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Impact of Sustainability Reporting on Financial Performance

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Abstract: (1) Purpose: This study aimed to investigate the relationship between Sustainability Reporting (SR) and financial performance and put forward the effect of the SR on financial performance. (2) Methodology: In order to test our hypothesis that financial performance increases the likelihood of firms reporting sustainability, a regression model was built based on the data of firms included in the Borsa Istanbul Stock Market Sustainability Index. Independent variables included in the model are Return on Assets (ROA) and Return on Equity (ROE) values, which are considered as financial performance indicators. Application of sustainable report is a dependent variable of the model. (3) Results: Company size had a positive effect on sustainability activities, while profitability had no significant effect. Large firms were usually more willing to play a role in social and environmental issues and explain their strategies on these issues. (4) Conclusions: It is important for firms to implement sustainability initiatives inside the firms from a strategic point of view, not as a result of pressure from stakeholders, such as official institutions, non-governmental organizations, suppliers or consumers. (5) Implications: With the linear regression estimation performed, the causal relationship between sustainability and financial performance has quantitatively demonstrated the positive effect of sustainability on financial performance. The main purpose of the study is to reveal the importance of publishing a sustainability report for firms and raise their awareness, thus examining the long-term effects of publishing the report. It is suggested that future research may investigate possible differences of sustainability according to the development levels of markets and countries.

Keywords: Sustainability Reporting (SR); Sustainability index; Financial performance, ROA (Return on Assets); ROE (Return on Equity)

1. Introduction

The classic view that firm contributes to society only by making a profit is outdated today. It has been understood that pursuing short-term profits does not create real economic value and a clear competitive advantage, and that economic goals may also be related to social ties and non-economic goals. (Porter & Kramer, 2011)

The concept of a firm's sustainability encompasses all aspects of the firm's business environment, including the use of social, economic and natural resources. The SR helps firms determine their goals, measure their performance and manage changes to make their operations more sustainable. Sustainability report presents the positive or negative impacts of a firm on the environment, society and economy, embodies all kinds of issues that the firm may encounter and reveals their effects on the firm.

The SR can be considered as an important communication tool, which cares about all internal and external stakeholder groups and contributes to the continuity of a firm's performance and its economic, social and environmental evaluation. Both the financial issues of the firm and the explanations of its environmental and social practices have gained importance for the stakeholders (Siew et al., 2013).

According to Hák et al. (2007), the concept of financial sustainability is the result of a long history of development policies following the common understanding of institutions and businesses in development practices. What can be understood from the concept of financial sustainability is that the focus of corporate sustainability is effective management and the long-term viability and adequacy of funds, that is, sustainable business capacity.

There is no accepted definition of financial sustainability, which is often defined as the ability of a government to maintain its current spending, tax and other fiscal policies in the long run. This ability enables the government to maintain its power to run the country or to overcome problems in fulfilling its responsibilities or making the expenditures it has promised before.

The concept of financial sustainability is the result of a long history of development policies, which follow the common understanding of institutions and businesses in development practices (Hák et al., 2007). For the concept of financial sustainability, a firm focuses on its effective management and the long-term viability and adequacy of its funds, that is, sustainable business capacity.

Financial sustainability is a firm's ability to stand the test of time, in terms of profitability, efficiency and financial performance, as well as the management of its environmental and social assets, which consist of its capital (Giovannoni & Fabietti, 2014).

According to the Sustainability Accounting Standards Board (SASB), sustainability is “a firm’s activities that maintain or enhance its ability to create value in the long term”. The SASB stressed the importance of using the minimum criteria as 'key issues' and identifying issues, which may affect a firm's operating performance and financial condition in general, regardless of industry or region (SASB, 2018).

Hahn & Kühnen (2013) expressed that the transparency of firms increased, which was the benefits of the SR. In addition, Herzig & Schaltegger (2011) added the SR enabled firms to increase their revenues and reduce costs.

There are two types of costs in the SR, financial and non-financial. Creating and understanding sustainability reports requires new jobs. Therefore, it is stated that the short-term benefits of a firm’s SR do not cover the costs incurred. Therefore, most of the firms prefer not to report their sustainability in countries, where the SR is still not a legal requirement (Kolk, 2004).

If a firm’s costs related to sustainability activities exceed the financial benefits, negative effects on financial performance are observed. In this case, high sustainability performance of the firm may lead to the decline of its profits, firm’s value or competitive disadvantages, caused by increased spending (Telle, 2006; Friedman, 1970).

If the value, created by a firm within the SR framework, exceeds the opportunity cost, the firm contributes to sustainability and creates sustainable added value. Sustainable value refers to whether the value created by the firm exceeds the opportunity cost of using capital (Figge & Hahn, 2005). Positive sustainable added value indicates that the firm is successful in creating additional (extra) value compared to its peer, while maintaining the overall consumption of each resource used at the level of the previous period.

The SR of a firm aims to present its economic, environmental and social performance to stakeholders in a reliable and transparent manner. With the increasing awareness of businesses on sustainability, some non-governmental organizations, which guide businesses in the SR, have emerged. Global Reporting Initiative (GRI) is the SR framework most widely used by businesses around the world while preparing the reports (Nobanee & Ellili, 2016). The GRI aims to make economic, environmental and social performance reporting transparent and comparable to financial reporting by setting effective global reporting standards.

This study investigated the relationship between the SR and financial performance and revealed the effect of the SR on financial performance. In order to test our hypothesis that financial performance increases the probability of firms to make sustainability reports, a regression model was created based on the firms included in the Borsa İstanbul Stock Market Sustainability Index. The ROA and the ROE values, which were taken as financial performance indicators, constituted the independent variables of the model, and the SR application was the dependent variable in the model. The regression analysis result showed that significant differences were obtained between firms that did and did not report their sustainability.

2. Sustainability Index

A firm's main purpose is to increase the wealth of its stakeholders. A firm's stock price or market value is seen as the most objective way to rate a firm, and any non-financial purpose will make the firm less effective (Friedman, 1962).

Epstein (2008) emphasized that institutions should address various sustainability principles. Some of the principles detailed by Epstein (2008) include: Observing ethical standards, practices, and being fair and transparent in dealing with all stakeholders. Epstein also emphasizes the principle of governance, which includes the importance of transparency in communication, and states that governance and transparency are tightly linked to corporate responsibility and community participation in management. Another principle is linked to corporate responsibility in the sense of respecting stakeholders. In order to fulfill their responsibilities effectively, institutions should be prepared for changes that may occur in all areas, especially technology, and even exhibit proactive attitudes. Because those who cannot keep up with change and cannot use their resources effectively cannot survive.

Stakeholders of a firm want to obtain both non-financial and financial information on the firm, which has led to the importance of the SR. The SR includes non-financial information and financial reporting, in which the firm provides financial information. Although firms have reached their profitability targets in the short term, they also carry out their long-term activities by considering environmental and social factors. The SR aims to present the economic, environmental and social performance of a firm to its stakeholders in a reliable and transparent manner.

The SR is a reliable and accountable tool for internal and external stakeholders and motivates firms towards sustainable development. The most widely accepted definition of sustainability, which has emerged over time, is the combination of economic viability, social responsibility and environmental responsibility.

Borsa Istanbul (BIST) Sustainability and 25 indexes, including corporate stocks traded in Borsa Istanbul with high sustainability performance of firms, were created in order to increase the understanding, knowledge and practices on sustainability in Turkey, especially among Borsa Istanbul firms.

In order to be included in the Index, a firm should meet the following requirements:

- Overall sustainability rating is 50 or higher,
- Each main title grade is 40 or above,
- Grades of at least eight categories are 26 or above.

Sustainability indices are an important incentive tool in ensuring the adoption of sustainability reports. Firms wishing to enter sustainability indices must develop and disclose their information, which reflects accepted criteria for sustainability issues. This information usually appears in their sustainability reports. The BIST Sustainability Index aims to create indice for firms traded on Borsa Istanbul with the highest sustainability performance and to increase the sustainability practice of the firms. The Index has been calculated and published as prices and returns with the code XUSRD as of November 4, 2014.

3. Theories Related to the SR

Theories about the association between financial performance and the SR can be divided into three types, stakeholder theory, accountability theory and legitimacy theory.

Stakeholder theory emphasizes that firms have a responsibility not only to their shareholders but also to various stakeholder groups. (Karlsson & Bäckström, 2015). According to stakeholder theory, firms need to consider not only the specific wishes of their shareholders, but also the demands of a wide range of other stakeholders regarding sustainability performance.

Accountability theory is used to explain how government authority influences the behavior of a firm. (Bramwell & Lane, 2011). Legitimacy theory refers to the legitimation process in which an organization tries to avoid approval or sanction from groups in society (Kaplan & Ruland, 1991).

4. Literature Review

It is observed that studies examining the effect of sustainability activities and the SR on financial performance have started to increase in Turkey and other countries, especially in recent years. Current studies have determined that the three main dimensions of sustainability, namely the economic, social and environmental dimensions, are examined individually or as a whole, on the financial performance. In addition, the study results have determined three types of impacts of the SR on financial performance, namely, positive, negative and neutral impacts, based on accounting and market (stock market) data.

According to the literature review, studies investigating the relationship between sustainability performance and financial performance have obtained different results, including the positive (value creation) effects created by the SR for a firm's performance. Some studies examined the effect of sustainability performance on financial performance, with the ROA ratio generally measuring the financial performance (dependent variable). In addition, sustainability scores, calculated as the sustainability performance indicator, represented the independent variable, or whether the firms were included in the sustainability index or not was used as a binary variable. Other studies investigated the effect of sustainability performance on financial performance, with sustainability performance representing the dependent variable, and financial performance representing the independent variable. Sustainability performance was mostly measured by the binary variable, which indicated whether publishing a sustainability report or not was included in the index.

Friedman (1970) found in his study that there is a negative relationship between sustainability performance and financial performance. He stated that businesses have only one social responsibility and that is to deal with activities that can increase profits and to use resources in that direction.

McWilliams et al. (2006) proposed that the SR disclosure, including non-accounting information and the information on how a firm controlled its business risks, was a tool to create competitive advantages and improve its financial performance. They claimed that it served as an indicator. Therefore, they argued that higher SR scores meant lower business risks.

Mackey et al. (2007) argued that investors expect a company to increase its wealth without a sustainability policy and that sustainability policies should be developed by non-profit organizations.

Eccles et al. (2012) stated that sustainability activities and disclosure of a firm led to its superior performance.

The study of Vitezić et al. (2012) aimed to reveal the effect of financial performance on sustainability reports in 42 Croatian firms during the 2002-2010 period. A statistical analysis was conducted to test the hypothesis that financial performance increased the probability of firms to act socially and to disclose their Corporate Social Responsibility (CSR) reports. The study result showed that there was a positive relationship between financial performance and sustainability. In other words, large firms with better financial performance were aware of the importance of their social performance.

Barnett & Salomon (2012) proposed that successful financial performance (measured by the ROA and net incomes) depended on "how good firms leveraging their social responsibility efforts" and "how good firms benefitting from their social responsibility efforts".

Ameer & Othman (2012) investigated the relationship between sustainability practices and financial performance and examined 100 top sustainable companies selected from developed and developing countries. According to the analysis results; It has been revealed that companies that attach importance to sustainability practices exhibit a higher level of financial performance according to their return on assets, profit before tax and cash flow indicators.

Marsat & Williams (2014) stated that the investment in the SR disclosure increased costs and caused economic consequences for a firm, resulting in lower market values for the firm.

Eccles et al. (2012) and Kaspereit & Lopatta (2016) supported the theory that the SR created value for firms.

Ohaka & Obı (2021) used simple regression to examine the effect of sustainability performance on the financial performance of a firm by considering the variables of profitability and environmental expenditures in 96 firms, registered in the Nigerian Stock Exchange between 2003 and 2017. Thier study result showed that the SR had a positive effect on financial performance.

5. Data Analysis Method

A firm's value is a function of growth and profitability. The profitability ratios (the ROA & the ROE) were used separately to determine the financial performance of a firm. What the shareholders were most interested in was the ROE ratio, which was the most reported measure of profitability (Ruf et al., 2001). The firms aimed to increase their profitability by using their resources effectively.

Baed on the financial data of 46 firms (excluding banks, insurance firms, and real estate investment trusts) included in the BIST Firms Sustainability Index (XUSRD) between 2015-2021, obtained from Borsa Istanbul, Public Disclosure Platform and company websites, the hypothesis of the study was formed as follows:

H_1: the knowledge level of a firm about sustainability performance indicators has a positive effect on the financial performance of the firm.

The dependent variable of the study was whether a sustainability report or statement was made. The value 1 was taken if the firm reported/disclosed its sustainability. The value 0 was taken otherwise. Due to the discrete nature of the dependent variable, the analysis was carried out using the logistic regression method.

If the dependent variable was a binary variable, such as 0 and 1, or a discrete variable containing more than two levels, the assumption of normality was broken, where logistic regression analysis became an alternative to linear regression analysis.

A research model was built based on the following model created by Vitezić et al. (2012).

$$\text{Probe(SR)} = \beta 0 + \beta 1 \text{ Profitability} + \beta 2 \text{ Firm Size} + \varepsilon \tag{1}$$

Explanations on dimensions are given in Table 1.

Table 1. Variables in the model

Variables	Symbol	Description
SR report/disclosure	SR	1 if a firm reports/discloses its SR; otherwise 0.
Return on Assets	ROA	Net profit/total assets
Return on Equity	ROE	Net profit/equity
Firm size	Size	Natural logarithm of total assets

The independent variables of the model are the ROA and the ROE values, which are accounting-based variables for financial performance. Since accounting-based indicators reflect the internal efficiency of a firm rather than the market fluctuations that the firm is exposed to, only these two indicators were used in the model. Measured by taking into account the natural logarithm of total assets, firm size was included in the equation to control the differences in the size and neglected variables.

6. Results and Discussions

The method was used for logistic regression analysis stepwise. Table 2 shows the omnibus test results of the general suitability of the model. The significance value of the model is 0.007 which is less than 0.05. Therefore, it was concluded that the model was suitable for the data.

According to Table 3, Cox & Snell R^2 value is 0.013 and the Nagelkerke R^2 value is 0.015 as mentioned above, the Nagelkerke R^2 value was greater than the Cox & Snell R^2 value. The Nagelkerke R^2 value showed that 0.015 variance in the dependent variable was caused by the explanatory variables. However, the representative power of the R^2 criteria used in logistic regression models was weak.

The logistic regression results for the variables are given in Table 4. β values were used to determine the probability of the dependent variable being 0 or 1. The ROA value is -0.066 coefficient, which is a negative value. Therefore, the increase of this rate reduced the logarithm of the difference ratio of firms to report/state their sustainability.

The model included standard errors of the coefficients of the variables, Wald statistics, significance levels and model likelihood statistics. The model likelihood ratio indicated at what level the dependent variable increased when the relevant variable increased by 1 unit and other variables in the model were kept unchanged. Except the constant term and the size variable, the coefficient was found not significant. Although the constant term was found to be significant, it was not always possible to interpret it. According to the exp (β) value of the size variable contributing to the model, it was determined that 1-unit increase in the variable caused an increase of 1,945 units in the dependent variable.

Social investment related to sustainability reduces the risks of a firm because the firm will receive the support of a wide stakeholder group. This leads to an increase in the firm's value in the long run. Therefore, firms, which have not developed a strategy related to sustainability, will be probably unsuccessful in the long run. In addition, the relationship between sustainability performance and financial performance is also related to the developed legal system in the country, where the firm is located, because shareholders' rights can be defended and the firm's activities can be monitored transparently. In countries with developed legal systems, shareholders are able to value and price sustainability-related investments and activities. Therefore, the relationship between sustainability performance and financial performance is also positive. (Ararat et al., 2014).

It can be said that financial performance has a significant effect on sustainability performance scores, maybe because the SR has just gained importance in Turkey and it is not compulsory like financial reporting. Due to lack of standard approach, firms cannot attach necessary importance to the SR by acting more flexiblely.

The analysis showed that sustainability positively affected the financial performance through size, the ROA and the ROE. Thus, the research supported the positive results that firms applying sustainability principles and policies had higher financial performance than others.

The study pointed out that the SR was the most important variable on financial performance. Investors always paid attention to the sustainability investment made by firms, which attracted more investors, thus making stock prices of the firms less volatile. These results are in line with that of many literature studies, which argue that genuine commitment to sustainability has positive results in various financial performance targets.

Table 2. General test of model coefficients

Chi-square	df	Prob.
11.116	3	0.007
11.116	3	0.007
11.116	3	0.007

Table 3. Model summary

2 Loglikelihood	Cox & Snell R^2	Nagelkerke R^2
1102.912	0.013	0.015

Table 4. Model classification table

Variables	β	S.I (β)	Wald	Sd	Prob.	Exp (β)
ROA	-0.066	0.124	0.037	1	0.634	0.894
ROE	-0.011	0.101	0.027	1	0.743	0.947
Size	0.104	0.031	8.104	1	0.001	1.945
C	-1.791	0.294	31.157	1	0.000	0.128

7. Conclusion

This study analyzed the relationship between sustainability practices and financial performance in a developing country. Although the regression method for this analysis has been used in previous studies, it contributes by being used in an emerging market.

This study first analyzed the effect of sustainability on the financial performance of firms, based on the data from 46 firms within the BIST Sustainability Index.

Then this study measured the changes in the financial performance between the periods using logistic regression. The results showed that the performance of the firms within the Index increased partially after being included in the Index.

When making a decision among firms with similar financial and operational performance, investors prefer the one with higher sustainability performance. Firms are aware that the only way to maximize their profitability is to be sustainable and meet the expectations of their stakeholders, thus gaining competitive advantages, using their resources effectively and increasing their reputation.

The study has several limitations. Firstly, the sample size is small. Secondly, firms operating in some important sectors, such as banks, insurance, and real estate investment trust, were not included in the research. Future research may overcome the limitations by taking a larger sample and considering all sectors. More research on sustainability will enable the firms in Turkey to be more interested in sustainability studies and to increase the level of individual and social welfare as the final output.

This study for the emerging market of Turkey suggests that future research may investigate possible differences of sustainability according to the development levels of various markets and countries. Industry differences are also important for sustainability and can be further analyzed in the future.

Data Availability

The data, used to support the research findings, is available from the author upon request.

Conflicts of Interest

The author declares no conflict of interest.

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