

# Evaluating the sustainable performance of corporate boards: the balanced scorecard approach

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## Abstract

**Purpose** – The purpose of this paper is to develop a method for evaluating the sustainable performance of corporate boards using the balanced scorecard approach. Also, the paper aims to determine the need and relevance of the proposed method in the evaluation process by testing the differences in the relative importance of the proposed method measures on a sample of the Egyptian manufacturing companies.

**Design/methodology/approach** – Data were collected using a questionnaire list and personal interviews with three different population samples: board members, managers of manufacturing companies and financial analysts in brokerage firms. The Wilcoxon signed rank test was used to test the degree of approval on the related questions, and the Kruskal–Wallis test was used to test the differences among the responses of the three samples.

**Findings** – The results of the statistical analysis indicate that there is a need for companies to have an effective tool to evaluate the board performance, and that the proposed method is a suitable tool for the evaluation. Also, the results indicate that there are differences in the relative importance of the performance measures among the three samples.

**Research limitations/implications** – The exploratory study focused on a sample of manufacturing companies only. Accordingly, service companies and financial institutions are outside the scope of this research. There was difficulty in accessing a sample of shareholders; instead, this sample was replaced by a group of financial analysts in brokerage firms.

**Practical implications** – The proposed method adds to the performance evaluation literature with regard to measuring and evaluating the performance of boards. The study provides an empirical evidence of the need to use the balanced scorecard in the board evaluation and its relevance for the evaluation process. It provides a short guide to the most important performance measures to be used in the evaluation process of the company's board of directors.

**Originality/value** – Few studies have focused on evaluating the performance of the board of directors using the balanced scorecard. This study is an important attempt to evaluate the sustainable performance of the board of directors using the balanced scorecard by taking into consideration the corporate social responsibility perspective. The proposed board's balanced scorecard provides a useful tool to evaluate the performance of boards using objective, specific and clear measures.

**Keywords** Egypt, Corporate social responsibility, Balanced scorecard, Board, Sustainable performance evaluation

**Paper type** Research paper

## 1. Introduction

The continuous changes in business environment and the financial crises that companies have faced in recent years have led to the claim of many academics and professionals to improve corporate governance (IFAC, 2004; Busco *et al.*, 2005). In the light of these changes, companies must innovate and adapt their corporate governance practices in a way that meets the recent changes and takes an advantage of new opportunities (OECD, 2004, p. 13). In response to the challenges to keep up with an ever-changing environment, a set of



procedures and principles needs to be developed to improve governance. One of the most important achievements is to make a balance between the two basic dimensions of governance: the compliance dimension and the performance dimension (IFAC, 2004; Pultorak and Kerrigan, 2005; Busco *et al.*, 2007; IFAC, 2008, 2009a, 2009b, 2010, 2011). The performance dimension aims to achieve an efficient use of company resources and value creation. The achievement of this dimension requires a set of operations which includes strategic planning, strategic decision-making, performance measurement and evaluation, strategic risk management and continuous improvement. The compliance dimension focuses on the commitment with legal and organizational regulations and aims to achieve the accountability and the reliability (IFAC, 2004, pp. 10-11).

Most accounting studies in the field of governance considered the compliance dimension through the financial accounting and the auditing mechanisms. The performance dimension did not take enough considerations in these studies. Strategic management accounting can help in activating performance dimension; it focuses on the strategic aspects of the company performance and has an important role in planning and controlling processes. The studies in this area are interested in strategic management accounting tools that are used at the operational and middle levels. Most of these studies concluded that these tools have an important role in activating the performance dimension and achieving governance objectives such as improving corporate performance and competitiveness (Voss *et al.*, 1997; Dixon, 1998; Adler *et al.*, 2000; Kennedy and Graves, 2001; Cagwin and Bouwman, 2002; Anderson and Mcadam, 2005; Prasnikar *et al.*, 2005; Cadez and Guilding, 2008).

The motivation for this study arises from a number of reasons. *First*, most accounting studies in the governance field have focused on the structure of the board. The board performance evaluation did not receive sufficient attention in these studies, although it is an essential element of good governance. Therefore, there is a scarcity in studies that dealt with evaluating the board performance in general. *Second*, although the governance standards in Egypt emphasized on the importance of evaluating board performance, no studies in Egypt discussed this issue. *Third*, the studies that discussed the board performance evaluation focused on traditional methods such as interviews and questionnaire. The balanced scorecard did not receive a sufficient attention in the board evaluation process. These studies did not provide an empirical evidence of the need to use the balanced scorecard in the board evaluation and its relevance for the evaluation process. *Fourth*, the previous studies that discussed the board's balanced scorecard ignored an important aspect, which is the environmental and social dimension.

This study contributes to the literature in several ways. *First*, the board's balanced scorecard that was proposed by previous studies is developed to reflect the sustainable performance evaluation through the inclusion of the social and environmental considerations. *Second*, an exploratory study in the Egyptian manufacturing environment is conducted to test the need and relevance of the proposed method for the evaluation process and to determine whether there are differences in the degree of the relative importance of the proposed method measures. *Finally*, a short guide of the most important performance measures is provided to be used in the board performance evaluation process.

The paper is organized as follows: In Section 2, the extant literature concerning the need for evaluating the board performance is reviewed. This is followed by a discussion of the basic elements of the board performance evaluation process. Next, dimensions and measures of the board's balanced scorecard are discussed to determine how to make changes to reflect the sustainable performance. The research methodology is then presented and followed by a discussion of the results. Finally, the main results of the study and conclusion are reviewed.

## 2. Literature review

### 2.1 *The need for evaluating the board performance*

With respect to the top management level, most governance studies adopted a narrow view with regard to the structure of the board, which focused on issues related to a composition, independence and a diversity of the boards (O'Regan *et al.*, 2005; Kang *et al.*, 2007; Bohren and Strom, 2010). Despite the importance of these issues, the financial crises in recent years have led to the need for more attention to evaluate the board performance (Epstein *et al.*, 2002; Ingley and Walt, 2002; Behan, 2004; Kiel and Nicholson, 2005; Stybel and Peabody, 2005; Minichilli *et al.*, 2007; Northcott and Smith, 2011), which is the basis for a good governance (Anderson, 2006, p. 21) and an important part of governance process (Minichilli *et al.*, 2007, p. 609; Miller, 2009, p. 141). It provides the opportunity to identify the points of weakness in the board performance (Ingley and Walt, 2002, p. 171).

With regard to the role of the management accounting in evaluating the board performance, there are many management accounting control tools, such as budgets and performance evaluation systems, which focused on monitoring and evaluating the performance of subordinates by senior management. The problem of corporate governance is the absence of similar tools for controlling and evaluating chief executive officers (CEOs) and other senior managers (Seal, 2006, p. 402) and evaluating the board performance. To be able to play an important role in improving the governance, management accounting should provide and develop suitable tools for this role. Some studies have suggested the use of the balanced scorecard in evaluating the board performance, which consists of four dimensions: financial dimension, stakeholders dimension, internal processes dimension and learning and growth dimension (Epstein *et al.*, 2002; Kaplan and Palepu, 2003; Nagel and Rigatuso, 2003; Kaplan and Norton, 2006; Epstein and Roy, 2003; Northcott and Smith, 2011). These studies ignored an important aspect affecting the sustainability of the company, which is corporate social responsibility. Although companies are aware of their obligations to the community for many years, recent years have witnessed a great interest in the social responsibility aspect as a result of increasing government pressures on companies to preserve the environment and the society through the issuance of several environmental and social laws, in addition to increasing the control from media and the appearance of corporate governance. According to the principles of corporate governance issued by the Organization for Economic Co-operation and Development, the board of directors should pay attention to all parties concerned and deal with them fairly and must take into account the environmental and social issues (OECD, 2004, p. 58). According to corporate governance standards in Egypt issued by Egyptian Institute of Directors (EIOD), the Egyptian companies should disclose the company's social and environmental policies and those related to occupational safety and health to stakeholders and their employees at least once a year (EIOD, 2005, p. 16).

The financial crises faced by many companies in recent years have led to the need for more accountability of the board of directors and to determine the extent of fulfilling its responsibilities, so more attention was given to evaluate the board performance (Epstein *et al.*, 2002, p. 3; Kiel and Nicholson, 2005, p. 613; Minichilli *et al.*, 2007, p. 609). The board performance evaluation provides a process for the boards to determine weakness areas before they reach a crisis point and may play an important role in avoiding company's failure (Kiel and Nicholson, 2005, p. 614). A comprehensive board evaluation is an important element to improve the company's governance (Behan, 2004, p. 6) and a critical factor for the success of the companies (Northcott and Smith, 2011, p. 34). It has an important role in improving the board performance and the corporate performance (Epstein *et al.*, 2002, p. 7;

Stybel and Peabody, 2005, p. 68). A regular evaluation of the board is considered as a way to improve communication, leadership and the decision-making process of the company, getting more clarity of responsibilities, greater accountability and more efficient board operations (Kiel and Nicholson, 2005, p. 615).

The board performance evaluation became a legal requirement that should be committed by the companies registered in many stock exchange markets and a component of corporate governance codes that were issued in different countries. According to a listed company manual issued by New York Stock Exchange in 2003 and amended in 2009, Section (303A) requires the boards of listed companies to make self-evaluation at least once a year to determine whether the board of directors and its committees operate effectively (NYSE, 2009). In accordance with the combined code on corporate governance in the UK issued by the Financial Reporting Council in 2003 and amended in 2012 under the title of "The UK corporate governance code", the board should undertake a formal and rigorous annual evaluation of its performance, its committees and individual directors to identify the points of strengths and weaknesses. The board should state in the annual report how the performance of the board, its committees and its individual directors has been evaluated (FRC, 2012, p. 15). According to principle No. (8) of corporate governance principles and best practices in Australia, which was published by Australian Stock Exchange (ASX) (2003, p. 47), the performance of the board should be reviewed on a regular basis. In Egypt, according to the corporate governance standards issued by EIOD (2005), and amended in 2011, the chairman of the board is responsible for evaluating the board members either by himself or through specialized bodies. This evaluation is used to improve the board performance, take decisions related to the formation of the board and determine training needs of the members (EIOD, 2011, p. 15). The governance standards of public sector companies in Egypt require an annual evaluation of the board performance, and the board chairman is responsible for evaluating the members and he can use experiences from outside the board. Based on this evaluation, the size and composition of the board and bonuses paid to members can be reviewed. This evaluation can be used as a primary mean for developing appropriate and effective programs for the board members (EIOD, 2006, p. 30).

### *2.2 Elements of board performance evaluation process*

Some studies have focused on developing a framework to evaluate the board performance (Inglely and Walt, 2002; Kiel and Nicholson, 2005; Minichilli *et al.*, 2007). According to these studies, we can conclude that the board performance evaluation process involves four basic elements: the evaluation agent, the addressee of the evaluation, the evaluation content and the evaluation methods.

*2.2.1 The evaluation agent.* Evaluating board performance may be done by an internal party represented by the chairman of the board. In some cases, it may be appropriate to delegate the evaluation process to a non-executive member, a leader director or a committee of the board. Also, the evaluation process may be carried out by an external party who has an experience in the corporate governance and the performance evaluation (Kiel and Nicholson, 2005, p. 626). The self-evaluation method is a common way to evaluate the board performance (Stybel and Peabody, 2005, p. 67; Curtis, 2007, p. 62; NYSE, 2009). Although this method is characterized by confidentiality, there are some biases. It is difficult for the chairman or the non-executive member to provide an objective view on the board performance and its members who work closely with them. They may not possess the skills and abilities that enable them to carry out the evaluation process, and they may not have enough time to do this mission (Kiel and Nicholson, 2005, p. 627). We can get a higher degree of objectivity and independence in the case of evaluating the performance by a nominating

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committee or an audit committee. However, the bias risk will remain (Minichilli *et al.*, 2007, p. 613).

The board may use an external counselor in the case of non-availability of the necessary skills for the evaluation process and to achieve greater transparency and objectivity. The external counselor may be a professional counselor or a trusted adviser. Some companies use a trusted adviser, as the board prefers to deal with people whom they know and trust, but it is better to use a professional counselor who has a high level of technical skills and a high degree of independence (Kiel and Nicholson, 2005, pp. 627-628).

*2.2.2 The addressee of the evaluation.* According to Minichilli *et al.* (2007, pp. 611-612), the board performance evaluation is provided to three main parties. The first party is the board of directors who uses the evaluation in improving their internal working structures and processes. Internal stakeholders represent the second party; this category generally includes the managers and the employees. They use the evaluation in determining the board's ability to manage the company, assessing the board's involvement in setting and determining the objectives of the company. The third party is represented by external stakeholders; those who use the evaluation in assessing the board's commitment to its responsibilities.

*2.2.3 The evaluation content.* Based on the analysis of the previous studies that discussed the evaluation content of the board evaluation process (Ingley and Walt, 2002; Epstein *et al.*, 2002; Schnase, 2004; Epstein and Roy, 2004b; Curtis, 2007; Minichilli *et al.*, 2007), four basic elements should be evaluated: responsibilities, operations, structure and membership of the board. The responsibilities element aims to evaluate the extent to which the board is fulfilling its responsibilities (Minichilli *et al.*, 2007, p. 616). The operations element aims to assess the existence of a good connection between the board and the management, the appropriateness of the number and the duration of the board meetings and its committees (Curtis, 2007, p. 63). The structure element assesses whether the board has the proper regulation to do its duties in terms of the number of members, the proportion of external members and the number of committees formed (Epstein and Roy, 2004b, p. 9; Schnase, 2004, p.13). Finally, the board membership element aims to assess the availability of certain attributes in the board members, that include skills and knowledge, professional experience, competence, ethics, diligence and independence (Epstein and Roy, 2004b, p. 5; Minichilli *et al.*, 2007, p. 616).

*2.2.4 The evaluation methods.* There are several methods to evaluate the board performance; the board can choose one of these methods or a combination of them in light of several factors such as the size of the board and the budget available for the evaluation process (Schnase, 2004, p. 9). One method is to specify at least one meeting annually to review the performance and behavior of the board and discuss the trends in the future; this method is called an open discussion among the board members (Minichilli *et al.*, 2007, p. 618). According to the interviews method, the performance is evaluated through interviewing board members. This method aims to provide detailed information and in-depth views on the performance; it is considered as the main qualitative data collection method (Kiel and Nicholson, 2005, pp. 622-623). The board can be evaluated through the use of a questionnaire to be completed by the members (Miller, 2009, p. 142); this method is characterized by its low cost (Stybel and Peabody, 2005, p. 70). Finally, according to the participant observation method, the performance is evaluated by observing the board meetings and the participation of each member (Kiel and Nicholson, 2005, pp. 624; Minichilli *et al.*, 2007, p. 619). These methods reflect personal efforts by various means, where they are subjects to a personal judgment and do not provide a comprehensive framework which helps in evaluating the board performance through objective and specific measures.

### *2.3 Board's balanced scorecard*

Kaplan and Norton (1992, pp. 71-72) introduced the balanced scorecard approach as a comprehensive approach to measure and evaluate the performance from a strategic perspective. It includes financial and non-financial measures; the financial measures tell the results of actions already taken, and the non-financial measures focus on customer satisfaction, internal processes and innovation and improvement. In this approach, the performance is measured and evaluated by answering four basic questions:

- Q1. How do customers see us (customer perspective)?
- Q2. What must we excel at (internal processes perspective)?
- Q3. Can we continue to improve and create value (innovation and learning perspective)?
- Q4. How do we look to shareholders (financial perspective)?

The studies that discussed the balanced scorecard have focused on evaluating the results of using it (Hoque and James, 2000; Lipe and Salterio, 2000; Banker *et al.*, 2000; Malina and Selto, 2001; Braam and Nijssen, 2004), barriers and problems of its application (Schneiderman, 1999; Norreklit, 2000; Othman, 2006). Few studies have suggested the possibility of using the balanced scorecard in evaluating the board performance (Epstein *et al.*, 2002; Kaplan and Palepu, 2003; Nagel and Rigatuso, 2003; Kaplan and Norton, 2006; Epstein and Roy, 2003; Northcott and Smith, 2011). These studies discussed the board's balanced scorecard which consists of four dimensions: the financial dimension, the stakeholders dimension, the internal processes dimension and learning and growth dimension. The framework of the board's balanced scorecard is based on identifying four basic elements in each dimension: the objectives, the performance drivers, the measures and the targets. The objectives reflect the board responsibilities, and the performance drivers are actions taken by the board to achieve the objectives. Each performance driver should be linked to specific measures and targets. The performance measures are used to control the performance drivers and assess whether the board has achieved the goals. The targets reflect the best practices of the industry and the company's commitment to the superior corporate governance (Epstein and Roy, 2004a, p. 26; Ling *et al.*, 2009, p. 42). Other studies have focused on its benefits, where the board's balanced scorecard helps in defining strategic contributions of the board, providing a tool to manage the composition and the performance of the board and its committees and clarifying the strategic information required by the board (Kaplan and Nagel, 2004, p. 36). It helps in monitoring structure and performance of the board and its committees (Creamer and Freund, 2010, p. 366). These studies were theoretical studies; they did not provide any empirical evidence of the need for this method and its relevance for the evaluation process.

Table I illustrates the strategic objectives and performance measures of the board's balanced scorecard.

### *2.4 Developing the board's balanced scorecard*

The studies that discussed the board's balanced scorecard ignored an important issue which has taken a great interest in recent years. This issue is corporate social responsibility, which is seen as the integration of environmental and social issues in company's operations and interactions with stakeholders (Enquist *et al.*, 2006, p. 188). Companies have an impact on the environment and the society in which it operates through their operations, products, services and its dealings with stakeholders (Sweeney, 2007, p. 517). These companies must consider and engage in social responsibility activities, which are beneficial to stakeholders (Kim *et al.*, 2012, p. 762), and many large companies deal with social responsibility as a part of their business strategy (Creel, 2011, p. 24).

Dimension	Objectives	Measures
Financial	Long-term financial success	EVA ROI
	Short-term financial success	Stock price Earnings Cash flow Success of change
Stakeholders	Long-term success of approved major organizational changes	Number of ethical/legal violations Level of compliance with governance guidelines
	High level of ethical behavior and legal compliance	Number of voluntary disclosures Evaluation of quality of external disclosures
	High level of corporate governance and accountability	Number of meetings with stakeholders Number of complaints (from community, customers, employees) Number of communication channels with board Stakeholders' satisfaction survey
Internal processes	Successful identification and management of stakeholders' needs	Number of risk audits performed and results Number of crises and evaluation of response Number of actions taken based on performance evaluation % of performance linked to nonfinancial performance Goals clearly defined for CEO, board, etc. Number of board members owning stock
	Effective management for crisis and risk	Number of visits to the company sites by individual directors % of projects accepted by board that met or exceeded projected ROI Number of hours spent on long-term strategic issues
	Effective performance evaluation systems	Overall attendance at meetings % of meetings without CEO Average duration of meetings Number of days in advance that material is sent % of meeting time allocated to opposing points of view
	Effective review of corporate strategic plans, structures, and major investments	Existence of a position description for CEO Interim CEO identified % of directors "financially literate" Diversity of board % of independent members
Learning and growth	Effective functioning of the board	Number of training programs Quality of programs as evaluated by new directors
	Strong succession for CEO and senior management	
	Improving composition of board	
	Improving skills and knowledge	

**Table I.**  
The objectives and performance measures of the board's balanced scorecard

Source: Epstein and Roy (2004a, pp. 28-29)

A company's commitment to its social responsibility leads to an increase in customer loyalty (Dey and Sircar, 2012, p. 38), increase in the value of the company (Creel, 2011, p. 24), creation of a competitive advantage (Kumar and Tiwari, 2011, p. 23), increase in the trust in the company (Mackenzie, 2007, p. 935), increase in employee satisfaction and the loyalty to the company, enhancement of the operational efficiency and improvement in the company's reputation in the market (Creel, 2011, p. 24; Dey and Sircar, 2012, p. 39). Social responsibility activities have a positive effect on financial performance (Karagiorgos, 2010; Chen and Wang, 2011; Saleh *et al.*, 2011).

The board of directors plays an important role in the corporate social responsibility, where the decision of adopting and implementing social responsibility is a strategic decision taken by the board. As responsible for directing and reviewing the company's strategy (Siciliano, 2002, p. 34; OECD, 2004, p. 24; Fiegenger, 2005, p. 627; Lawson and Ricktermeyer, 2010, p. 14), the board should assure that the social and the environmental considerations have been integrated into the company's strategy and take these into considerations when making decisions. Some boards form a committee of social responsibility that aims to assist the board in fulfilling its responsibilities relating to control social responsibility policies and programs (Mackenzie, 2007; Hank, 2010; Strandberg, 2008; Rupley *et al.*, 2012). This committee is responsible for designing, updating, supervising and implementing the corporate social responsibility policies, tracking progress in it, discussing the social responsibility strategy and ensuring the provision of a sufficient budget to implement obligations of the social responsibility (Strandberg, 2008, p. 17).

Given the importance of the corporate social responsibility and the important role played by the board of directors in it, the researchers see the need to include environmental and social considerations when evaluating the board performance. Therefore, they will try to develop the board's balanced scorecard to reflect the environmental and the social performance of the board to reach a sustainable performance evaluation. Previous studies have suggested evaluating the sustainable performance through the use of the balanced scorecard by extending its framework to include social and environmental aspects, a so-called sustainability balanced scorecard. There are three approaches to integrate environmental and social aspects in the balanced scorecard (Figge *et al.*, 2002, pp. 273-275; Gates and Germain, 2010, pp. 2-3; Butler *et al.*, 2011, pp. 4-5). The first approach focused on integrating environmental and social aspects in the balanced scorecard perspectives. Adding a fifth dimension to the balanced scorecard to reflect the environmental and the social aspects is the second approach. The third one is developing a separate sustainability balanced scorecard to reflect the environmental and social aspects; it includes four perspectives, which are sustainability, stakeholders, internal processes and learning perspectives.

### 3. Methodology

The type of the research used for this study is exploratory research, because this type of research is conducted into an issue where there are few or no earlier studies to refer to. The focus is on gaining insights and familiarity for later investigation (Fowzia, 2011, p. 57). The exploratory study aimed to test the proposed method in terms of the need and relevance of this method for the board evaluation process in the Egyptian manufacturing environment.

#### 3.1 Research questions

Specifically, the study responds to the following three research questions:

- RQ1. Do Egyptian manufacturing companies need an effective tool to evaluate the performance of their boards?



- RQ2. Is the proposed method an effective tool for evaluating the board performance of the Egyptian manufacturing companies?
- RQ3. Are there differences in the relative importance of the dimensions and measures of the proposed method in the Egyptian manufacturing companies?

### 3.2 Use of fifth dimension for balanced scorecard

The researchers adopted the approach of adding a fifth dimension, named “the environmental and social dimension”, to develop the board’s balanced scorecard, which was suggested by the previous studies. They chose this approach because it highlighted the importance of the social responsibility as a goal of the company and attracted the attention of the board toward the importance of the environmental and social issues and their impact on the company’s performance. The developed board’s balanced scorecard provides a comprehensive and balanced measure for the board performance, which includes economic, social and environmental dimensions.

The board has two objectives in the environmental and social dimension; the first objective is to ensure that there is an improvement in the environmental performance to preserve the environment. The second is to ensure that there is an improvement in the social performance to meet the social needs and deal with the social problems. The achievement of the first objective requires a conditioning production and services systems in line with environmental considerations, conserving natural resources and a commitment to an environmental legislation. The second objective needs to respond to the social requirements of the various categories of stakeholders in terms of providing a suitable working environment for employees to encourage them to make more effort and increase their loyalty to the company and providing services that achieve public benefits (donations to charities, building schools and hospitals). It also includes responding to the social needs of the clients in terms of a real announcement about the company’s products, providing the necessary data for the product such as the expiry date and the ingredients, in addition to providing environmentally friendly products. [Table II](#) summarizes the strategic objectives, performance drivers and performance measures of the environmental and social dimension as the fifth dimension in the board’s balanced scorecard.

The researchers believe that the use of the balanced scorecard in evaluating the board performance is distinguished from other evaluation methods in that it defines responsibilities and objectives of the board clearly, allows the board members to realize and understand their responsibilities easier and better, provides objective measures that can be quantified significantly, facilitates the periodic evaluation of the board performance through specific and clear standards and offers a possibility of an objective comparison of the board performance through different periods.

### 3.3 Questionnaire

Data were collected using a questionnaire list ([Appendix](#)) and personal interviews when distributing lists to explain the research problem and purpose. A questionnaire was developed to seek the respondents’ perception of the extent to which the Egyptian manufacturing companies need an effective tool for evaluating the board performance and the extent to which the proposed method is considered as an appropriate tool to evaluate the board performance in the Egyptian manufacturing environment. Respondents’ answers were quantified by a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The respondents were also asked to indicate whether there are differences in the relative importance of the proposed method dimensions and measures based on a Likert scale of 1 (not important at all) to 5 (very important).

Strategic objectives	Performance drivers	Performance measures
Improving environmental performance to preserve the environment	Conditioning production and services systems in line with environmental considerations Conservation of natural resources	Proportion of investments in technology that does not pollute the environment Proportion of investment in technology that saving the consumption of natural resources (water and energy) Number of innovations that saving energy consumption
	Commitment to environmental legislation	Number of litigations resulting from environmental violations Number of warnings due to environmental violations Fines value resulting from environmental violations
Improving social performance to meet the social needs and deal with the social problems.	The need for a suitable working environment for employees	Proportion of investments in activities that meet the social needs of workers (housing, transportation) Proportion of company's share in social insurance Proportion of annual profits distributed to workers
	The need for services that achieve public benefits to the community	Proportion of investments in the industrial security systems Proportion of investment in social activities to serve the community (schools, hospitals, parks, libraries and donations to charities) Number of new jobs which provided by the company
	The need for products and services that meet the social needs of customers	Number of disabled people who have been appointed in the company Proportion of sales from environmentally friendly products Warranty period Response rate to customer complaints

**Table II.**  
Strategic objectives, performance drivers and performance measures of the environmental and social dimension

### 3.4 Population

The target population for the purpose of this study is the manufacturing companies listed in the Egyptian stock exchange. The following two criteria were applied for a company selection. *First*, the companies that have been selected are the manufacturing companies, because of their large impact on the society and the environment in which they operate. Further, the use of the performance measures is expected to be more diverse and extensive in the manufacturing industries as compared to other types of industries (Jusoh and Parnell, 2008, p. 11). *Second*, the companies that have been selected should be listed in the Egyptian stock exchange, because these companies are committed to apply corporate governance standards which required the board performance evaluation. The companies were randomly selected, and in total, 36 manufacturing companies (12 state-owned companies and 24 private companies) have been surveyed. These companies selected to represent nine industrial sectors, namely, the pharmaceutical industry, textile industry, petrochemical industry, iron and steel industry, printing and packaging industry, oils and detergents industry, chemicals and plastics industry, food industry and construction and building materials industry.

The researchers personally handed the list to three samples, the first sample is the board members in the Egyptian manufacturing companies as they represent the party who will be evaluated using the proposed method. The second sample consisted of managers in different departments in the Egyptian manufacturing companies (financial managers, sales and marketing managers, purchasing managers, planning and follow-up managers), as they are responsible for implementing the policies and the strategies of the board, responsible for the company's performance with the board and provide the necessary information to calculate performance measures. The third sample consisted of shareholders who were asked as a key stakeholder in the company and any new tool will affect their interests. There was difficulty in accessing this sample, so it was replaced by a group of financial analysts of the manufacturing companies who are experienced in providing a financial and an investment advice to the investors.

The researchers received 34 responses from the board members (75.5 per cent of the final sample), and only three could not be used. Therefore, 31 responses were received with a usable response rate of 91 per cent. They received 62 responses from the managers (77.5 per cent of the final sample), and only 10 could not be used. Therefore, 52 responses were received with a usable response rate of 84 per cent. Finally, 38 responses were received from the financial analysts (84 per cent of the final sample), and only 5 could not be used. Therefore, 33 responses were received with a usable response rate of 87 per cent.

### 3.5 Analysis

Because of the nature of the data that have been obtained, which consisted in the ordinal data format (e.g. strongly agree, agree, neutral, disagree and strongly disagree), the researcher relied on nonparametric tests which do not require data to follow a normal distribution (Watson *et al.*, 1990; Kohler, 1994).

The one-sample Wilcoxon test is used to estimate the population median and compare it to a target or reference value. It is a nonparametric test that does not require the data to be selected from a normally distributed population. This test was used to determine the expected median value and  $p$ -value to test the approval degree on the questions of the questionnaire list. The data of the study drawn from the population are unbiased, ordinal and their distribution is symmetric about a median. The null hypothesis here is of the form:

$H0a.$   $m \leq m_0$ , where  $m_0$  is the specific value of population median that we wish to test ( $m_0 = 3$ ).

This is against the alternative hypothesis:

$H1a.$   $m > m_0$ .

The Kruskal–Wallis test was used to test the differences among the three samples. The Kruskal–Wallis test is a nonparametric alternative that is used to compare medians among more than two groups (Niewenhuis, 2009). It does not require the data to be normal, but instead uses the rank of the data values instead of the actual data values for the analysis. The dependent variable of the study is measured at the ordinal level and consisted of more than two independent groups. We have independent observations, and the distributions in each group have the same shape. The null hypothesis here is of the form:

$H0b.$  Medians of all the groups are identical.

This is against the alternative hypothesis:

$H1b.$  At least one group has a different median.

#### 4. Results and discussion

In this section, we will present a detailed analysis and discussion of the results of the exploratory study to test the need and relevance of the proposed method for the board evaluation process in the Egyptian manufacturing environment, in addition to presenting the results associated with the relative importance of the proposed method dimensions and measures.

##### *4.1 The need for an effective method to evaluate the board*

Wilcoxon signed test results (Table III) showed the perception of individuals in the three samples of the importance of the board performance evaluation in the Egyptian manufacturing environment. The board evaluation considers one of the essential elements that improves the governance in the company, achieves good governance within the company, identifies and corrects the governance problems, an accountability mechanism contributes to build confidence in the company and one of the legal requirements that should be committed by the listed companies in many stock exchanges. The  $p$ -value was less than 0.05 for all these reasons in the three samples. These results indicate that the companies need an effective tool for evaluating the board performance.

The Kruskal–Wallis test results showed that there were no significant differences in the approval degree among the three samples with regard to the need for evaluating the board performance as a basis for achieving good governance, and a mechanism of accountability contributes to build confidence in the companies. The  $p$ -values for these reasons were 0.055 and 0.065, respectively.

##### *4.2 The relevance of the proposed method for evaluation process*

Wilcoxon signed test results (Table IV) showed that the three groups believed that the proposed method is a relevant tool for evaluating board performance in the Egyptian manufacturing environment. It provides performance measures that reflect various responsibilities of the board and assist in evaluating the board performance from different aspects (financial and non-financial, internal and external, short and long term). It provides objective measures that can be quantified, facilitates the regular evaluation of the board through clear and specific criteria and allows the objective comparison of the board performance in different periods and different companies in the same industry. The  $p$ -value was less than 0.05 for these characteristics in the three samples.

The Kruskal–Wallis test results showed that there were no significant differences in the approval degree among the three samples with regard to the important role played by the proposed method in providing performance measures which reflect various responsibilities of the board and evaluating the board performance from different aspects. It also facilitates the regular evaluation of the board through clear and specific criteria. The  $p$ -values for these characteristics were 0.511, 0.058 and 0.061.

##### *4.3 The relative importance of proposed method dimensions*

The Kruskal–Wallis test results showed that the  $p$ -values of financial and stakeholders dimensions were 0.379 and 0.368, respectively, which means that there are no significant differences in the relative importance of these dimensions among the three samples. The  $p$ -values for internal processes, learning and growth and environmental and social dimensions were 0.003, 0.04 and 0.001, respectively, which means that there are significant differences in the relative importance of these dimensions among the three samples. Table V shows the Kruskal–Wallis test results and the relative importance of these five dimensions in the three samples using the mean.

Reasons	Board members		Managers		Financial analysts		Kruskal–Wallis test ( $p$ -value)
	Median	Wilcoxon signed test ( $p$ -value)	Median	Wilcoxon signed test ( $p$ -value)	Median	Wilcoxon signed test ( $p$ -value)	
Board performance evaluation considers one of the essential elements to improve governance in the company	4.00	0.00	5.00	0.00	4.00	0.00	0.00
Board performance evaluation achieves good governance within the company	4.00	0.00	5.00	0.00	4.00	0.00	0.055
Board performance evaluation helps in identifying and correcting governance problems	4.00	0.00	4.00	0.00	4.00	0.00	0.00
Board performance evaluation considers an accountability mechanism contribute to building confidence in the company	4.00	0.00	5.00	0.00	4.00	0.00	0.065
Board performance evaluation considers one of the legal requirements which must commitment by the listed companies in many stock exchanges	4.00	0.00	5.00	0.00	4.00	0.00	0.00

**Table III.** Statistical test results associated with the need for an effective method to evaluate the board performance

**Table IV.**  
Statistical test results associated with relevance of the proposed method for evaluation process

Characteristics	Board members		Managers		Financial analysts		Kruskal–Wallis test ( <i>p</i> -value)
	Median	Wilcoxon signed test ( <i>p</i> -value)	Median	Wilcoxon signed test ( <i>p</i> -value)	Median	Wilcoxon signed test ( <i>p</i> -value)	
It provides performance measures reflect various responsibilities of the board	4.00	0.00	4.00	0.00	4.00	0.00	0.511
It assists in evaluating board performance from different aspects	4.00	0.00	5.00	0.00	4.00	0.00	0.058
It provides objective measures can be quantified	4.00	0.00	4.00	0.00	4.00	0.00	0.022
It facilitates the regular evaluation of the board through clear and specific criteria	4.00	0.00	4.00	0.00	4.00	0.00	0.061
It allows the objective comparison of the board performance in different periods	4.00	0.00	5.00	0.00	4.00	0.00	0.00
It allows the possibility of making an objective comparison of the board performance of the companies in the same industry	4.00	0.00	4.00	0.00	4.00	0.00	0.010

It is clear from this table that the financial dimension was ranking first in the three samples. This result was due to the fact that the financial dimension takes the higher degree of importance in performance measurement culture in the Egyptian business environment. This is a result of the ease to calculate financial measures, the availability of financial information and consideration of the essential standards to evaluate the performance in the Egyptian companies. There was a great interest with stakeholders dimension; it was ranking second in all samples. This result indicates that there was no difference in the importance of meeting and achieving needs of stakeholders among the three samples, which means that they understand the important role of this dimension in survival and continuation of the company. Ranking of the rest dimensions was different because of different concerns and interests of each sample, with a note that there is a decline in the importance of environmental and social dimensions within the Egyptian manufacturing environment. The last ranking was given to environmental and social dimension in board members and financial analysts samples. This result was due to the non-appearance of environmental and social issues as a stressful variable on the Egyptian companies, except in recent years. But for the manager sample, the environmental and social dimension took the third ranking, because this dimension focused on the social needs of the employees (Table V).

#### 4.4 The relative importance of the proposed method measures

**4.4.1 Financial measures.** The Kruskal–Wallis test results showed that the  $p$ -value of earning measure was 0.055, which means that there was an agreement among the three samples on the importance of earnings. However, for the other measures, it was less than (0.05), which means that there are differences in degree of the relative importance of these measures among the three samples. This is due to the fact that each group focused on the important measures from their viewpoint which achieve their interests. In an attempt to reach the most important measures of this dimension in the three samples, the measures are ranked as shown in Table VI.

**4.4.2 Stakeholders measures.** The results showed that there were differences in degree of the relative importance of the following measures among the three samples (the  $p$ -value of these measures was less than 0.05): number of ethical and legal violations, level of compliance with governance guidelines, number of voluntary disclosures and evaluation of the quality of external disclosures by stakeholders. These results were due to the difference in perceptions of individuals in the three samples with respect to the role of these measures in achieving stakeholders' satisfaction. In an attempt to reach the most important measures of this dimension in the three samples, the measures are ranked as shown in Table VII.

**4.4.3 Internal processes measures.** The results showed that there were differences in degree of the relative importance of the following measures among the three samples: number of risk audits performed and results, number of board members owning stock, percentage of performance linked to nonfinancial performance, goals and objectives clearly

Dimension	Kruskal-Wallis test ( $p$ -value)	Board members		Managers		Financial analysts	
		Mean	Ranking	Mean	Ranking	Mean	Ranking
Financial	0.379	4.68	1	4.81	1	4.79	1
Stakeholders	0.368	4.55	2	4.22	2	4.18	2
Internal processes	0.003	3.97	4	4.06	5	3.93	4
Learning and growth	0.040	4.06	3	4.17	4	3.94	3
Environmental and social	0.001	3.74	5	4.19	3	3.91	5

**Table V.** Statistical results associated with the proposed method dimensions

defined for CEO and board, number of actions taken based on performance evaluation, number of hours spent on long-term strategic issues and percentage of meeting time allocated to opposing points of view. These results were due to lack of clarity of the role and the importance of calculating these measures, especially for the sample of financial analysts. In an attempt to reach the most important measures of this dimension in the three samples, the measures are ranked as shown in [Table VIII](#).

*4.4.4 Learning and growth measures.* The results showed that there were differences in degree of the relative importance of the following measures among the three samples: the existence of a position description for CEO, interim CEO identified, the percentage of directors “financially literate” and percentage of independent members. These results were due to the difference in the administrative level and the difference in perceptions of individuals of the role of these measures in ensuring a strong succession and leadership of the company. In an attempt to reach the most important measures of this dimension in the three samples, the measures are ranked as shown in [Table IX](#).

*4.4.5 Environmental and social measures.* Test results showed that the  $p$ -value for all measures was less than 0.05, which means that there were significant differences in the relative importance of these measures among the three samples, with the exception of number of litigations measure and fines value resulting from environmental violations measure, where the  $p$ -value for these two measures was greater than 0.05. These results were due to the difference in perceptions of the three samples to the importance of environmental and social aspects, as a result of the differences in their goals and interests. In an attempt to reach the most important measures of this dimension in the three samples, the measures are ranked as shown in [Tables VI-X](#).

Based on the above analysis, we will try to reach a short guide of the performance measures that should be included in the proposed method. We depend on the most important measures (the first three measures in each dimension) from the perspective of the study groups to get a number of measures that do not exceed 25 measures, where each dimension should include from 4 to 7 measures ([Kaplan and Atkinson, 1998](#)). The balanced scorecard should include from 20 to 25 measures ([Kaplan and Norton, 2000](#)). [Table IX](#) provides a summary of the most important measures to be used in evaluating board performance using the proposed method ([Table XI](#)).

## 5. Conclusions

The purpose of the study is to evaluate the sustainable performance of the board of directors using the balanced scorecard approach. In this regard, the need for evaluating board performance was discussed. We conclude that more attention must be given to evaluate

**Table VI.**  
Statistical results  
associated with  
financial dimension  
measures

Measures	Kruskal–Wallis test ( $p$ -value)	Board members		Managers		Financial analysts	
		Mean	Ranking	Mean	Ranking	Mean	Ranking
ROI	0.00	4.61	1	4.73	1	4.27	3
EVA	0.004	4.10	4	4.37	4	3.94	5
Stock price	0.004	4.10	5	3.88	6	4.45	1
Earnings	0.055	4.42	2	4.62	2	4.36	2
Cash flow	0.00	4.35	3	4.48	3	3.97	4
Success of change	0.030	3.87	6	4.06	5	3.70	6

**Note:** Due to difficulty of detailing data, we assume that the importance of these measures is the same regardless of the industry type



Measure	Kruskal–Wallis test ( $p$ -value)	Board members		Managers		Financial analysts	
		Mean	Ranking	Mean	Ranking	Mean	Ranking
Number of ethical/legal violations	0	3.97	3	4.60	1	3.97	3
Level of compliance with governance guidelines	0.002	4.19	1	4.29	3	3.88	4
Number of voluntary disclosures	0.001	3.39	7	3.62	8	3.52	8
Evaluation of quality of external disclosures by stakeholders	0.003	3.19	8	3.81	7	3.55	7
Number of meetings with stakeholders	0.350	3.84	4	3.92	6	3.79	5
Number of complaints	0.254	3.81	5	4.08	5	3.67	6
Number of communication channels with board	0.810	2	2	4.50	2	4.09	1
Stakeholders' satisfaction survey	0.837	4	6	4.15	4	3.97	2

**Note:** Because of difficulty of detailing data, we assume that the importance of these measures is the same regardless of the industry type

**Table VII.** Statistical results associated with stakeholders dimension measures

**Table VIII.**  
Statistical results  
associated with  
internal processes  
dimension measures

Measure	Kruskal–Wallis test ( <i>p</i> -value)	Board members		Managers		Financial analysts	
		Mean	Ranking	Mean	Ranking	Mean	Ranking
Number of risk audits performed and results	0.004	4.03	5	4.33	4	4.00	5
Number of crises and evaluation of response	0.302	4.16	3	4.31	5	4.24	2
Number of board members owning stock	0.027	4.03	4	4.15	6	3.97	7
% of performance linked to nonfinancial performance	0.002	4.26	2	4.40	3	3.97	6
Goals and objectives clearly defined for CEO, board, etc.	0.00	4.32	1	4.67	1	4.18	3
Number of actions taken based on performance evaluation	0.00	3.81	9	4.50	2	4.00	4
Number of visits to the company sites by individual directors	0.667	3.74	10	4.00	9	3.88	13
% of projects accepted by board that met or exceeded projected ROI	0.056	3.97	6	4.15	7	4.27	1
Number of hours spent on long-term strategic issues	0.00	3.39	14	4.00	10	3.97	8
Overall attendance at meeting	0.235	3.58	11	3.85	11	3.91	10
% of meetings without CEO	0.288	3.90	7	4.10	8	3.88	12
Average duration of meetings	0.068	3.48	13	3.65	13	3.91	11
Number of days in advance that material is sent	0.061	3.52	12	3.67	12	3.94	9
% of meeting time allocated to opposing points of view	0.046	3.87	8	3.65	14	3.70	14

**Note:** Because of difficulty of detailing data, we assume that the importance of these measures is the same regardless of the industry type

Measure	Kruskal–Wallis test ( <i>p</i> -value)	Board members		Managers		Financial analysts	
		Mean	Ranking	Mean	Ranking	Mean	Ranking
Existence of a position description for CEO	0.025	4.45	1	4.52	1	4.18	3
Interim CEO identified	0.003	3.77	5	4.19	3	3.94	5
% of directors “financially literate”	0.00	3.84	4	4.48	2	4.24	1
Diversity of board–race and gender (% represented)	0.879	4.10	2	4.13	4	4.18	2
% of independent members	0.005	3.23	7	3.94	7	3.88	6
Number of training programs	0.740	4.03	3	4.04	6	3.97	4
Quality of programs as evaluated by new director	0.053	3.74	6	4.10	5	3.88	7

**Note:** Because of difficulty of detailing data, we assume that the importance of these measures is the same regardless of the industry type

**Table IX.**  
Statistical results associated with learning and growth dimension measures

**Table X.**  
Statistical results  
associated with  
environmental and  
social dimension  
measures

Measures	Kruskal-Wallis test ( <i>p</i> -value)	Board members		Managers		Financial analysts	
		Mean	Ranking	Mean	Ranking	Mean	Ranking
Proportion of investments in technology that does not pollute the environment	0.00	4.48	2	4.15	10	3.94	5
Proportion of in technology that saving consumption of natural resources	0.004	4.58	1	4.48	3	4.15	2
Number of innovations that saving energy consumption	0.002	4.16	4	4.40	5	3.94	4
Number of litigations on the company resulting from environmental violations	0.054	4.13	7	4.21	9	4.12	3
Number of warnings due to environmental violations	0.039	4.06	8	4.02	14	3.94	6
finer value resulting from environmental violations	0.387	4.32	3	4.46	4	4.27	1
Proportion of investments in activities that meet the social needs of workers	0.00	3.61	14	4.35	7	3.84	7
Proportion of company's share in social insurance for workers	0.00	4.16	6	4.63	2	3.67	11
Percentage of annual profits distributed to workers	0.00	3.84	11	4.65	1	3.73	8
Proportion of investments in the industrial security systems	0.00	3.77	12	4.37	6	3.70	10
Proportion of investment in social activities to serve the community	0.00	3.26	16	4.12	11	3.70	9
Number of disabled people who have been appointed in the company	0.005	3.39	15	3.79	16	3.24	16
Number of new jobs, which provided by the company	0.003	3.90	9	3.98	15	3.42	14
Proportion of sales from environmentally friendly products	0.00	3.65	13	4.08	12	3.33	15
warranty period	0.00	3.87	10	4.35	8	3.45	13
Response rate to customer complaints	0.00	4.16	5	4.08	13	3.58	12

**Note:** Because of difficulty of detailing data, we assume that the importance of these measures is the same regardless of the industry type

Dimension	Measures
Financial	ROI Earnings Cash flow Stock price
Stakeholders	Level of compliance with governance guidelines Number of communication channels with board Number of ethical/legal violations Stakeholders' satisfaction survey
Internal processes	Goals and objectives clearly defined for CEO, board, etc. % of performance linked to nonfinancial performance Number of crises and evaluation of response Number of actions taken based on performance evaluation % of projects accepted by board that met or exceeded projected RIO
Learning and growth	Existence of a position description for CEO Diversity of board—race and gender (% represented) Number of training programs % of directors “financially literate” Interim CEO identified
Environmental and social	Proportion of investments in technology that does not pollute the environment Proportion of investment in technology that saving the consumption of natural resources Fines value resulting from environmental violations Percentage of annual profits distributed to workers Proportion of company's share in social insurance for workers Number of litigations on the company resulting from environmental violations

**Table XI.**  
Short guide to the  
measures of the  
proposed method

**Note:** This list is subject to increase or decrease depending on the nature of each company and industry

board performance as a basic element to improve governance and legal requirements which must be committed by the listed companies in many of the world's stock exchanges. It has an important role in improving board and corporate performance. We addressed the previous studies that discussed the basic elements to evaluate the board performance. These studies focused on traditional methods such as interviews and questionnaire. These methods reflect personal efforts by various means, subject to personal judgment, and not providing a comprehensive framework helps in evaluating board performance through objective and specific measures. The researchers focused on the possibility of using the balanced scorecard as a strategic management accounting tool in evaluating the board performance. According to previous studies, the board's balanced scorecard framework consists of four dimensions: financial, stakeholders, internal processes and learning and growth dimension. They expanded the frame of this scorecard by adding a fifth dimension, which is “environmental and social dimension”, to reflect the environmental and social performance of the board to complete the evaluation process to reach the balanced and sustainable performance. The goals, performance drivers and performance measures have been discussed in each dimension.

The findings indicated that the three study groups agreed on the need to evaluate the board performance as a basis for achieving good governance within the company and a mechanism of accountability which contributes to build confidence in the companies. Three

study groups agreed upon the suggestion that the proposed method is considered an effective tool for evaluating the performance of the corporate boards in the Egyptian manufacturing environment. The results also indicate that the three samples agreed on that the proposed method provides measures which reflect the various responsibilities of the corporate board, assists in evaluating board performance from various aspects and facilitates the regular evaluation through clear and specific criteria. The researchers found that there are differences in the relative importance of the most performance measures among the three groups; this result is due to the fact that each group focused on important measures from their viewpoint and that lead to the achievement of their interests. Finally, the study provides a useful tool for evaluating the sustainable performance of the boards and provides a short guide to the most important performance measures to be used in the board evaluation process, with the necessity of taking into account the nature of each company and industry.

### 6. Limitations and future research

Some limitations should be addressed in this research. First, the sampling design cannot be claimed to represent all the Egyptian manufacturing companies. Therefore, survey results restrict generalization. Second, there was a difficulty in accessing a sample of shareholders; this sample was replaced with a group of financial analysts in brokerages. Third, the scope of the exploratory study focuses on manufacturing companies and does not include service companies and financial institutions (banks and insurance companies).

Future research is needed to survey a large sample of manufacturing companies in state-owned and private sectors to increase generalization. More research is required to study the role of strategic management accounting tools in activating corporate governance. We need to study the possibility of applying the proposed method in service companies and financial institutions.

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**Further reading**

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**Personal data**

Name (voluntary): .....

Academic qualification: Bachelor / Diploma of graduate studies / Master / PhD

Current position: .....

- Directing the attention to evaluate the board performance has increased in the recent years for several reasons. Please determine the approval degree on the role of each of the following reasons (mark (√) in front of the appropriate answer):

Reasons	Approval degree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Board performance evaluation considers one of the essential elements to improve the governance in the company.						
Board performance evaluation achieves good governance within the company.						
Board performance evaluation helps in identifying and correcting governance problems.						
Board performance evaluation considers an accountability mechanism contribute to building the confidence in the company.						
Board performance evaluation considers one of the legal requirements which must commitment by the listed companies in many stock exchanges.						
Other reasons						

-We have suggested the use of the balanced scorecard to evaluate the board performance through measures reflect five dimensions. To what extent do you see that the proposed method is characterized by the following characteristics?

Characteristics	Approval degree	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
It provides performance measures reflect various responsibilities of the board.						
It assists in evaluating the board performance from different aspects.						
It provides objective measures can be quantified						
It facilitates the regular evaluation of the board through clear and specific criteria.						
It allows the objective comparison of the board performance in different periods.						
It allows the possibility of making an objective comparison among the board performance of the companies in the same industry.						
Other characteristics						

(continued)

-Please specify degree of the relative importance of the following dimensions:

Importance degree	Very important	Important	Neutral	Not important	Not important at all
Dimension					
Financial dimension					
Stakeholders dimension					
Internal processes dimension					
Learning and growth dimension					
Environmental and social dimension					

-Please specify degree of the relative importance of the following performance measures related to the financial dimension:

Importance degree	Very important	Important	Neutral	Not important	Not important at all
Measures					
ROI					
EVA					
Stock price					
Earnings					
Cash flow					
Success of change					
Other measures					

-Please specify degree of the relative importance of the following performance measures related to the stakeholders dimension:

Importance degree	Very important	Important	Neutral	Not important	Not important at all
Measures					
# of ethical/legal violations					
Level of compliance with governance guidelines					
# of voluntary disclosures					
Evaluation of quality of external disclosures by stakeholders					
# of meetings with stakeholders					
# of complaints					
# of communication channels with board					
Stakeholders' satisfaction survey					
Other measures					

-Please specify degree of the relative importance of the following performance measures related to the internal processes dimension:

Importance degree	Very important	Important	Neutral	Not important	Not important at all
Measures					
# of risk audits performed and results					
# of crises and evaluation of response					
# of board members owning stock					
% of performance linked to non-financial performance					
Goals and objectives clearly defined for CEO, board, etc.					
# of actions taken based on performance evaluation					
# of visits to the company sites by individual directors					
% of projects accepted by board that met or exceeded projected ROI					
# of hours spent on long-term strategic issues					
Overall attendance at meetings					
% of meetings without CEO					
Average duration of meetings					
# of days in advance that material is sent					
% of meeting time allocated to opposing points of view					
Other measures					

(continued)

-Please specify degree of the relative importance of the following performance measures related to the learning and growth dimension:

Importance degree Measures	Very important	Important	Neutral	Not important	Not important at all
Existence of a position description for CEO					
Interim CEO identified					
% of directors "financially literate"					
Diversity of board — race and gender (% represented)					
% of independent members					
# of training programs					
Quality of programs as evaluated by new director					
Other measures					

-Please specify degree of the relative importance of the following performance measures related to the environmental and social dimension:

Importance degree Measures	Very important	Important	Neutral	Not important	Not important at all
Proportion of investments in technology that does not pollute the environment					
Proportion of investment in technology that saving consumption of natural resources					
# of innovations that saving energy consumption					
# of litigations on the company resulting from environmental violations					
# of warnings due to environmental violations					
Fines value resulting from environmental violations					
Proportion of investments in activities that meet the social needs of workers					
Proportion of company's share in social insurance for workers					
Percentage of annual profits distributed to workers					
Proportion of investments in the industrial security systems					
Proportion of investment in social activities to serve the community					
# of disabled people who have been appointed in the company					
# of new jobs which provided by the company					
Proportion of sales from environmentally friendly products					
Warranty period					
Response rate to customer complaints					
Other measures					

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