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Review Article

Financial Performance With Emphasis on the Role of Environmental Information Disclosure

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Abstract
Companies disclose environmental information to achieve social goals. The companies' financial performance is an important factor regarding the information disclosure. Thus, this study identified the components of financial performance based on the environmental information disclosure. This is a systematic review study through searching either Persian and English keywords, including financial performance, environmental, social and governance, ESG, disclosure, environmental performance and environmental disclosure in databases of PubMed, Scopus, Science Direct as well as Google Scholar, SID, Magiran, and Irandoc. After reviewing and screening 388 articles based on inclusion and exclusion criteria, 23 articles were carefully reviewed. The results revealed that four variables namely return on assets (ROA), return on equity (ROE), Tobin's Q and profit margin were used to measure the financial performance of companies in order to disclose environmental information. The results also revealed that some variables such as those related to corporate governance, type of industry and macroeconomic variables (economic growth) can affect the relationship between financial performance and disclosure of environmental content. Companies should disclose environmental information to maintain their reputation in society. Disclosure of environmental content is a tool to create corporate image and social contracts by publishing credible information about environmental performance to reduce or enhance the company reputation. Thus, financial performance can be directly affected by disclosure of the environmental content.
Keywords: Financial performance, Environmental information, Disclosure

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Introduction
Scarcity of resources as well as the occurrence of environmental crises has caused high level concern to human, which highlights that we should consider environmental standards in development of activities. Human systems are more developed systems than ecological systems in terms of time so that their formation begin with the development and organization of human activities in the form of social groups. Due to the unique characteristics of human beings, human systems have experienced gradual growth over time and fast growth in some stages. Gradually, their range of influence has been expanded. The important issue in this regard is that ecological systems form not only the basic needs of human systems, but also supply the materials and inputs and help absorbing the wastes of these systems.[1] Since the adoption of the Kyoto Protocol at the end of the 20th century, companies became interested in helping pollution reduction.[2] The Chicago Climate Exchange[3] formation is an example of how the combination of companies, financial markets, and governments reduces the effects of climate changes. All these made companies pay attention to social and environmental responsibilities.

Moreover, researchers have stated that investors often pursue social goals beyond private financial goals and found no evidence of operating costs for ethical portfolios.[4] A study showed that responsible investing can bring portfolio benefits for investors in emerging markets, and these earnings can be improved on days when there is severe air pollution.[5] In recent years, the importance of social responsibility and sustainable development has increased in order to improve governance.[6,7] All of these have attracted the attention governmental and non-governmental researchers and planners.[8,9]

With increasing attention to social responsibility and sustainable development, companies significantly invested in these matters.[10, 11] In other words, they considered social responsibility and sustainable development as a part of their duties.[12,13] In the corporate sense, engagement in social responsibility and sustainable development activities is a way by which companies compensate the loss imposed to the society due to social and environmental degradation caused by their business activities. It is also an act of appreciation from the host society. In fact, corporate institutions are social creatures and strongly rely on society support to survive.[14]

Companies may engage in social responsibility and sustainable development activities to gain continuous society support, but the question is whether investment in social responsibility and sustainable development is profitable or simply a waste of the company's resources.[15,16] The core of social responsibility and sustainable development is its voluntary nature, which goes beyond legal obligations, external impact management and the orientation of multiple stakeholders. The characteristic of social responsibility and sustainable development goes beyond the alignment of corporate social and economic responsibilities, practices and philanthropy. Functionally, social responsibility and sustainable development act as a real strategic structure, which ensures the sustainability of the company and the environment.[17] Previous studies have shown that corporate financial performance benefits greatly from waste reduction.[18] Hence, efforts to reduce the wastes produced by companies are related to improving environmental performance in various fields. Historically, companies have focused on their trusteeship duty to maximize earnings for investors. However, this limited focus is questionable because society has increasingly become interested in environmental conscious processes and sustainable action.[19] Instead of focusing on earnings (e.g., the traditional bottom line), other researchers proposed a triple-part line of economic, environmental, and social performance that has been widely accepted by many companies.[20,21]

Although some may see these three areas as competitive priorities, they may often complement each other in practice. For example, many companies that focus on waste reduction are also improving their environmental outcomes and financial performance.[22] Disclosure of more information facilitates companies' access to financial resources from the capital market in two ways: (1) help reducing agency costs resulting from more effective shareholder participation, thereby increasing the company's earnings or potential profit, (2) Reducing information asymmetry between firms and investors by increasing levels of transparency.[23] In other words, disclosing more information helps increasing the stock liquidity of companies, which results in reduction of transactions and equity costs as well as improvement of the financial performance.[24] Thus, information disclosure is crucial for the financial performance of the company. Also, the number of studies investigating the impact of information disclosure on financial performance is limited. The stakeholder theory forces companies to disclose social and environmental information which is a need for the society.[25, 26]

All these have required companies to provide environmental performance. If a company does not disclose this information, it will cause overhead costs in the company. This issue has caused companies to disclose environmental information considering the cost-benefit principle. The disclosure will convince the stakeholders and therefore the companies publish annual reports in this regard.[27] The correct measurement of environmental performance increases the synergy of companies' activities.[28] The result of this synergy will be seen in increasing value of the company which shows the relationship between environmental and financial performances.[29]

Some researchers showed that there is a negative relationship between the disclosure of environmental content and financial performance.[30,31] However, some did not find any relationship[32,33] and others showed a positive relationship.[34,35] Information of the environmental performance should be disclosed to the people in society and stakeholders, although the nature of the disclosure is still voluntary. Through the environmental information disclosure, it is expected that the image of company and the perception of stakeholders are increased, which will improve the financial performance of the company.[27] An important question that arises is what the components of financial performance are based on the environmental information disclosure. Thus, the present study was conducted to answer this important question through reviewing previous studies.

Materials and Methods

A systematic review method was used in the present study to answer the question mentioned above. A systematic review is an evidence-based approach that uses PRISMA guideline as a standard tool to provide an accurate and reliable report of the findings of previous studies and identify and collect all empirical evidence with appropriate criteria for answering the research question.[36] This research is a systematic review study in which data was searched through English keywords, including financial performance, environmental, social and governance, ESG, disclosure in the title and abstract of published papers in databases of PubMed, Scopus, Science Direct and Google Scholar with no time limit.

Also, the Persian keywords namely financial performance, disclosure, environmental performance and environmental disclosure were searched through Iranian databases, including SID, Magiran, and Irandoc. In addition, the search was performed in Google search engine to find existing relevant resources that were not retrieved from the mentioned databases. A total of 162 articles (83 English articles and 79 Persian articles) were found. The inclusion criteria were the relevant keywords in the title and abstract of the reviewed articles, Persian and English language articles, access to the full text, published during last 11 years and observational studies (descriptive, analytical). The exclusion criteria were the studies presented at conferences as well as theoretical saturation.

Results and Discussion

In this paper, after reviewing and screening 162 Iranian and foreign papers based on title and abstract, the full text of 47 papers were carefully studied according to inclusion and exclusion criteria. To determine the validity of articles, the critical evaluation skills program method (CASP) was used. The CASP score of the articles was 39.5 out of 50, which indicated the relevance of the articles to the research topic. Table 1 summarizes selected articles based on the CASP score.

The literature indicates that the impact of financial performance sustainability varies across industries.[56] Rate of return on assets (ROA) was the most common criteria for financial performance. However, there are a limited number of studies evaluating rate of ROA alone.[57]

A detailed review of the articles showed that most of the articles have emphasized on the rate of ROA to measure

Table 1. Summary of Selected Articles Based on the CASP Score

Summary of Results	Ref.
Environmental performance has a significant negative impact on the risk of stock price falling. In other words, the more the company strives to protect the environment, the lower the risk of stock price falling. However, the company's political connections will not affect this relationship	37
Environmental stressors and social role have significantly a positive impact on the market output of companies, and the life part of companies has a mediating effect between the relationship environmental stressors and social role. However, size of the role is not statistically significant.	38
Only 23% of the examined companies had more than average performance in the social responsibility and environmental disclosure, and among them, Iran Khodrow Company as the automobile industry and parts manufacturing company had the best performance.	39
Corporate characteristics and creditors' power have a significant relationship with the level and depth of environmental disclosure, while no significant relationship was observed between shareholders and auditors' power and environmental reporting.	40
Disclosure of sustainability information has a significant and direct relationship with the financial performance and value of companies	41
There is a direct and significant relationship between social, environmental and ethical performance and financial performance of companies.	42
Sustainable environmental performance information has a positive effect on companies' capital costs, which can be due to stock price volatilities, ignoring company specific properties (e.g., management ability or employee skills) or the interaction of historical information and prospective information.	43
Companies that have better social role in terms of organizational clarification, socioeconomic status, philanthropic role and good incorporate governance and high-profit achievement. The results also showed that companies' profitability in terms of ROA, leads to an increase in their level of social responsibility.	44
Changes in the disclosure of social and environmental responsibility are associated with the dimensions of financial performance appraisal and operating profit to sales ratio.	45
The quality of environmental disclosure and corporate governance mechanisms is directly and significantly associated with the relevance of stock values of listed companies. Also, the quality of environmental disclosure has a direct and significant relationship with the stock performance of companies.	46
They found a positive relationship between environmental efficiency and financial performance.	2
Disclosure is more important for profit, while action is more important for Tobin's Q and IVA scores.	47
Their results showed a positive relationship between reducing pollution emissions and financial performance.	48
The results of the study showed the negative impact of environmental disclosure on the company's financial performance indicators	49
ESG disclosure improves company performance even after controlling for competitive advantage. Also, increasing the ESG disclosure by one unit will increase the company performance by approximately 4% in Malaysia.	50
There is a positive and significant correlation between the disclosure of environmental information and the disclosure of technological innovation information of coal companies, but either of them have a negative effect on the companies' financial performance. In addition, the synergistic impact of environmental information as well as the technological innovation disclosures cause the negative effect more significant.	51
The three most widely used operational leverages (inventory reduction, lean capacity and novelty) are associated with better financial performance and the level of environmental importance is involved in this regard.	22
The results showed that the positive effect of disclosure of environmental information on the financial performance of companies is consistently significant.	52
They found a univariate association among environmental management and financial performance, showing optimal level of environmental management of SMEs which maximizes the performance.	53
Environmental performance has a positive and significant impact on financial performance.	54
Disclosure of environmental information positively (directly) affects financial performance.	24
Disclosure of information has a negative impact on equity costs, but it has a positive impact on company value and profitability	23
There is a close relationship between the level of disclosure of environmental accounting information and financial performance. In terms of financial performance, there is a difference between companies that have not disclosed environmental accounting information and those that have disclosed environmental accounting information.	55
Financial performance was measured by reducing the amount of pollution by American companies. That is the reason companies that emit less pollution have a better environmental performance	2
Disclosure of environmental performance has an effect on increasing the value of companies. This has been achieved by improving risk management and increasing the credibility of the company	3
The environmental performance has a significant and positive relationship with the improvement of these indicators	47
They used four indicators named ROE, ROA, stock market returns and Tobin's Q as indicators of financial performance. They also investigated the impact of corporate governance and macroeconomic indicators on the relationship between financial and environmental performance, and finally all relationships were confirmed	48

Table 1. Continued.

Summary of Results	**Ref.**
In this research, the effect of corporate governance on the relationship between financial performance and environmental information disclosure was investigated, in which all relationships were confirmed. Also, the effect of corporate governance on the relationship between financial performance and environmental information disclosure was confirmed	49
The findings showed that paying attention to environmental information will lead to the optimal use of resources and ultimately improve the performance of the company	50
The findings showed that paying attention to the disclosure of environmental information has a significant relationship with the disclosure of innovative information. Companies that pay attention to environmental disclosure will perform in a better way.	51
The importance of environmental concerns in a particular industry affects the relationships between lean inventories, lean capacities, novelty, and corporate suitable financial performance	22
The researchers used the ROE and ROA as indicators of financial performance in their study. They also used the variables of profit to cost of production, operating costs, government subsidies and public attention as mediating variables in the relationship between financial performance and environmental disclosure. In this study, multivariate regression was used to investigate the relevant relationships. Statistical analysis did not deny the existence of the above relationships	52
Tobin's Q and ROA were used as indicators of financial performance in their study. Recent arguments about the environment and ozone depletion indicate that active environmental practices have been focused on many governments and corporate debates. Climate changes are considered a threat to environmental sustainability, and companies, public and non-public organizations are encouraged to pursue sustainable environmental practices in their efforts to protect the environment. In this study, multivariate regression was used to investigate the relevant relationships. Statistical analysis did not deny the existence of the above relationships. In some cases, the relationships were negative and in some, they were positive. Therefore, the relationships between the variables were confirmed as non-linear	53
By improving environmental performance, companies' investment improves and their profitability increases. Also, companies that pay more attention to environmental information will eventually increase their sales by increasing their credibility. Environmental disclosure is a tool for creating corporate image and social contracts by publishing credible information about environmental performance to reduce or enhance the company's reputation. Good performance information in environmental disclosure can significantly influence customer decisions to repurchase their products	54
They used return of asset as a criterion of financial performance. They also used the number of reports on target companies, institutional investors, liquidity, industry type, and company as mediating variables in the relationship between financial performance and environmental disclosure. With the exception of institutional ownership, the impact of all variables on the relationship between environmental information disclosure and financial performance was confirmed. The results showed that different companies should consider different environmental policies	24
In this study, ROE, ROA and stock book value were used as indicators of financial performance. The positive and significant relationship of the above indicators with the disclosure of environmental information was confirmed. Information disclosure by a company improves financial performance and may indicate minimizing information asymmetry among the company's shareholders. Companies tend to disclose more information to their users to reduce asymmetric information and show the positive performance of the company. Thus, information disclosure generally enhances the financial performance of companies. Disclosure of more information reduces the cost of equity and increases the financial performance of companies. Hence, it can be stated that companies are improving their environmental policies and increasing the level of EID to improve their financial performance (reduce their COE)	23
The indicators of financial performance in this study were Tobin's Q and ROA. The positive and significant relationship of the above indicators with the disclosure of environmental information was confirmed. Disclosure of environmental information will improve the company's long-term strategies. Highly effective companies that are often among the top companies in the industry fulfill their environmental duties well and disclose adequate and accurate environmental information disclosure. Information disclosure of environmental accounting is an approach for businesses to achieve their objectives of employers, especially in the integration procedure of developed countries which are highly interested in attempting at being green and looking for sustainable development. However, the situation indicates that the task of accounting and environmental information disclosure has not been properly considered by developing companies. Thus, businesses should strengthen the solution to improve environmental accounting to support information disclosure in future, since the size of information disclosure of environmental accounting causes the economic performance of companies in recent and future period. Hence, information disclosure of environmental accounting is used not only to be in accord with environmental regulations and decrease legal complications, but to increase the quality of image as well as financial efficacy of the business	55
ROA was considered an indicator of financial performance in this study. The authors investigated the role of other factors, including political connections (at three levels: individual, social, and economic) and the risk of stock collapse. The role of information disclosure in predicting, judging and evaluating has always been significant. In recent years, people's attention to environmental issues and problems has shifted the minds of users from traditional and purely financial reports to non-financial reports, especially those related to social responsibility, so that these activities have directly affected the performance of the company	37
The market value of companies was the indicator of financial performance in this study. The role of other factors, including CSR and company life cycle were also assessed in this study. Social responsibility is one of the important factors in evaluating companies from the social enterprise theory point of view. Environmental efficiency as a part of social responsibility has been the focus of economic and social analysts and its relationship with financial and economic indicators of corporate performance is the focus of some socio-economic accounting research. Corporate social responsibility and its environmental performance can increase the market value of companies. Also, the life of the company can facilitate this relationship. In other words, in the companies with a longer life and in those that are largely related to environmental issues and consequences, the efficiency of the company's environmental performance is considered positive by the market and is affected by environmental performance	38
The economic value added (EVA), profit margin, competitive advantage, production efficiency indicators, performance tax paid and mandatory taxes were used as effective financial and economic factors influencing environmental disclosure. Corporate sustainability has always been a fundamental issue and includes all activities related to production and economic growth. An increasing number of companies and organizations are seeking for sustaining their operations and engaging in sustainable development	39
Profit margin was the indicator of financial performance in this study. The researchers also used the power of stakeholders and the type of industry in this regard. The increasing attention of different groups of society to environmental problems has led to the emergence and development of environmental reporting in recent decades, so that the non-economic consequences of the activities of business units, such as environmental effects, is one of the influential factors in users' decisions. As the theory of legitimacy predicts, larger companies, which face more pressure from society on their activities, make greater efforts to provide information to gain public support. Companies with positive financial performance and high profit margins are more motivated to provide information and improve their reputation for the society, and vice versa. Also, companies operating in polluting industries are under more pressure by stakeholders and society in general, which are forced to disclose more information to maintain their legitimacy.	40
In this study, net profit margins, Tobin's Q, and ROA were used as indicators of financial performance. As the disclosure of sustainability information improves, the financial performance and value of companies improve. It means the more companies follow the principles and indicators of corporate sustainability, the better their performance will be.	41

Table 1. Continued.

Summary of Results	Ref.
The researchers used Tobin’s Q and ROA as indicators of financial performance. They also used ethical performance and government ownership as other key variables. Financial performance requires the optimal use of financial resources. Ethical, environmental and social performance affects the financial and operational indicators of manufacturing companies. In other words, if companies have a commitment to social, environmental and ethical issues, their financial performance will increase.	42
The adjusted ratio was used as an indicator of financial performance in this study. The researchers used the cost of capital as another key variable, as well. The emergence of environmental issues affects the disclosure of environmental commitments and performance. One of the important goals and sustainable environmental performance of the company is to provide commitment to environmental performance and accept responsibility for the company's actions. For this purpose, combining the company's financial statements and environmental performance into a single report enables organizations to disclose their actions	43
ROE, Tobin’s Q and ROA were considered as the indicators of financial performance in this study. The results showed that each of the company's performance indicators have different reactions to the company's performance in different areas of social responsibility. Thus, to improve the company's performance through activities in the area of social responsibility, the desired performance characteristic should be considered, since the activity in each of the areas of social responsibility has separate and distinct effects on different performance indicators. Thus, it can be stated that companies with better social responsibility will achieve higher profitability	44
The indicators of financial performance were the ROE, ROA, ratio of operating profit to sales, net rate of return on wealth and the ratio of earnings per share to stock price. In addition to financial issues related to financial operations that can affect the company’s productivity, there is a relationship between the changes in the disclosure of issues related to the community and the environment and the dimensions of financial performance, operating profit margin, rate of return on investment and net rate of return on the wealth used.	45
Indicator of financial performance in this study was the ROA. The author also used the percentage of non-executive directors of board, the percentage of ownership of the board members and CEO, and the percentage of ownership of the institutional shareholders as other key variables. Environmental and social reporting is a tool for corporate accountability and performance. Reports should provide unbiased information so that stakeholders can estimate the reliability of the organization's environmental and social performance. The results suggest that company managers tend to use corporate social reporting in proportion to their performance and profitability. Although the main goal of companies is to increase efficiency and profit, in the information age and globalization, observing business ethics and social responsibility by increasing the legitimacy of the organization's actions will increase revenue, improve performance and competitive advantage of the organization.	46

performance. The ROA is obtained by dividing the net profit to the average assets. The reason for using this variable is the high importance of how assets are used in companies. After this variable, the capital return rate variable had the most use and importance. This variable is also obtained by dividing net profit to capital. To measure the disclosure of environmental information, the average score of environmental information has been used. In other words, a checklist was prepared regarding the company’s attention to the waste of energy and resources and having an environmental certificate, in which a score was given to each item, and the average score was considered as the environmental information disclosure score.

Conclusions

Most of the previous studies showed that the disclosure of environmental information improves the performance of companies. Although these relationships changed with the changes in the characteristics of companies in terms of corporate governance policies as well as economic policies, but companies should pay attention to the disclosure of environmental information using cost-benefit analysis. Profitable companies have higher capability and willingness to invest in higher and well-targeted information disclosure. However, no evidence of reverse causality can be found. It will probably take longer time to see the effects of a good reputation through extensive and targeted and voluntary disclosure. Existing studies on financial and environmental performance relationships have used different financial performance criteria without agreeing on appropriate financial performance standards. The purpose of this research was to identify the components of financial performance based on the environmental information disclosure by systematic literature survey. After reviewing and screening 162 Iranian and foreign articles based on inclusion and exclusion criteria, 47articles were carefully reviewed. The results of the studies revealed that, ROA, return on equity (ROE), Tobin’s Q ratio and profit margin have been used to measure the financial performance of companies to disclose environmental information. The results also revealed that some variables including corporate governance, type of industry and some macroeconomic variables (economic growth) can affect the relationship between financial performance and environmental information disclosure.

In Iran, to report basic information of environmental accounting is now optional and away of any public process. The results of the studies are necessary for encouraging of organizations in order to change their objectives when preparing annual reports. Also, the content of disclosure in their annual report should not focus too much on indicators. The financial results obtained during the year ignore the achieved environmental performance because investors are more interested in investing on implementation of corporate social responsibility along with the world green development trend. Therefore, disclosure of this information is also a way to attract the investor’s attention to implement the environmental responsibility. More researches are suggested to evaluate the impact of environmental information disclosure on the performance of industries.

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