

ACHIEVING ENVIRONMENTAL SUSTAINABILITY IN MALAYSIAN CONSTRUCTION INDUSTRY THROUGH INSTITUTIONAL PRESSURE

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Abstract

Construction firms around the world are under pressure to minimize consumption of resource, avoid destruction of natural environment, prioritize clients' call for environmentally responsive projects, and be upbeat in dealing with their firm development so as to preserve both the natural and built environment. Construction firms that comply with institutional requirements regarding environmental care are well-positioned to recognize the modifications in their clients' choices regarding environmental sustainability and therefore, take a swift action towards fulfilling the environmental sustainability agenda. The aim of this study is to conceptualize the effect of institutional pressure on environmental sustainability adoption by construction firms in Malaysia using institutional theory to reinforce these relationships. The extant literature has highlighted environmental sustainability as one of the most important interests of most 21st century firms because their compliance with institutional regulations and the ecological environment that supports all life are intimately connected. Although it is anticipated that the outcomes of this review could be used to create policies that could improve environmental sustainability adoption among these firms, this study did not take into consideration other factors that may also explain the environmental sustainability adoption. It is expected that this study's findings could assist in developing policies to boost the rate of environmental sustainability implementation among firms. Again, it could also be useful for policy makers and other players in the construction sector.

Keywords-- Environmental Sustainability, coercive, mimetic, normative, construction industry

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INTRODUCTION

Sustainability has come out to be a crucial topic in all realms of life. There have many articles embracing sustainable development tenets and the need for organizations to engage in sustainability practices (Geissdoerfer et al., 2017; Baumgartner & Rauter, 2017). Over the past few years, many businesses have instituted or modified strategies, products and/or processes to address pollution, reduce resource utilization, and enhance public and stakeholder relationships (Adamset al., 2016; Gázquez-Abadet al., 2015). Some scholars argue that these modifications are inadequate as they are only inconsequential and not encouraging to the development of sustainable businesses and industries (Ceschin, & Gaziulusoy, 2016; Harper, Harper, & Snowden, 2017). They claim that in order to completely retort to environmental and social challenges, firms will have to comply with pressure from institutions (like government agencies) and demand from clients and environmentalist to be able achieve environmental sustainability in their construction projects (Adeleke, Bahaudin, & Kamaruddeen, 2015; Welford, 2016). The main concept is that firms will have to abide by environmental regulations and cope with the pressure from clients and environmentalist as well when moving towards sustainability (Severoet al., 2015; Welford, 2016; Adeleke et al., 2019a).

The role of environmental sustainability in confronting the complex problems of construction industry and the environment has become an ever more pressing challenge, mostly with the aim of restoring balance between the natural and the built environment, as both realms are highly interrelated (Kibert, 2016; Ofori, 2015; Adeleke et al., 2018; Bamgbade et al., 2018). As a result of the clear benefits that are connected with

environmental sustainability within the construction industry, and bearing in mind the importance and magnitude of the industry to economic growth of many nations and its huge influence on environmental destruction, stakeholders in construction industry, public, governments, and their agencies are increasingly fit in the concept into project delivery to improve the industry's overall efficacy and performance (Ahn et al., 2013). This important concept will also enhance the industries' reputation.

Studies focusing on environmental sustainability in the construction industry frequently embrace an institutional theory on why firms implement such environmental initiatives (Butler, 2011; Wu et al., 2012; Bamgbade, Kamaruddeen, & Nawi, 2017; Johnsen, Miemczyk, & Howard, 2017). Institutional theory, with its emphasis on conformity offers an appropriate means for researching environmental sustainability in the construction industry (DiMaggio and Powell, 1983), and it been used to frame our study on the implementation and practices of environmental sustainability strategies in the construction industry.

This review contributes to the body of knowledge by focusing on institutional pressure (like environmental regulations, inter-firm collaborations) that stimulate environmental sustainability in the construction industry. The study analyzes environmental regulation and collaboration in an environmental sustainability context from the institutional theory perspective (Table 1). Section 2 of this review will outline the methodology used in this article which involved systematic review process as suggested by Adeleke, Bahaudin, & Kamaruddeen, (2015); McDonagh et al., (2000); Taofeeq, Adeleke & Lee (2019); Bamgbade et al. (2016).

Section 3 will outline the main argument of institutional theory and highlight how it explains the need for environmental regulations and inter-firm partnership, the influence of institutions and its performance implications on the environment and the construction industry as well. Section 4 to 6 will highlight

the summary of the articles reviewed in this study, emphasizing the insights from institutional theory to environmental regulations and inter-firm environmental partnership and its environmental sustainability benefits. The last section concludes and presents suggestions for future exploration.

Table 1. Summary of articles reviewed in this study.

Authors	Theme	Theory	Sustainability goals	Method	Empirical Context
Delmas (2002)	An institutional perspective to the diffusion of environmental management standards	Institutional theory	Achieve environmental and economic performance	Quantitative & interview data	ISO 14001 certified firms in the US and Europe
Delmas & Toffel, (2004)	Stakeholders and environmental management practices: an institutional framework.	Institutional and stakeholder theories	Achieve environmental performance	Survey data/secondary data	Manufacturing industry
Butler (2011)	Compliance with institutional imperatives on environmental sustainability	Organizational and institutional theories	environmental sustainability	case studies	IT manufacturers
Berrone et al., (2013).	Necessity as the mother of green inventions: institutional pressures and environmental innovations.	Institutional theory	Achieve environmental performance	Quantitative/survey	Publicly traded firms from polluting industries in the United States
Zhu & Sarkis (2007)	The moderating effects of institutional pressures on emergent green supply chain practices and performance	Institutional theory	Achieve environmental performance	Quantitative/survey	Chinese manufacturing industry
Saeed et al., (2018)	Institutional Pressures, Green Supply Chain Management Practices on Environmental and Economic Performance	Institutional theory and Resource Dependence Theory (RDT)	Achieve environmental and economic sustainability	Quantitative/survey	Pakistan manufacturing Industry
Roxas, & Coetzer (2012)	Institutional Environment, Managerial Attitudes and Environmental Sustainability Orientation	Institutional theory	Achieve environmental sustainability	Quantitative/survey data	SMEs Manufacturing in Philippine
Kunapatarawong & Martínez-Ros (2013)	Influences of institutional pressures on corporate social responsibility attitude and outcomes	Institutional theory	Achieve social sustainability	Quantitative/survey data	Multinational companies based in Thailand
Kauppi & Hannibal (2017)	Institutional pressures and environmental sustainability assessment in supply chains	Institutional theory	Achieve social sustainability	Qualitative/survey	Supply chain management
Zhu et al., (2015)	A Comparison of Regulatory Awareness and Green Supply Chain Management Practices	Institutional theory	Achieve environmental sustainability	Quantitative/survey data	SMEs Manufacturer in Japan and China

Khor et al., (2016)	Reverse logistics in Malaysia: The Contingent role of institutional pressure	Institutional theory and Resource-based theory	Achieve environmental sustainability	Quantitative/survey data	Malaysian Electronic Equipment Manufacturing companies
Phan & Baird (2015)	The comprehensiveness of environmental management systems: The influence of institutional pressures and the impact on environmental performance	Institutional theory	Achieve environmental sustainability	Quantitative/survey data	Australian organizations across various industries.
López-Gamero et al., (2010)	The potential of environmental regulation to change managerial perception, environmental management, competitiveness and financial performance	Institutional theory and Resource-based theory	Achieve environmental and economic performance	Quantitative/survey data	Firms affected by the Integrated Pollution Prevention and Control (IPPC law) in Spain

METHODOLOGY

To achieve the study objectives, a systematic review was done to provide support for the synthesis. The overall systematic review process suggested by Khan et al. (2003); McDonagh et al. (2000); and Bamgbade et al. (2016), is already operationalized. In starting a review, the research questions were unambiguously referred and detailed order. In the first step (step 1), the selection the sources of data, thorough and broad search from the appropriate database and academic journal were carried out (Adeleke, Bahaudin, & Kamaruddeen, 2018; Khan et al., 2003). Therefore, to gain as many related citations, journals, the right domain of study was identified and selected (Kitchenham, 2004). Furthermore, step 2 involved a thorough execution of a preliminary search with the use of keywords within the defined domain of titles, keywords, and abstracts. These search keywords were identified and keyed into the selected journal databases (Kitchenham, 2004; Lu et al., 2014). The searches were thorough without any language constraints, and study selection benchmarks stream directly from the review questions and specified in advance and reasons for inclusion and exclusion were clearly stated (Taofeeq, Adeleke, & Lee 2020; Chung, Adeleke, & Ajibike, 2020; Khan et al., 2003). As suggested by Kitchenham (2004) and Ke et al. (2009) a limited parameter search was carried out to guarantee consistency. Additionally, the third step (step 3), which involved evaluating the quality of the research in order to ensure academic rigour (Khan et al., 2003). In other words, this means the articles acquired for analysis and synthesis were subjected to a more refined quality assessment for adequate scrutiny. These articles were thoroughly sorted from the initial search to ensure they are of good qualities. Justifiably, the preliminary search performed in second step yielded a wide-ranging of themes and mainstreams of articles. Consequently, a visual assessment of the contents of those articles were carried out.

Furthermore, the last step involved summarizing the data. In his case, a thorough review was done to analyze and synthesize the remaining filtered articles, with more focus on the articles that are only related to topics of interest. This led to the extraction of articles that aligned with scope and background of the study (Taofeeq, Adeleke, & Hassan, 2019; Samsudin, Adeleke, & Ajibike, 2020; Kitchenham, 2004; Bamgbade et al., 2019c). Then, the data were condensed and synthesized in the form of table by characteristics, quality and effects of study.

INSTITUTIONAL THEORY

The institutional theory focuses on the fundamental issue on why organizations in the field have a propensity to act in the same way (Alvesson & Spicer, 2019). Institutions have been recognized as “regulative, normative and cognitive structures and activities that provide constancy and value for social behavior” (DiMaggio and Powell, 1983; Alvesson & Spicer, 2019). Examples of which are regulations, laws, social and professional norms, customs, culture and ethics. In the field of environmental sustainability, it has been proven that the institutions can wield a limiting impact over organizations, called isomorphism, which influences organizations in the same geographical location (or in an unimportant context, e.g.: an industrial outlet or a market section) to look like other organizations that confront a similar set of environmental circumstances or influences (Alvesson & Spicer, 2019).

In accordance with this theory, institutions wield three types of isomorphic (similar) pressures on firms: coercive, normative and mimetic (Cormier & Magnan, 2017; Alvesson & Spicer, 2019). Coercive isomorphism describes the pressures from individuals with resources upon which an organization relies upon. Normative isomorphism, on the other hand, refers to the professional practices and guidelines put in place by learning and training procedures, professional associations and the association of employees among organizations (Alvesson & Spicer, 2019; DiMaggio, 1988). Mimetic isomorphism is the duplicating or imitation of other accomplished firms when a firm is unsure on what to do. All these pressures trigger similar behaviours in organizations because they intend to attain acceptability from external agencies. While there is substantial agreement in the institutional theory literature, yet, there are some exceptions. For instance, Cormier & Magnan (2017) discovered not much facts supporting the pressures wielded by the institutional authority to attain legality by the organizations, while Alvesson & Spicer (2019) contend that the middle-status firms of a certain market who feel the necessity to act legally, high-status firms have the reputation for capital to stray from the institutional pressure, while low-status firms will need to do whatever it takes to manage to survive, regardless if it is legitimate or not.

While numerous researchers have examined the connection concerning institutional pressures and practical environmental tactics, few have studied the linkage between pressures and the

efficacy of the environmental tactics that are implemented by firms to advance their plans in retort to the various categories of pressures. For instance, Berrone et al. (2013) examined if more normative pressures make environmentally friendly invention more appealing for firms. The hypothesis was validated, and the assertiveness of this relationship was even higher in the case of firms with high pollution. On the other hand, Delmas (2002) examined the disparity in the figure of ISO14001 certifications (adjudged to be an indicator of firm invention in the field of environmental sustainability) among nations. The author noticed how a specific institutional structure can influence the cost and the supposed advantages of applying an environmental management system requirement at the organizational level, which invariably describes the variations in the implementation among nations. Also, in the study carried out by Phan and Baird (2015), a beneficial relationship was observed between institutional pressures and inclusiveness, emphasizing how a more inclusive environmental management system has a greater accomplishment, for instance, in terms of stimulating high-tech innovation. Lastly, a study by Marano and Kostova (2016) on how the institutional elements of nations affect the adoption of corporate social responsibility practices by international businesses. They noticed that institutional pressures are much more effective when they come from nations where the business is economically supported or when they come from leading nations in the area of corporate social responsibility.

ENVIRONMENTAL SUSTAINABILITY

To investigate how institutional pressure influence environmental sustainability principles, there is a need to first examine and delve into the concept of environmental sustainability. While environmental sustainability has been getting much awareness in current organizational and management studies, there are variations in the studies about its adoption within construction organizations. Therefore, we sketch out how the ideas of environmental sustainability and institutional pressure share resemblances across different perspectives and provide a theoretical groundwork for a more comprehensive study on sustainability-related institutional regulations.

Environmental sustainability is aimed at reducing damaging environmental influences and make the construction projects more sustainable (Bamgbade et al., 2019; Abidin, 2009 and Akadiri et al., 2012). This concept became important thanks to the construction's destructive effects, such as various kinds of environmental pollution, resource exhaustion and biodiversity loss on a worldwide scale (Goudie, 2018; Ofori et al., 2000). And there are numerous well-known issues under environmental sustainability necessitating analysis of the influences of construction industry on the immediate environment to be seen from the "genesis to revelation" standpoint (Kibert, 2016; Ofori et al., 2000). The construction firms are required to create a healthy and non-toxic environment by utilizing less renewable and nonrenewable materials. Ultimately, an eco-friendly project is capable of accomplishing the goals of environmental sustainability as it will enhance a safe and healthy environment, energy efficiency, the use of environmentally-friendly raw material, in addition to achieving eco-friendly clients (Clarke et al., 1994).

Environmental sustainability in construction includes mining of resources, which firms have little or no influence upon, although it can be discouraged by requesting less finite resources, more recycled materials, and less waste generated in construction processes, thereby leading to increased competition to create more eco-efficient projects (Bamgbade et al., 2019; Ofori et al., 2000; Darwish, 2014). Moving and adapting to reuse in construction is a movement that has gained more attention

from many scholars (Goudie, 2018; Kibert, 2016; Kohler & Hassler, 2012; Gallant & Blicke, 2005), as this encourages the main drivers of environmental sustainability in terms of reducing resource consumption, energy use in transporting products, thereby reducing pollution and preserves biodiversity.

The existing literature ((Bamgbade et al., 2019; Abidin, 2009 and Akadiri et al., 2012; Kibert, 2016; Tan et al., 2011; Yuan, 2013) has established how construction projects devour vast number of certain constituents of non-renewable resources such as energy, land, water, and materials, resulting in serious changes to ecological structure of the natural environment (Owusu, & Asumadu-Sarkodie, 2016; Fuertes, 2013). These consumptions involve the energy needed to maintain the existing stock (operational energy consumption), which is far greater than their embodied energy (Sev, 2009). Therefore, the construction firms need to contemplate resource management as a crucial management tool to achieve the 3R's of reduce, reuse, and recycle of the non-renewable resources (Figure 1).

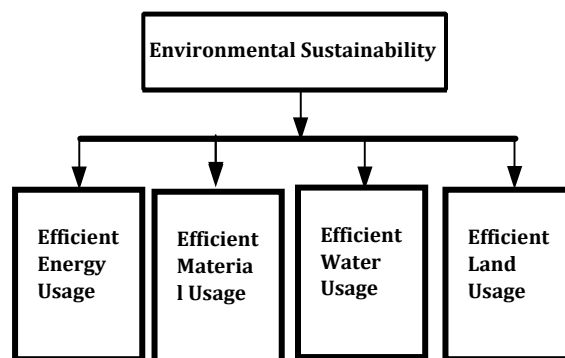


Figure 1. Strategies for Achieving Environmental Sustainability in Manufacturing Industries. (Sev, 2009)

In construction projects, contribution of buildings to total environmental predicament ranges between 12.42% of the eight major environmental stressor categories: use of raw materials (30%), energy (42%) water (25%) and land (12%) and pollution emission such as atmospheric emissions (40%), water effluents (20%) solid waste (25%) and other releases (13%) (Tan, et al., 2015; Michael, Gregoriou, & Kalogirou, 2018). According to Wong, & Baldwin, (2106); Nejat, et al., (2015) and Cao, Dai, & Liu, (2016); Galvin, (2015), buildings and building construction services owns up to 66% of total United Kingdom's energy consumption. A related level of energy utilization in the USA (54%) was quoted by International Energy Agency (2013). The agency also reported that the US housing sector is the highest consuming sector. Dadhich et al. (2015) estimated that in the United Kingdom, the construction industry utilizes about 6 tonnes of building materials every year for every member of the population. In Malaysia, the construction industry is also characterized by high waste and low recycling contributing to a rapid depletion of landfills, increasing environmental pollution and negatively impacting on living conditions of Malaysians (Mei, 2017; Omer, & Adeleke, 2019; Ghisellini, Ripa, & Ulgiati, 2018; Taofeeg, & Adeleke, 2019)

The environmental effect of construction projects have been dealt with by disposing pollutants in less harmful or less obvious means (Enshassi, Kochendoerfer, & Rizq, 2014; UNEP, 2004). Motivated to some extent by strict environmental regulations, construction industries have used a variety of control and treatment procedures to minimize the magnitude of wastes and pollutants. These days, its efforts to enhance environmental performance have moved towards thorough in terms of

developments and incorporated environmental approaches and management systems, and construction firms have also started to accept greater environmental responsibilities through their value chains.

THE CONCEPT OF INSTITUTIONAL PRESSURE

Institutional theory is useful in this study to provide more understanding of the link between institutional disposition and environmental sustainability. Firms are constrained by the legality stretched by institutional players and consequently might embark on environmental protection initiatives in order to be in conformity with norms, rules, and regulations established by external and internal pressures. Jennings & Zandbergen (1995) are amongst the first researchers to investigate sustainability practices from the viewpoint of institutional theory. There are numerous streams of institutional theory as observed by Scott (1978), and the focus of this study is on different ways in which institutional rudiments are seen as describing the reality and tenacity of certain organizational forms, which dated back to the study of Meyer and Rowan (1977). This study also builds on the works of DiMaggio and Powell (1983) on institutional pressures triggering isomorphism in organizational structures. Various studies highlight the leading role of institutional pressure in spreading organizational practices; the most common of which concentrates on the three institutional pressures –coercive, mimetic and normative. The institutional theory related study within the construction industry often centered on the effects of the implementation of practices instead of how some practices initially come to be seen as rational or on the strategies of social movements (Kauppi, & Hannibal, 2017; Kauppi, 2013; Burchell and Cook, 2013).

Bearing in mind the procedural isomorphism, Kauppi, & Hannibal (2017) utilise institutional theory to propose that the introduction of coercive pressure meaningfully encourages the dissemination of environmental sustainability practices, mostly among organizations that have applied such practices in response to legislative guidelines. Zhu et al. (2008) revealed that environmental management guidelines embraced by organizations across a number of businesses are influenced by isomorphism. In general, the level of influence on the environment exerted by institutions also affects commitment to extracting the 'cost of goods sold' from returns. Regulatory pressure is an external factor that is considerably linked with the implementation and use of environmental sustainability initiatives (Chan and Fang, 2007; Adeleke et al., 2019b; Huang et al., 2015 Adeleke, Nasidi, & Bamgbade, 2016). For example, Huang et al. (2015) study hints that the threat of compliance failure is a major expenditure that results from a breach of legal sanctions. Other study on environmental sustainability indicates that regulatory pressure is a major driver of environmental commitment (Huang et al., 2015; Darnall et al., 2008).

Normative pressures affect firm domains instituting joint management on how the field and/or profession operates (Kauppi & Hannibal, 2017). Normative pressure correlates with the logic of suitability (Lenz, 2017); trade unions, professional organizations, and accreditation bodies are normative institutions, as they establish rules and regulations that are perceived as suitable (Lenz, 2017). Association within industry strive to stimulate an industry's shared reputation and professional associations can trigger same guidelines and templates to flow across organizations (Kauppi & Hannibal, 2017). Kauppi & Hannibal (2017) further suggest that, participation in associations will result in an organization to look like those in its field of operation. It thus follows that normative pressures are a natural match for environmental sustainability measurement initiatives to coerce firms to adopt certain guidelines.

Pressure from normative isomorphism can also be wielded through prescribed training (Kezar, & Bernstein-Sierra, 2019). Training received by employees is anticipated to influence the practices they adopt (Lenz, 2017). With reference to environmental sustainability, construction firms could make an effort to propagate the norms of the ideology by getting involved in a partnership with universities and colleges offering construction management and building-related courses in their curricula (Ravetz, 2016). For construction management, it is projected that those evaluating environmental sustainability will wield normative pressure on organizations to adopt environmentally sustainable practices in their project's implementation. They can possibly introduce environmental sustainability as a standard by integrating diligently with the industry and the education sector (Ravetz, 2016).

Mimetic pressure is a reaction to indecision; when there is no clear-cut policy, it can be all right to mimic others' actions (Kauppi & Hannibal, 2017). In imitating another firm, targets for imitating are usually selected by organizational qualities, outcomes or frequencies of incidence (Kauppi & Hannibal, 2017). Imitating can occur via direct contacts or by selecting firms with physical resemblance despite no direct ties (Kezar, & Bernstein-Sierra, 2019). Within environmental sustainability studies, it has been found that industry associates have a considerable influence on a firm's environmental policy (Ravetz, 2016). Firms that belong to the same marketing network can imitate the forms and processes of other networks against which they benchmark (Kauppi & Hannibal, 2017).

INSTITUTIONAL PRESSURE AND ENVIRONMENTAL SUSTAINABILITY: THE NEXUS

As emphasized by DiMaggio & Powell (1983), coercive pressures stem from political influence and a legality problem. Coercive pressures allude to government demands for businesses to conform with environmental laws and regulations or to partake in environmental management programmes and they are the most obvious external pressures of the organization (Daddi et al., 2016 Roxas, & Coetzer, 2012; (Zhu & Sarkis, 2007; López-Gamero, Molina-Azorín, & Claver-Cortés, 2010). Previous research observed that coercive pressures have a considerable effect on the organization's environmental behaviors (Saeed et al., 2018; Li, 2014; Daddi et al., 2016).

Firms take part in environmental programmes to obtain benefits or to forestall being outlawed/fined as a result of nonconformity with certain government regulations (Saeed et al., 2018). Regulatory institutions can compel them to abide by institutional requirements concerning environmental sustainability through command and control (mandatory regulations) instruments and economic incentive instruments (voluntary programmes that allow firms to obtain subsidies or other concessions) (Saeed et al., 2018; Li, 2014; Daddi et al., 2016 López-Gamero, Molina-Azorín, & Claver-Cortés, 2010;).

In the construction perspective, a firm will try to comply with rules and regulations with the aim of legitimization. In a bid to reduce the negative effects of construction activities on the environmental, regulatory institutions engage in different strategies including regulation, information, persuasion, and incentives (Daddi et al., 2016). Given that sustainability standards are specified in the certification programmes which imply the adoption of green practices, in order to qualify, the regulatory institutions compel participants to perform the required practices (Daddi et al., 2016). It is worth noting that, in developing countries where government institutions are not strong enough, there are inadequate political resolve in stringent regulatory compliance. The actions of the Malaysian government to emphasize environmental concerns through visions,

investments, guidelines, mandates, penalties, and awards indicate its seriousness in addressing environmental issues. They also symbolize the government's expectation of genuine and accountable environmental commitments by organizations.

CONCLUSION AND FUTURE RESEARCH

The key input of this review is to conceptualize the effect of Institutional pressure (coercive, mimetic and normative) on environmental sustainability adoption by construction firms within Peninsular Malaysia. It was argued that these factors, if given more concerns by Construction Industry Development Board and other relevant agencies of the Malaysian government to ensure higher compliance with the environmental regulations of the country. By implication, if the government could apply the "carrot and stick" approach in its implementation approach, construction firms as well as other industries that make up the economy will be more than willing to adopt environmental sustainability strategies in their day to day operations. The outcomes of this review can be used to develop policies to increase the rate of environmental sustainability adoption within the construction industry and by extension to other industry that makes up the economy of the country.

This study has recognized several important barriers and limitations for sustainability-related regulations, including and not limited to the fact that organization were forced to comply to pressure from institutions due to fear of legal sanction resulting from noncompliance. Secondly, the study focused only on big firms. Although, these firms have been observed to be more capable to adopt environmental sustainability than small and Medium Scale Firms (SMEs) who are inhibited due to their size and resource inadequacy. Previous studies have shown that larger firms are mostly compelled by government regulatory requirements to pay attention to sustainability considerations. Nonetheless, environmental sustainability adoption and practices go beyond firm size. It is, to a large extent, a function of the perceived inherent economic benefits.

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