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Constructing performance measurement indicators to suggested corporate environmental responsibility framework

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ABSTRACT

Leading enterprises worldwide are proactively fulfilling environmental protection. This trend has elicited international attention. The corporate environmental responsibility (CER) framework was constructed based on the strategy these enterprises executed. This conceptual framework precisely determined current international advanced CER content. However, understanding the true intention of businesses that practice environmental management and protection through the CER framework is difficult, thereby making CER performance measurement indicators crucial. However, the lack of active CER performance measurement indicators resulted in the inability to reflect fully the effects of industry situation and business development on the living environment. Hence, this situation signals the urgency to construct CER performance measurement indicators that reflect fully industry situation and social needs. This study aims to address the deficiencies of CER performance measurement indicators in the academic circle, and construct a set of active CER performance measurement indicators that fully reflect the effects of industry situation and business development on the living environment. For this reason, this study employs content analysis method to establish CER performance measurement indicators based on the CER framework. This indicator provides an effective and applied CER performance measurement tool and offers the government with foresighted concepts of environmental protection.

1. Introduction

High economic development and growth are important national development policies of countries around the world. However, such a policy direction causes many countries to focus only on economic construction and development activities and neglect environmental sustainability. Chen et al. (2012) argue that although industrial parks create considerable economic benefits, these structures emit tremendous amounts of pollution and consume significant environmental resources. The environment has lost its original regulatory function because of excessive human pressure. These policies also have caused extreme weather phenomena and environmental disasters. Parmesan (2006) points out that climatic change will threaten global economic development and human living environment. Therefore, regardless of country or industry, corporate environmental performance must be scrutinized by international organizations and the public. Environmental protection is the best economic development strategy. Environmental protection and economic development aim to improve the quality of human life. Thus, economic development should regard environmental protection as its premise. According to the concept of sustainable development, economic development and environmental protection can be parallel and compatible. Sustainable development is an economic policy that seeks to guide society to make proper deployments for environmental protection, consumers, and investors (IAEA, 2005).

Reduction of environmental pollution and improved efficiency of energy utilization are critical; leading firms worldwide are actively fulfilling their environmental protection activities, while social responsibilities have become an international trend (Hsu et al., 2011; Wang et al., 2015). In addition, companies should adopt and implement a corporate social responsibility strategy as early as possible to prevent future negative publicities (Chen et al., 2016). The formulation of industry standards has become an industry competitive strategy that can create higher entry barriers for obtaining excess return and ensure competitive advantage. Environmental protection standards are vital to industry standards and are just and legal (Vastag et al., 1996). For example, the EU passed Waste Electrical and Electronic Equipment

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(WEEE), Restrictions on Hazardous Substances Directive (RoHS), and Directive of Eco-design Requirements of Energy-using Product (EuP) as formal laws in 2003. If electronic products exported to the EU fail to comply with these regulations, the products will be returned or the exporters will be subjected to heavy fines. Therefore, enterprises should completely integrate environmental protection into their competitive strategy rather than be limited to laws and regulations.

Reporting on non-financial information is becoming a continuing trend for most of the world's largest companies. Communication of social and environmental dimensions of the company plays a key role in the sustainable development of organizations, and therefore should be investigated in depth (Bonsón and Bednárová, 2015). In the 1990s, worldwide companies began to issue their social reports. The two main reasons that contribute to this trend can be identified easily. The first one is the increasing pressure from various stakeholders, and the other one is the fact that some companies have realized that reporting their social contribution can benefit them (Gao, 2011). One study applied content analysis to examine the Corporate Social Responsibility (CSR) reports of listed companies in Asian countries; this study reported that 79% of companies showed positive attitude toward undertaking social responsibilities (Gao, 2011). Jain and Winner (2016) propose an international perspective to CSR and sustainability (Sus) discussions by examining CSR/Sus reporting practices of the 200 largest state-owned and private companies in India; they show that while most companies share CSR/Sus information through their websites, they associate different levels of importance to this communication. An increasing number of studies are paying attention to this issue (Bonsón and Bednárová, 2015; Fortanier et al., 2011; Kennedy Nyahunzvi, 2013; Kiliç, 2016). However, CSR reports are written at the enterprise level and people encounter difficulty in understanding the true intention of businesses practicing environmental management and protection. Thus, CER performance measurement indicators are crucial. The World Economic Forum developed environmental performance indicators from the Global Reporting Initiative (GRI; www.globalreporting.org/Pages/default.aspx) and the Environmental Sustainability Index (ESI; www.yale.edu/esi). In Taiwan, the content of measurement reflects the perceptions of environmental groups instead of perceptions of firms. International indicators are not adjusted accordingly despite differences in economic development and directions among countries. A single foreign indicator may inaccurately measure the performance of a country. Therefore, according to the content of the CER framework, the present study establishes CER performance measurement indicators that fully reflect the effects of industry situation and business development on the living environment.

The CER framework developed by Yu and Chen (2014) was constructed based on the strategy that enterprises executed. This conceptual framework has precisely determined the current international advanced CER content that includes three primary dimensions and seven secondary dimensions. Nevertheless, understanding the true intention of businesses practicing environmental protection and management through the CER framework remains difficult (Yu et al., 2016). Therefore, the present study constructs a set of CER performance measurement indicators based on the CER framework developed by Yu and Chen (2014). Firms and the public could then develop an easy-to-use measurement tool to understand the true intention of businesses that practice environmental management and protection. The main contribution of this study is the construction of a set of CER performance measurement indicators that fully reflect the effects of the industry situation and business development on the living environment. Firms and the public are provided with an easy-to-use measurement tool than can help them understand the true intention of businesses that practice environmental management and protection.

The study aims to (1) address the deficiencies of CER performance measurement indicators in the academic circle; (2) construct a set of active CER performance measurement indicators that fully reflect the effects of industry situation and business development on the living environment; (3) provide businesses and the public with an easy-to-use CER performance measurement tool; and (4) provide government units with a prospective concept of environmental protection as a basic structure to normalize CER.

2. Literature review

2.1. Institutional perspectives on responsibility regulations

Institutional theory is used to explain why businesses undertake environmental management (King and Lenox, 2000; Sharma, 2000). According to institutional theory, no organization can be free from external environmental pressure. An organization that faces external pressure and fails to adjust properly will endanger its own survival (Selznick, 1949). Meyer and Rowan (1977), DiMaggio and Powell (1983) postulate that an organization is an open system, i.e., the environment is the external system of all organizations. Hence, an interactive “input–transform-output” relationship exists between the organization and external environment. External environmental factors include cultural, science and technology, educational, political, legal, natural resource, demographic features, social environment in the regular social environment and customer, supplier, competitor, socio-political, and technology factors in the special task environment. These factors affect the environment in various degrees and are the sources of momentum in system change and adjustment. Thus, institutional factors play an important external environmental factor (pressure) in this cycle.

Open system theory stresses that an organization is strongly influenced by the external environment. Institutional theory claims that humans and organizations are rational. Through faith and unified goals, an organization may survive and grow under such complicated systems and regulations. Therefore, an organization follows the steps of environmental regulation changes and makes proper adjustment to synchronize with the external environment. Institutional theory believes that when an organization faces external environmental pressure, the company must adjust its organizational structure or adopt necessary adjustment activities to meet environmental demand (Scott, 1987). The institutionalization process will induce the external environment to transfuse business with its own value and concepts when the relationship between corporations and the environment is viewed from the institutional theory perspective. When a firm faces environmental demand, the company is inclined to seek the legitimacy the institutional environment identifies. Therefore, business will make proper adjustments upon the demand of the institutional environment (Scott, 1992). Moreover, CER is generally considered part of CSR; thus, CER is defined as “the broad array of strategies and operating practices that a company develops in its efforts to deal with and create relationships with its numerous stakeholders and the natural environment (Surroca et al., 2010).”

People encounter difficulty in understanding the true intention of businesses that practice environmental management and protection. Kennedy Nyahunzvi (2013) suggests that future studies can examine actual CSR practices adopted by practical sector. According to Michelon et al. (2015), evidence suggests CSR reporting practices are symbolic rather than substantive. Thus, an easy-to-use measurement tool is crucial to understand the true intention of businesses that practice environmental management and protection.

2.2. Corporate environmental responsibility

Environmental management issues have attracted worldwide attention. The International Standard Organization (ISO) raised a series of environmental protection certificates (e.g., ISO 14001), and the United Nations Framework Convention on Climate Change (UNFCCC) continuously held conferences to solve the problem of global warming. Maxwell et al. (1997) believe that enterprises should adopt positive and active corporate environmental strategies. These strategies could generate competitive advantages, such as cost reduction, quality improvement, enhancement of corporate image, and development of new markets. Chen