Audit Committee	0.658	0.666	1	0.333	0.271	1057
Independence of the board	0.530	0.4	1	0	0.191	1057
size of the company	6.117	5.977	4.371	0.578	1.208	1057
Accounts Receivable	0.683	0.035	0.225	0.010	0.719	1057
Profitability	0.202	0.226	0.771	0.529-	0.193	1057
Lever ratio	0.499	0.414	0.731	0.003	0.257	1057
Sales growth	1539	1509	122000	148000-	8735	1057
Value ratio	2.071	1.6	7.35	0.0005	2.312	1057
Annual market price returns	39.6	18.809	68.995	70.201-	7.635	1057

The mean, as one of the central parameters, represents the center of gravity of the society and in other words, it indicates that if the average is placed instead of all the observations of the society, there will be no change in the total data of the society. The average value of the audit fee is equal to (2.729), which indicates that most of the data is focused around this point. Standard deviation is also a number that indicates how the data around the average amount of the same data is scattered.

Inferential statistics of data

Reliability (static) of research variables

To evaluate the reliability of the research variables, Levin, Lin and Chou tests were performed (Table 4).

In addition, the Cao test was used to examine the co-accumulation, the result of which is listed in Table 5. According to the results of Levin, Lin Woochoo test, since the probability value of the statistic for all variables is less than 0.05. Therefore, it can be said that the studied variables during the research period are at a stable level and the use of these variables in the model does not create a false regression. Since the probability level obtained in Table 3 is less than 0.05. The null hypothesis of this test is confirmed, meaning that the linear combination of variables is also cumulative and does not cause false regression.

Table 4. Reliability of research variables

Variables	Test statistics LLC	p- value	Conclusion
Audit fee	46.544-	0.000	stationary
Gender diversity of the board	50.492-	0.000	stationary
Gender Diversity of the Audit Committee	3.865-	0.000	stationary
Size of the audit committee	11.525-	0.000	stationary
Independence of the Audit Committee	20.636-	0.000	stationary
Independence of the board	8.387-	0.000	stationary
Company size	59.992-	0.000	stationary
Accounts receivable	12.403-	0.000	stationary
Profitability	8.654-	0.000	stationary
Lever ratio	30.814-	0.000	stationary
Sales growth	12.365-	0.000	stationary
value ratio	24.652-	0.000	stationary
Annual market price returns	17.985-	0.000	stationary

Another step of the data panel process before the final test of research hypotheses is to examine the heterogeneity of variances and autocorrelation of the designed models. In this research, the White test is used to check for the presence or absence of heterogeneity.

Table 5. Variance heterogeneity test

Model	White test		Inequality of variance
	Possibility	Possibility	
The first model	10.256	0.000	exist

The results of the models show that the models have the problem of variance inequality. For this purpose, standard deviation adapted to inequality has been used in estimating the model. When combined data is used to estimate and test a hypothesis. In any case, an F-Leimer (Chavo) test is required to determine the type of estimation method. If at 95% confidence level, the probability of F statistic is greater than 5%, the null hypothesis is not rejected. In this case, we use the pooled data model to fit the data. But if the null hypothesis is rejected using Housman test, We test the fixed effects model against the random effects model and select the superior model to estimate the model.

Table 6. F-Leimer and Hausmann F test results

Model	Limer F test (Chao)		Hausman test	
	Statistics	Possibility	Statistics	Possibility
First Model	9.906	0.000	69.897	0.000

In Table (6), considering that the values of F-Limer (Chao) test for research hypotheses are less than 5%; so the method used will be the panel. Also because the results of the Hassman test are five percent; therefore, we use the random effects pattern.

Test results of research hypotheses

Discussion, conclusions and suggestions

Hypothesis 1: Gender diversity among board members has a significant effect on audit costs.

Hypothesis 2: Gender diversity among audit committee members has a significant effect on audit costs.

To investigate the effect of gender diversity between board members and members of the audit committee on the cost of auditing Model 1, the results are presented in Table 7. Model 1 was estimated to examine the effect of gender

diversity among board members and members of the audit committee on audit costs. The results are presented in Table 7.

Table 7. Model 1 test results

Variable	Dependent variable: audit cost				
	Coefficient	standard error	Statistics t	Possibility	Alignment test
Gender diversity of the board	0.007936-	0.003409	2.328183-	0.0201	1.006715
Gender diversity of the Audit Committee	0.028165	0.017667	1.594187	0.1113	1.012314
Size of the audit committee	0.806569	0.341885	2.359184	0.0185	1.020746
Independence of the Audit Committee	0.036224	0.031681	1.143401	0.2532	1.010778
Independence of the board	0.017439	0.120940	0.144196	0.8854	1.009811
size of the company	0.049086	0.038069	1.289382	0.1976	1.031776
Accounts Receivable	0.012874	0.017232	0.747082	0.4552	1.014710
Profitability	-0.021962	0.010113	-2.171679	0.0302	1.133820
Lever ratio	0.022074	0.036773	0.600283	0.5485	1.006741
Sales growth	0.00004	0.0001	0.362270	0.7172	1.134062
Value ratio	0.000600	0.007131	0.084142	0.9330	1.070121
Annual market price returns	0.000157	0.000106	1.485588	0.1378	1.030407
Constant coefficient	4.118709	1.043582	3.946704	0.0001	-
Timeout	0.880859	0.023364	37.70111	0.0000	1.072469
Determination coefficient	0.666406				
Adjusted coefficient of determination	0.661410				
Camera Statistics - Watson	1.761242				
Statistics F	133.3819				
Statistical probability F	0.000				

According to Table (7), it can be seen that the gender diversity of the board of directors is significant at the level of five percent, and is a sign of a negative coefficient that indicates the inverse effect of gender diversity among board managers on audit costs.

Therefore, the null hypothesis is rejected. Also, the gender diversity of the audit committee is not significant at the level of five percent. Therefore, the null hypothesis is confirmed. Gender diversity among the members of the audit committee does not have a significant effect on the audit cost. The adjusted coefficient of determination in this model is 66%, which means that 66% of the changes in the dependent variable (audit cost) can be explained by independent variables. In the first model, according to Watson camera statistics, there is no correlation between consecutive wastes.

The F statistic is also significant at the level of one percent. The significance of F statistic indicates the overall significance of the research model.

Discussion and Conclusion

The efforts of corporate governance legislators to increase gender diversity in companies indicate the importance of thoroughly examining whether the presence of female executives on audit committees and boards reduces costs. However, the previous literature on this aspect is not convincing because it has failed to assess the quality of auditing by experts. Abdia (2019) argues that it is important to pay attention to the views of experts on the quality of the audit, because they have more information about the audit and therefore provide better judgment about the quality of the audit. The results of the present study have shown that the presence of women on the board can reduce costs, albeit slightly, but it should be noted that reducing costs for stakeholders can be associated with the company of non-specialist auditors or poor quality rating. Used to save.

Concerning that women are a part of every society, so paying attention to the issue of gender can be considered as one of the important social and cultural characteristics and a criterion for separating men and women in society.

In today's society, we see more and more women in various positions, usually in various professions such as: accounting, auditing, and this issue highlights their role and presence in society and the economy, especially that the new economy requires women's participation in the labor market., considered it necessary to empower women and remove obstacles in their way, as well as to improve the economic, social and political situation of the society in their active presence.

In recent years, the world has undergone many changes, one of which is the advancement of the role of women in corporate auditing. Accordingly, the presence of women in management positions and the pillars of corporate governance is more observed.

The presence of women in the board of directors of companies and other management elements of the company, increases the ability of members and knowledge for the company. It is also expected that gender diversity in the composition of corporate management, will lead to improve communication and better interaction of members in line with company goals and the effectiveness of tasks.

Our results show that policymakers should not rely on the benefits of considering only gender diversity in audit committees for stakeholders. Also, our research is useful for managers who try to improve the cost of auditing along with the audit quality of companies, so we know that companies will not experience an increase in audit quality only by increasing the cost if only in the presence of female managers in the audit committee was satisfied. Finally, it is recommended that female accounting professionals be present on audit committees.

Our results show that policymakers should not rely on the benefits of considering only gender diversity in audit committees for stakeholders.

Also, our research is useful for managers who are trying to improve the cost of auditing along with the quality of auditing companies. As we know, companies will not experience an increase in audit quality just by increasing costs If only the presence of female managers in the audit committee is sufficient.

Finally, it is recommended that female accounting professionals be present on audit committees. Studies have shown that female accounting professionals positively influence audit quality, our research suggests the accounting profession to implement policies to attract more female members.

This includes conducting seminars / conferences in which female accountants are invited, sponsorship opportunities for women are raised, and efforts are made to reduce the gender pay gap for female accountants, which may it inspires and motivates women to join the accounting profession.

Our research findings should be considered with caution. Despite the use of multiple methods to reduce any audit costs, we acknowledge that endogeneity may not have been fully explored.

Therefore, our findings may not be applicable to other companies with different backgrounds.

Conflict of interest

The authors declare no conflict of interest

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