Effect of Corporate Governance on Sustainability Disclosures: Evidence from Turkey

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Abstract: This study aims to examine the relationship between the corporate governance structure and sustainability disclosure in Turkish business. To measure the impact of the board of directors on sustainability disclosure, companies on the Istanbul Stock Exchange that prepared sustainability reports per the Global Reporting Initiative (GRI) were selected as the working sample. In this study, 68 fiscal year data sets of 17 businesses that published regular sustainability reports during 2013–2016 were used. All were audited by the GRI. During the analysis, it was observed that the presence of influential community board members and the profitability of the enterprises are factors that bear positive effects on sustainability disclosures. Board size, the presence of independent board members, and the existence of corporate social responsibility committees were negative factors that, in fact, reduced sustainability disclosures of the companies. To increase sustainability disclosures, this study suggests that boards of directors should consist of influential community leaders.

Keywords: Borsa İstanbul, corporate governance, corporate social responsibility, sustainability disclosure.

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INTRODUCTION

The term “sustainable development” was coined in 1987 by the World Commission on the Environment and Development. This notion aims to generate a society which has economic, social, and environmental goals, and can establish an appropriate balance between them. Economic, environmental, and social dimensions are three dimensions of sustainability; and corporate governance takes place in the heart of the corporate strategies of the enterprises and helps them in managing the risks and opportunities of daily activities (Kocmanová et al., 2011).

Corporate sustainability disclosure is influenced by corporate governance; and the sustainability reports are managed by corporate governance of the enterprise (Adnan et al., 2018). Especially, the board of directors plays an important role in increasing corporate sustainability performance and has a clear effect on the adoption...
of ethical operations in all organizational structure of the enterprise (Janggu et al., 2014). Currently, there are many international initiatives involved in disclosing and reporting sustainability performance. One of the most important of these initiatives is the Global Reporting Initiative (GRI). This initiative has been a globally accepted framework of standards for the measurement of the enterprises’ sustainability reporting (Kurniawan 2018; Tschopp & Nastanski 2014). Therefore, in accordance with global trends, we can observe development of sustainability disclosure in Turkey. Istanbul Stock Exchange (BIST) supports this trend and prepares sustainability indexes for the enterprises. Despite extensive research on sustainability, there are relatively few studies investigating the relationship between the board structure of the enterprise and sustainability disclosure (Janggu et al., 2014). This study focuses on investigation of the relationship between the corporate governance and sustainability disclosure (Anazonwu et al., 2018).

In this study, the relationship between the board of directors, one of the important indicators of the corporate governance, and sustainability disclosures, prepared in accordance with the GRI reporting standards was examined. As a result, it is aimed to determine the relationship between these two terms, importance of which is increasing in local and global terms.

According to the theories of stakeholders and legitimacy, an enterprise is part of a large social system and in this system society and the enterprise are affecting each other. From this perspective, stakeholder’s theory suggests that higher quantity of participators in management of the enterprise increases the legitimacy of organization and this creates framework linking between the corporate governance and sustainability disclosures (Martin et al., 2018; Michelon & Parbonetti, 2012). According to the economy theory, the board of directors of the enterprise is an important part of the corporate governance of that enterprise. This part has very important impact on the reporting procedures and their executions of the enterprise (Ong & Djajadikerta, 2017). Individual and class priorities of the members in the board of directors have an influence on disclosure’s quality.

Commitment to corporate management applications together with diversity in the board of directors will solve this problem and help decrease it to the lowest possible level. Therefore, a strong relationship between the sustainability disclosure and governance structure of the enterprises can be expected.

Corporate governance plays an important role in financial reporting. Michelon and Pabonetti (2012) argue that good corporate governance and sustainable reporting are complementary mechanisms that improve the relationship between the stakeholders and enterprises. They particularly assert that sustainable reporting is a function of the board of directors (Cartwright & Craig, 2006; Ceran, 2017).

There are not many studies examining the relationship between the sustainability and corporate governance. Many studies have examined these two issues separately. One of the main reasons for this is that the concept of corporate sustainability is difficult to measure (Ceran, 2017: p. 63).

Galbreath et al. (2008) examined the impact of corporate governance on three dimensions of sustainability in oil and gas enterprises in Australia and Canada. They have investigated whether variables such as the size of the board of directors, CEO duality, the presence of women and executives in the board of directors, have a positive or negative impact on sustainability disclosures. As a result of the study, it was determined that enterprises with a larger board of directors are more interested in sustainability issues. The impact of other factors on sustainability was found to be insignificant.

Michelon and Parbonetti (2012) examined the impact of corporate governance on sustainable reporting in businesses included in the Dow Jones sustainability index. The corporate governance structures of the enterprises were measured by the variables of the number of independent managers on the board of directors, the presence of community influential members, the presence of the corporate social responsibility committee, and the CEO duality. In the study, a positive relationship was determined between the environmental and
strategic sustainable reporting and community influential members. No significant relationship was found between the sustainability and the structure of the board of directors and CEO duality variables. A weak positive relationship was identified between the corporate social responsibility committee and sustainable reporting.

Ong and Djajadikerta (2017) examined the impact of corporate governance structures of enterprises on sustainable reporting in Australia. Corporate governance factors that affect sustainable reporting were identified as independent executives, multiple directorships of board members in several businesses, female executives in the board of directors, CEO duality, and the existence of a sustainability committee. As a result of the study, it was found that there is a positive relationship among independent managers, multiple directorships of board members in several businesses, existence of female directors in board of directors, and sustainable reporting.

**METHODS**

The data used in the current study were obtained after the analysis of the financial statements and sustainability reports, prepared according to the GRI standards, of enterprises publicly traded in BIST. As sustainability reports are prepared on a voluntary basis, enterprises publish their reports at their own convenience and varying intervals. Thus, the reports issued until Aug. 11, 2017 have been taken into consideration.

The data used in the study were obtained from the GRI reports pertaining to 17 enterprises traded in the BIST that have published their reports until the above quoted date and the mentioned reports covered the years 2013–2016. A sum of 68 enterprise/year datasets was used. Balanced panel data analysis was used as each section of the data used in the study has an equal interval of time-related observed scores. We have formulated Equation 1 for the measurement of the impact of corporate governance on corporate sustainability:

\[
Csd_{it} = \beta_0 + \beta_1\text{Ceo}_{it} + \beta_2\text{Bsize}_{it} + \beta_3\text{Src}_{it} + \beta_4\text{Ci}_{it} + \beta_5\text{Ind}_{it} + \beta_6\text{Roai}_{it} + \beta_7\text{Size}_{it} + u_{it}
\]

This model will be analyzed by the ordinary least squares method. Equation 1 constitutes the research model of the study. In this equation, the factors that affect corporate sustainability applications are based on relevant literature. The variables used in the equation might be explained as follows:

- **Csd**: indicates the corporate sustainability disclosure score of an enterprise. It is the dependent variable of the model. This variable is based on the data obtained from the GRI sustainability reports. It is a quantitative expression of the ratio of the possible maximum score to the actual score of the enterprise in the GRI reports.
- **Ceo**: this variable can be used to define the centralization of authority. In case the general manager is also the chairman of the board the variable is taken as 1, otherwise 0. This is a proxy variable.
- **Bsize**: this variable shows the total number of members in the board of directors.
- **Src**: this is a proxy variable which indicates the existence of the corporate social responsibility committee at the enterprise. This variable is equal to 1 if there is a corporate social responsibility committee; otherwise it is equal to 0.
- **Ci**: this variable is related to community influential members (leaders). If the board members include politicians, academics, military, or civil society members this dummy variable is taken as 1, otherwise as 0. The resumes of the board members were examined for deciding on this variable.
- **Ind**: this variable shows the number of independent members in the board of directors.
- **Size**: this variable is the control variable of the model. This variable represents the size of the enterprises and it is based on the natural logarithm of the sales amount of the each enterprise.
Roa: another control variable of the model. It indicates the return on assets value. It is calculated by dividing of the net profit of the enterprise to the total assets of the enterprise.

Moreover, the indices on the right of the variables, i and t, indicate sections of time and observation.

RESULTS AND DISCUSSION

Table 1 presents the descriptive statistics of the sample before analysis. According to the descriptive statistics in Table 1 (Csd), Corporate Sustainability Disclosure of the enterprises ranges between the lowest 24 and the highest 94 points. The mean value of the enterprises in the study is 61 points. Mean value of the Ceo Duality (Ceo) was determined as 0.82. This indicates that the general manager is also the chairman of the board for most of the enterprises in the sample.

The total number of the members in the board of directors (Bsize) ranges between 6 and 15, and the mean value for our sample is 10.22. This might be interpreted as the average number of the members in the board of directors is 10. The mean value of the Src variable which represents the existence of a corporate social responsibility committee at the enterprise is 40%. The figure indicates that only 40% of the enterprises from our sample have corporate social responsibility committee. As shown in Table 1, the number of community influential members (leaders) ranges from 2 to 9, with a mean value of 5.44. The number of independent members in the board of directors (Ind) ranges from 0 to 5 with a mean value of 2.50. As shown in Table 1, the mean values of the (Roa) net profit and the (Size) size of the enterprises are 0.048 and 22.40, respectively.

The validity of the assumptions related to panel data analysis needs to be tested before performing a panel data analysis. Most importantly the data set should be free of heteroskedasticity, autocorrelation, and interdependent variables. In order to test the validity of these assumptions, Greene’s heteroskedasticity and Wooldridge’s autocorrelation tests will be used in addition to the correlation table.

Table 2 shows the results of the Wooldridge’s autocorrelation test and Greene’s heteroskedasticity test. As the probability value of the Greene’s heteroskedasticity test is greater than 0.05 further procedures might be carried out because there is no problem of heteroskedasticity in the datasets.

However, the probability value of the Wooldridge’s autocorrelation test is less than 0.05 which indicates the presence of an autocorrelation problem in the datasets which will be used. Table 3 shows the correlation results which will be used to determine whether an intercorrelation problem exists or not.
In the correlation table (Table 3), because the maximum coefficient value is not greater than 0.62 it is considered that there is no correlation problem between variables to be used in this study. Considering the evaluated results of Tables 2 and 3 it is concluded that there is no correlation and variance problem between the data sets for the model of Equation 1, but there is a presence of autocorrelation issue. After checking the stability conditions for the model and selecting the suitable method it is possible to determine the analysis type for the panel data analysis.

Three different methods are used for the simple panel data analysis. These methods are pooled data analysis, random effects analysis, and fixed effect analysis. To determine which one of these three analyses will be chosen, F-test, Breusch–Pagan LM test, and Hausman test were applied.

With the F-test, it was examined whether pooled data analysis or fixed effects methods would be effectual. Moreover, the Breusch–Pagan LM test was used in order to determine whether pooled data analysis or random effects methods should be used in the research. The Hausman test was used for determining whether fixed effects or random effects estimates should be used in the research. The F-test probability values given in Table 4 were less than 0.10 which means that the pooled data set technique is not suitable as for the

<table>
<thead>
<tr>
<th>Table 2 Autocorrelation and Heteroskedasticity Test Results</th>
</tr>
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<tbody>
<tr>
<td>Hypothesis</td>
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<tr>
<td>H₀: There is no autocorrelation</td>
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<tr>
<td>H₁: Autocorrelation is present</td>
</tr>
<tr>
<td>H₀: Co-variance is present</td>
</tr>
<tr>
<td>H₁: There is no co-variance</td>
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<th>Table 3 Correlation Table</th>
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<tr>
<td>Csd</td>
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<tr>
<td>Csd</td>
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<td>Src</td>
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<td>Cl</td>
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<th>Table 4 Selection of Analysis Method for the Panel Data Analysis</th>
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<tr>
<td>Hypothesis</td>
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<tr>
<td>H₀: βᵢ = β</td>
</tr>
<tr>
<td>H₁: βᵢ ≠ β</td>
</tr>
<tr>
<td>H₀: σᵤ² = 0</td>
</tr>
<tr>
<td>H₁: σᵤ² ≠ 0</td>
</tr>
<tr>
<td>H₀: E(uit/xit) = 0</td>
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<tr>
<td>H₀: E(uit/xit) &lt; 0</td>
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In the correlation table (Table 3), because the maximum coefficient value is not greater than 0.62 it is considered that there is no correlation problem between variables to be used in this study. Considering the evaluated results of Tables 2 and 3 it is concluded that there is no correlation and variance problem between the data sets for the model of Equation 1, but there is a presence of autocorrelation issue. After checking the stability conditions for the model and selecting the suitable method it is possible to determine the analysis type for the panel data analysis.

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fixed effects method. The probability value of the Breusch–Pagan LM test was found to be greater than 0.10. Therefore, when compared to the random effects method, the pooled data set technique was not found to be suitable. From the results of these two tests it was understood that the pooled data set is not the suitable analysis technique. The probability value of the Hausman test, which was performed in order to determine whether fixed effects or random effects would give consistent estimators, was lower than 0.10. Therefore, it is assumed that the fixed effects estimator would produce more consistent estimators for the given model and data set. The fixed effect estimators’ method for the model and data sets assumed as a more suitable analysis method.

Briefly, the results given in Tables 2–4 reveal that it is necessary to use fixed effects estimator and White cross-sectional covariance method for analyzing the model in Equation 1. The results of panel data analysis obtained with the selected method are shown in Table 5.

When the analysis results given in Table 5 are considered it is clear that $F$-statistic and probability value, which shows the level of the significance of the model in general, indicate that the model is significant at the 1% statistical significance level in general. The adjusted $R^2$ value indicates that the model is generally well described. Considering the statistical significance levels of the variables in the model it was determined that, $\text{Src}$ and $\text{Ind}$ variables were statistically significant at the 1% level, $\text{Roa}$, and $\text{Bsize}$ variables were statistically significant at the 5% level, and $\text{Ci}$ was statistically significant at the 10% level. The other variables in the model such as $\text{Ceo}$ and $\text{Size}$ were not statistically significant.

$\text{Src}$, $\text{Bsize}$, and $\text{Ind}$ variables, which were among the significant variables, were in an inverse relationship with the $\text{Csd}$ dependent variable. Therefore, any changes, such as increasing value of the $\text{Src}$, $\text{Yon}$, and $\text{Ind}$ variables will cause a decrease in the $\text{Csd}$ variable. $\text{Roa}$ and $\text{Ci}$ variables have a straight relationship with the $\text{Csd}$ dependent variable. Therefore, any changes, such as increasing value of the variables $\text{Roa}$ and $\text{Ci}$ will have a positive effect on the $\text{Csd}$ variable (value of the $\text{Csd}$ variable will also be increased). The $\text{Roa}$ variable has the highest effect on the dependent variable. The change of the $\text{Roa}$ variable per unit will have an effect of 195 units on the dependent variable. The $\text{Ci}$ variable has the lowest effect on the dependent variable. The change of the $\text{Ci}$ variable per unit will have an effect of 1.02 units on the dependent variable. Any changes per unit of the other statistically significant variables, such as $\text{Src}$, $\text{Bsize}$, and $\text{Ind}$ variables will cause an effect of 7.26; 1.792; and 6.59 units on the dependent variable, respectively.

According to research by Ray and Berndtson, Turkey Enterprise, and the Turkish Capital Magazine conducted in year 2003, the average number of members in the board was 12 for “the best implementations” around the world. According to the findings of the current study, the size of the board of directors for Turkish

<table>
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<tr>
<th>Variables</th>
<th>Coefficient</th>
<th>Standard Error</th>
<th>Probability Value</th>
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</thead>
<tbody>
<tr>
<td>$\text{Ceo}$</td>
<td>1.719679</td>
<td>7.152860</td>
<td>0.8111</td>
</tr>
<tr>
<td>$\text{Bsize}$</td>
<td>$-1.792385$</td>
<td>0.877050</td>
<td>0.0470**</td>
</tr>
<tr>
<td>$\text{Csr}$</td>
<td>$-7.261641$</td>
<td>2.186922</td>
<td>0.0018*</td>
</tr>
<tr>
<td>$\text{Ind}$</td>
<td>$-6.591840$</td>
<td>1.151086</td>
<td>0.0001*</td>
</tr>
<tr>
<td>$\text{Ci}$</td>
<td>1.020616</td>
<td>0.604664</td>
<td>0.0985***</td>
</tr>
<tr>
<td>$\text{Roa}$</td>
<td>195.3872</td>
<td>76.10407</td>
<td>0.0137**</td>
</tr>
<tr>
<td>$\text{Size}$</td>
<td>$-1.441096$</td>
<td>1.726371</td>
<td>0.4084</td>
</tr>
<tr>
<td>$\text{C}$</td>
<td>115.4782</td>
<td>31.66888</td>
<td>0.0001*</td>
</tr>
<tr>
<td>Section G. 17</td>
<td>$R^2$</td>
<td>Adjusted $R^2$</td>
<td>F-statist. 7.371</td>
</tr>
<tr>
<td>Period. Count. 4</td>
<td>0.793</td>
<td>0.686</td>
<td>Probability 0.0001</td>
</tr>
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Enterprises is significantly lower than the size of the board of directors of “best implementations.” Despite the initial expectations of the researchers that a positive relationship was likely to exist between the sustainability and size of the board of directors it was revealed as a result of the analysis that a negative relationship exists between the size of board of directors and sustainability. Similar results were encountered in the reviewed literature. It is reported by Yermack (1996) and Eisenberg et al. (1998) that larger sizes of board of directors weaken the control process of the enterprise. According to agency theory, asymmetric information flow diminishes the flexibility and fast response capacity of the board. Moreover, due to the lack of adequate control mechanisms held by the board of directors sustainability reports shared with stakeholders would be of lower quality and contain misleading or incomplete information (Sánchez et al., 2011). Kathy Rao et al. (2012) and Andres and Valledado (2008) also suggest that greater sizes of board of directors would lead to conflicts and slow decision making. These problems become more evident, when the number of members in the board of directors increases. These findings indicate that greater sizes of board of directors have a negative impact on sustainability disclosure (Kılıç et al., 2015).

As a result of this study, a negative relationship was found between the independent managers and sustainability disclosure. Many researchers suggest that the presence of the independent members in the board of the directors facilitates the protection of stakeholder interests and contributes to objective monitoring of the operational performance whereas many others express their doubts that independent board members do not act objectively. According to Mangel and Singh (1993) an independent manager in one enterprise is very likely to work at a different position in another enterprise. Therefore, this independent manager may sympathize with other members of the board that are responsible of operations, and this might prevent a disinterested evaluation of the issues at stake. According to Bettenhausen and Murrihghan (1985), Cormier and Magnan (2003), and Haniffa and Cooke (2005), managers who do not objectively approach social and environmental issues in one enterprise do not act objectively at the other enterprises, either (Elsakit & Worthington, 2014). Franks et al. (2001) determined in their research on UK enterprises that independent managers acted only as advisors. They did not carry out the guidance tasks they were supposed to do (with guidance tasks we mean an objective evaluation of the negative activities of the enterprise and re-orientation of the enterprise if necessary). It was determined that such a failure stemmed from the weak legal framework of the UK and hard obligations (Franks et al., 2001). In their study on Malaysian enterprises, Haniffa and Cooke (2005) have identified a negative relationship between the independent managers and sustainability disclosure. The reasons of such a relationship are twofold: either independent managers are not interested in social problems or they do not have adequate knowledge and information on the issues in question (Elsakit & Worthington, 2014).

Another implementation of corporate management that is supposed to influence sustainability in enterprises is the presence of a social responsibility committee. According to Ullman (1985) the presence of a person in charge of social responsibility issues and/or a social responsibility committee at an enterprise shows that the enterprise is interested in its stakeholders and willing to engage in active strategic interaction with them (Michelon & Parbonetti, 2012). Therefore, a positive relationship is expected between these two variables. However, as a result of analysis a negative relationship was observed.

A positive relationship was found between the community influential members (leaders) and the sustainability disclosure. According to Baron (1995) the presence of community influential members in the board of directors increases communication level with the stakeholders of the enterprise within business orientation activities. According to Kassini and Vafeas (2002), since community influential members are more concerned with the needs and interests of the society and the stakeholders; they are more sensitive to the problems of these groups. Therefore, these influential members adapt to the social values and enable the
enterprise to act within the framework of responsibility (Mallin & Michelon, 2011). The results of the study comply with the results of similar studies in the literature.

In the constructed model, the relationship between the control variables “size of the enterprise” and “return on assets ratio” and sustainable reporting was also measured. It was determined that the sales of the enterprise as demonstrative of the size of the enterprise had no significant relationship with sustainability reporting. However, a significant and positive relationship was identified between the return on assets ratio and sustainability disclosure. Accordingly, the interest of the enterprise on sustainability reporting increases in line with the increasing profitability of the enterprise. It might be deduced that increasing profitability enforces a corporate structure on the enterprise and sustainability reporting becomes more important. It might also be claimed that enterprises with high profitability rates prefer institutionalization in order to achieve and sustain the same success in future and pay special attention to a sustainable structure.

**CONCLUSION**

If the size of the board of directors for the Turkish enterprises increases, their sustainability disclosure decreases. This might stem from the fact that the increase in the size of the board of directors is only an increase in the number not in the quality of members on the board. Although the reviewed literature suggests that an effectively working board of directors is based on the inclusion of independent and experienced board members it was observed that most of the Turkish enterprises are family-owned businesses. For this reason, members of the board of directors are family members rather than experienced and independent members. Thus, it might be asserted that even if the size of the board of directors was increased, sustainability disclosures would still be negatively affected.

If the number of the independent managers for the Turkish enterprises increases their sustainability disclosure decreases. The reason for this may be the lack of adequate legal infrastructure, insufficient attention to the issues under consideration, and/or lack of experience. It must also be stated that a significant amount of the enterprises in Turkey is family businesses. It might be observed that the independent members on the board of directors generally have served as independent members in other family businesses during different periods. This might be interpreted as the independent managers are not quite independent. A negative relationship was found between the sustainability committee and the sustainability disclosure. It was observed that in those enterprises which have this committee, instead of sustainable reporting procedures, individual social responsibility projects such as outreach programs are preferred.

With this research study, for the first time in Turkey the board members were examined as community influential members (leaders). As a result of the analysis conducted in the scope of the study it was determined that the presence of community influential members in the board structure of the Turkish enterprises has a positive effect on sustainability disclosure and thus on the sustainability of the enterprise. Sustainability disclosure is a new subject worldwide. It is highly probable that sustainability reporting is adopted by all enterprises and prepared according to a single standard in future. It is expected that the current study serves as a starting point for further studies on the relationship between the corporate governance quality and sustainability disclosure with different variables and over different samples.

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