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Influence of Institutional Pressures on the Adoption of Green Initiatives

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ABSTRACT

Environmental issues which have negative impacts on environment, social, and economy, imply a need for sustainability practices. As the concept of sustainability is broad, this study focuses only on the environmental aspect, particularly green practices. It aims to examine the influence of institutional pressures, namely coercive, mimetic, and normative pressures on the adoption of green initiatives, and the extent of green adoption in Malaysian public listed companies (PLCs). A questionnaire survey was conducted on all 921 PLCs in Bursa Malaysia. The data from 120 usable questionnaires were analysed using partial least square structural equation modelling (PLS-SEM). The findings indicate that the adoption of green initiatives in PLCs is significantly influenced by coercive and normative pressures, while mimetic pressure does not influence the adoption of green initiatives in PLCs. Theoretically, this study contributes to management accounting and environmental management literatures in the context of green practices towards environmental sustainability. It also provides empirical evidence to practitioners on the need to understand the key drivers of green initiatives for them to meet the challenges on green issues and to derive the best results from implementation of the initiatives. Regulatory authorities or policy makers may facilitate more extensive adoption of green initiatives by providing more financial incentives for technical resources and training.

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INTRODUCTION

Environmental issues such as pollution, climate change, and natural resource depletion have prompted major concerns of their undesirable impacts on the environment, social, and economy in many countries around the world including Malaysia. Since 1970 human activities have produced nearly 80% increment in greenhouse gas emissions (Hutt, 2016). Land and environmental pollution are caused by use of fertilizers, pesticides, herbicides, and gas emissions from industrial processes. Air pollution is contributed largely by emissions of motor vehicles and industrial wastes during open burning mainly by wood-based and rubber-based factories. Water pollution is the result of exploitation of land caused by activities such as tin mining and deforestation, and from domestic wastes (Mokthsim & Salleh, 2014).

Among the environmental concerns is shown by a study conducted by the Association of Chartered Certified Accountants (ACCA) (2014) whereby the decline in natural resources is the top concern followed by population rise, instability in the financial markets, water scarcity, climate change, and decreasing food resources. The concern on environmental issues in the past decades has triggered increasing environmental sustainability practices (Brundtland Commission, 1987). According to the Brundtland Commission (1987), sustainability is "meeting the needs of the present without compromising the ability of future generations to meet their own needs". The notion of sustainability that entails resolution on three pillars, which are economic, environmental, and social necessities (World Summit United Nations General Assembly, 2005), is relatively broad in nature and hence, this study emphasizes only on the environmental aspect. Environmental demand refers to "green" practices that require us to do activities that could enrich the environment instead of degrading it.

In Malaysia, green practices could be seen in a few government buildings whereby these buildings use solar and photovoltaic sources that can save up to 50% energy. Examples are Low Energy Office Headquarters, Ministry of Energy, Water and Communications, Putra Jaya, and Zero Energy Office Headquarters, Malaysia Energy Centre, Bangi, Selangor. Besides that, the Malaysian government has been seriously emphasising environmental preservation through various initiatives such as promoting and financing high impact research on green technologies by the Ministry of Energy, Green Technology, and Water (KeTTHA) in 2009 (Department of Environment, 2010). Sustainability has always been promoted by Bursa Malaysia as a key success factor for businesses. Business managements need to embrace sustainability by incorporating economic, environmental, social, and governance considerations. In line with this aim, in 2007 the Malaysian government and Bursa Malaysia have mandated all public listed companies (PLCs) to produce sustainability reports called corporate social responsibility (CSR) report to reflect sustainability practices (Bursa Malaysia, 2007; Saleh, Zulkifli, & Muhamad, 2010; Zainal, Zulkifli, & Saleh, 2013). A CSR report provides information on the impact of daily activities of business organizations on the economy, environment, and society.

However, the number of companies producing integrated reports remains low and there is no overall improvement in the quality of reporting (KPMG, 2015). Previous studies indicated that the CSR reporting was for compliance or legitimacy purposes to enhance corporate image (Buniamin, 2010; Buniamin, Alrazi, & Johari, 2008; Sumiani, Haslinda, & Lehman, 2007). A majority of the companies in Malaysia reported their environmental information in the form of general statements while only few provided financial quantification of their environmental activities (Buniamin, 2010; Romlah, Sharifah, Takiah, & Nordin, 2002; Sumiani, Haslinda, & Lehman, 2007). Therefore, there is no evidence of genuine adoption of green practices by these organisations and there is also no evidence of effective management of their green initiatives to enhance firms' performance. According to Bowen, Cousins, Lamming, and Faruk (2001); Carter and Carter (1998); and Handfield, Walton, Seegers, and Melnyk (1997), the compliance-driven companies are not genuinely motivated to practice green and hence, do not guarantee improved organisational performance.

Hence, companies need to understand the key drivers of green initiatives to meet the challenges of green issues and to ultimately improve performance from their implementations. Previous studies, for examples, Zhu, Sarkis, & Lai (2013), Walker, Sisto, & McBain (2008) and Clark (2005), Abd-Rahman, Ho & Rusli (2014) are fragmented pieces of research related to green practices adoption. Furthermore, numerous studies have analyzed the environmental reporting practices but these studies are lacking in investigation of the key drivers of green initiatives and the extent of green adoption. Thus, this study focuses on the green initiatives of PLCs in Malaysia with the aim of addressing these research gaps. Hence, the objectives of the study are as follows:

1. To examine the influence of institutional pressures (coercive pressure, mimetic pressure, and normative pressure) on green initiatives adoption.
2. To examine the extent of green initiatives adoption by Malaysian PLCs.

This study contributes to the literature of environmental management in the context of green practices and environmental sustainability. It addresses the need for research on green practices to address society's sustainability agenda. To some extent this study reorganizes the fragmented research landscapes on green practices. This present study also provides a clear theoretical foundation based on institutional theory to examine the determinants of green initiatives and adoption of green initiatives. In regard to institutional theory, the result demonstrates that those in power position are exerting coercive isomorphism on organisations to adopt sustainable practices. They use their power to initiate the acceptance of new "sustainable rules" through regulative structures. Coerciveness is needed to a certain extent for a more successful adoption of green initiatives compared to voluntary adoption of green initiatives. For normative pressure, the result indicates that normative isomorphism leads organisations to adopt and comply with new norms, values, and practices as a social obligation. The non-influence of the mimetic pressure on the adoption of green initiatives suggests that PLCs are unwilling to merely imitate strategies pursued by other companies unless these companies are proven to be successful green companies and that going green would save cost and customers demand for them to adopt green strategies.

In addition, by using survey approach this study undertakes an analysis of green practices and green management. Through this large-scale quantitative study, it allows for the incorporation of a broader scope. This study provides empirical evidence on how companies could contribute in meeting the needs of our planet and enhancing performances in their respective industries.

The present study provides some important contributions for management practices. It provides empirical evidence to managers for them to recognize factors that could make organisations become more environmentally proactive. Since coercive and mimetic pressure are the determinants of green adoption, regulatory authorities or policy makers could facilitate and encourage effective implementation of green initiatives by providing more incentives such as financial incentives, technical resources, governmental subsidies, tax incentives, training, pilot green projects, and green awareness. Governments should consider what elements of their existing work might contribute to sustainability, and how other elements of sustainability could interact and be incorporated for present and future positive impacts. Financial institutions should offer financing at lower rates for environmentally friendly technologies, and lower the insurance premium to protect companies against environmental risks. In addition, this study provides professionals with deeper understanding of the interdependence of social, environmental and economic issues; long-term and future-focused accounting practices; and encourages them to work alongside experts in other professions.

The next section reviews literature concerning green practices and related theories, followed by framework and hypotheses development. The sections that follow deal with methodology, results and discussion and ends with conclusion and recommendations.

LITERATURE REVIEW

Environmental or Green Demand

The word "environmental" commonly refers to human interaction with the ecosystem and human impact on the natural system. Environmental sustainability is identified as a situation of balance, resilience, and interconnectedness that permits human society to fulfil its needs while not worsening biological diversity (Morelli, 2011). Nowadays, the word "green" is used to refer to environmentally-friendly activities. "Going green" means to pursue knowledge, activities and lifestyles that lead to better environmental well-being.

Institutional Theory

The institutional theory explains that organisations will exhibit similar behaviour to gain social approval if they are operating with similar norms, values, and rules (Meyer & Rowan, 1977; Scott, 2001). Furthermore, DiMaggio and Powell (1983) suggested that organisational decisions are heavily affected by three institutional mechanisms, namely coercive, mimetic, and normative isomorphism. These mechanisms generate a common set of values, norms, and rules to produce similar organisational practices and structures that are shared by a common organisational field.

Coercive isomorphism is derived from legal mandates or the organisations that they are dependent upon, whereas mimetic isomorphism arises through organisational imitation of norms or practice in the organisation's institutional field. However, normative isomorphism comes from having similar attitudes and approaches of professional groups and associations brought into the organisations through hiring practices. Institutions define what is appropriate or legitimate and thus, render actions that affect how organisations make decisions (DiMaggio & Powell, 1991). The institutional point of view emphasises on the parts of similarity, authoritative, and social weights in driving organisational activities (Westphal, Gulati & Shortell, 1997). Notably, institutional theory offers clarifications on the choosing of certain practices without a conspicuous monetary return (Berrone, Cruz, Gomez-Mejia, & Larraza-Kintana, 2010; DiMaggio & Powell, 1983; Meyer & Rowan, 1977).

Apart from that, institutional theory exhibits a suitable theoretical clarification for decisions related to social and ecological aspects in the context of a developing country. A number of companies in developing countries including Malaysia are dependent on the government for funding and incentives (Amran & Devi, 2008). Therefore, it is relevant for the current research to apply institutional theory to explain institutional pressures – coercive, mimetic, and normative – as key drivers of green initiatives adoption in Malaysian PLCs.

Drivers of Green Initiatives

In order to meet the green challenges and to ultimately derive benefits from the implementation of green practices, firms need to understand the drivers and consequences of their green initiatives. Previous studies showed that green initiatives by companies have been influenced by several factors such as (i) imposition of authoritative rules and regulations by government on organisations to reduce environmental degradation (Zhu *et al*, 2013); (ii) demands of consumers for green products or services (Trowbridge, 2001; Walker *et al*, 2008); (iii) proactive environmental strategy of competitors to gain competitive advantage (Sarkis, 2003; Walker *et al*, 2008); (iv) top management green commitments and ethical values (New, Green & Morton, 2000); (v) culture towards green practices (Walker *et al*, 2008); (vi) campaigns by green activists or non-governmental organisations (NGOs) (Hall, 2001; Trowbridge, 2001; Walker *et al*, 2008); (vii) government, investors, industrial associations, surrounding communities, market actors, and employees (Clark, 2005; Chen & Soyez, 2003); (viii) institutional pressures (Darnall, Henriques, & Sadorsky, 2008); and (ix) economic consideration and capital providers (Guth & Steger, 2008). These past studies related to adoption of green practices are fragmented pieces of research.

The present study proposes to examine how institutional pressures (coercive, mimetic, and normative) influence green initiatives in Malaysian PLCs. Coercive pressure is relevant because PLCs in Malaysia are mandated to produce CSR report since 2007. Hence, regulatory authorities and legal forces are a form of institutional pressure on adoption of green practices. However, previous studies revealed that the compliance-driven companies are not genuinely motivated to practice green and practicing green do not guarantee improved organisational performance (Bowen *et al*, 2000; Carter & Carter, 1998; and Handfield *et al*., 1997). This compliance behaviour is implied by findings that CSR reporting in Malaysia was meant for

compliance or legitimacy purposes to enhance corporate image (Buniamin, 2010; Buniamin *et al*, 2008; Sumiani *et al*, 2007). Companies reported CSR information in general statements (Buniamin, 2010; Romlah *et al*., 2002; Sumiani *et al*, 2007), and the types of disclosure made are mainly related to corporate charitable programmes, with only little information provided on the corporate environmental initiatives relating to organisational operations (ACCA, 2002).

Mimetic pressure is examined as another key driver because as green practices by companies in Malaysia are not yet prevalent, companies are likely to model other companies that succeed in their green practices. For normative pressure, trade association and professional groups have become the proactive groups that disseminate awareness and they issue several reporting recommendations and guidelines regarding green issues. PLCs might be influenced by these groups besides adhering to practices of their parent companies.

Hence, those three variables are examined as the key drivers of green initiatives in the Malaysian context.

Institutional Pressure

As indicated by institutional theory, institutions inflict power upon people and organisations by making social weights and limitations, and defining limits for the aspects that are and are not acknowledged. Such pressures might be coercive, normative, or mimetic (Davidsson, Hunter, & Klofsten, 2006; DiMaggio & Powell, 1983).

Coercive Pressure

Coercive pressure is derived from legal orders or influence from organisations that they are dependent upon (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Furthermore, it is the authoritative force executed normally, but not exclusively by the government mandates (Oliver, 1991). As indicated by Liu *et al*. (2010), government agencies are the obvious factor that influence the adoption of green practices by organisations through the enforcement of rules and regulations. For instance, in order to reduce pollution to the environment, organisations are required to use pollution control technologies and report their pollution emissions to indicate their impact on the environment. Failure to do so might cause these organisations to face legal sanctions which affect the business progress adversely. The fear of legal sanctions is considered as the main reason for organisations to proactively promote green practices (Hoffman, 1997). Moreover, the environmental behaviour of exporting companies might also be influenced by the coercive pressure from foreign legislations.

The environmental policy and regulations of the government are critical determinants as firms have to conform with these requirements (Schrettle, Hinz, Scherrer, & Friedli, 2014). Banerjee (2001) suggested that regulatory requirements have a significant impact on organisational green approaches and consequently, affect profitability and growth. Apart from that, Etzion (2007, p. 651), claimed that regulations "can determine the technologies that must be used, specify green targets that must be achieved, and build economic frameworks for reallocating environmental costs, benefits, and others." Regulations are a powerful driver when the management has to bear legal obligation for environmental violation (Sharma & Henriques, 2005). Additionally, Milstein, Stuart and Anne (2001) suggested that coercive pressure is normally more important during the commencement phase of the formulation of legitimacy.

Zhu *et al*. (2013), studied 396 manufacturers in China and revealed that coercive pressures have driven the manufacturers to adopt internal green supply chain management practices. This indirectly affected their economic performance. Furthermore, Zhang *et al*. (2014), in their study on the road freight transportation industry in Nanjing, China, found that one of the main driving factors of green logistics practices for truck fleets is coercive pressure.

Companies in Malaysia, especially the government linked companies (GLCs), are subjected to coercive pressure to align their environmental sustainability with the aspirations of the government for their long-term survival. Similar pressure is seen in the companies that are dependent on government contract or support (Amran & Devi, 2008). Dimaggio and Powell (1983) explained that organisations that rely upon the government projects and contracts might be regulated by government convictions. Through the coercive mechanism, organisations that do not follow the government guidelines and goals might face issues in obtaining future projects (Dimaggio & Powell, 1983).

The actions of Malaysian government to emphasise environmental concerns through visions, investments, guidelines, mandates, penalties, and awards indicate its seriousness in addressing environmental issues. They also symbolise the government's expectation of genuine and accountable environmental commitments by organisations. Consequently, companies with direct or indirect relationship to the government and those governed by legislative regulations would be subjected to coercive pressure to implement green initiatives. On the whole, the institutional theory holds that coercive pressure is a strong driver for green initiatives adoption for legitimacy purpose and subsequently, it might enhance organisational performance.

Mimetic Pressure

Mimetic pressure occurs through organisational imitation of norms or practices in their institutional fields (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). It arises as a consequence of high uncertainty and acts to lessen the threat of uncertainty in the environment. Examples include the unclear goals of organisation or the uncertainty of the external environments. The model organisation serves as a source of ideas and practices for the other organisations. Organisations adopt the modelling process to enhance their legitimacy with their environment.

Moreover, organisations will align themselves with similar institutions that they acknowledge to be successful (DiMaggio & Powell, 1983). For instance, subsidiaries always model techniques from their parent company or the multinational companies in the host countries (Arias & Guillen, 1998). Apart from that, Zhu *et al*. (2013), discovered that in China, mimetic pressure drives manufacturers to adopt green supply chain management practices that indirectly affect the economic performance of the firms. Liu *et al*. (2010) also reported that mimetic pressure has a significant positive effect on corporate environmental management in China, causing the Chinese companies to have a higher sensitivity towards the market factor. Thus, according to institutional theory, mimetic pressure could also become a strong driver for the adoption of green initiatives and subsequently improve organisational performance.

Normative Pressure

Normative pressure arises from adoption of similar approaches and attitudes of professional groups and trade associations that are brought into organisations through employment (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Normative pressure begins with the industrial professionalization or association members who endeavour to define their ways of work to legitimate their professional autonomy (Collins, 1979; Larson, 1977). Professionalization is considered as a cooperative effort of members to set the conditions and methods of their work and to control the quantity and quality of new organisational members entering their field (Larson, 1977). Professionalization also develops a cognitive base and legitimation for organisational autonomy. Two parts of professionalization are the significant foundation of isomorphism, namely formal education and the legitimation that education brings, and the growth and expansion of professional networks. Universities, colleges, training centres, and professional and trade associations are crucial in the enrichment of organisational norms, values, and beliefs. These organisations create a group of interchangeable professional staff members who inhabit similar positions across a wide range of institutions.

Due to their trainings, individuals become more alike and create organisations that are similar. Administrators and top staff members are typically drawn from the same type of universities and consequently, they are trained to incorporate specific attributes. Administrators view issues and problems similarly, set the same type of policies, develop alike programs, and interpret existing policy in the same manner (DiMaggio & Powell, 1983).

Local and global professionals are among those that are concern on green issues. These professionals have become the proactive group that disseminate awareness and issue several reporting recommendations and guidelines regarding green issues. The environmental reporting guidelines by MASB, MCCG, ACCA, and DOE in Malaysia is one significant example of this (Buniamin, 2010). Additionally, Zhu *et al*. (2013), revealed that normative pressure drives the Chinese manufacturers to adopt internal green supply chain management practices and this indirectly affect their economic performance. Moreover, Zhang *et al*. (2014), surveyed the road freight transportation industry in Nanjing, China, and found that one of the main driving factors of green logistics practices for truck fleets is normative pressure. Hence, based on the institutional theory, normative pressure could be a key determinant for the adoption of green initiatives and subsequently, to enhance organisational performance.

Adoption of Green Initiatives

Among the green initiatives adopted are green supply chain management that consists of waste management, green packaging, evaluating vendors on their green performance, reducing carbon emissions in the delivery of goods, and developing more eco-friendly products (Walker *et al*., 2008; Zhu *et al*., 2013); green logistic of truck fleets (Zhang *et al*., 2014); corporate environmental management (Liu *et al*., 2010); energy saving (Maarten, Worrell & Masanet, 2008; U.S. EPA, 2006); green strategies and green marketing (Chan, 2010), and environmental attitude (Magrini & Lins, 2007). Besides that, there are several scenarios of green initiatives.

Maarten *et al*. (2008) reported that many countries in the world have participated in green voluntary programs. The U.S. participates in energy saving and environmental management

system (EMS) like ISO 14001 and Six Sigma because such a program with EMS enhances the energy saving of plants. Oil and gas companies like BP implement greenhouse gas (GHG) emission reduction program and has successfully reduced its global GHG emissions up to 10% within 5 years after initiating the program and has also succeeded in reducing operating costs. In Canada, some chemical firms such as Shell, Bayer, Dow, and DuPont develop action plans for managing GHG emissions and report regularly on the results. In Europe, various countries have voluntary signed agreements between the industries and governments to reduce GHG emission. The chemical industry in Netherlands also participates in a long-term agreement for GHG emission program which includes companies such as ExxonMobil, Dow, and Shell. In the long-term agreement, energy efficiency plans were developed for each participating plant where the energy efficiency development is regularly monitored until now (Maarten *et al*., 2008).

In Malaysia, the Malaysian National Energy Efficiency Master Plan 2010 is a holistic execution roadmap for energy saving. Low energy office (LEO) building requires that energy efficient features are developed in an integrated building design process and computer simulation, and it becomes the first government LEO building. LEO building saves up to 50% energy compared to buildings without energy efficient features. Energy efficient buildings in Malaysia are buildings with solar building-integrated photovoltaic (BIPV) that have set a new standard for sustainable buildings in Malaysia and the ASEAN region.

The Malaysian government has been seriously emphasising on environmental preservation through various initiatives, for example the Malaysia Development Plan and Vision 2020 is targeting for the country to become a developed nation and focuses on the aspect of environmental sustainability (Hasan & Adnan, 2002; Mahyuddin & Rao, 2003). In addition, ethical or social responsibility investment funds were launched in 2004 (Amran & Devi, 2008), promoting and financing high impact research on green technologies by the Ministry of Energy, Green Technology, and Water (KeTTHA) and continued in April 2009 (Department of Environment, 2010). Malaysia, being part of the global economic network, has to respond to global trends on environmental preservation to gain access to global markets. Hence, in 2007, regulations were introduced to mandate all PLCs in Malaysia to produce CSR report that comprises social and environmental reporting (Bursa Malaysia, 2007; Saleh *et al*., 2010; Zainal *et al*., 2013). These initiatives reflect the Malaysian government's concern over green initiatives and an expectation of strong environmental commitment by organisations in Malaysia. Hence, waste management, recycling, energy saving, environmental or health-safety measures, process redesign for environmental or health-safety, green supply chain, going paperless, and tree planting might be among the green initiatives adopted by organisations these days.

In the present study, the explanation of green initiatives adoption is adapted from "Sustainable Development Initiatives in Malaysia" by Malaysia Productivity Corporation (2010). The waste management practice includes reduce waste and packaging, transportation, collection, disposal, treatment, and monitoring and regulating. It is aimed to lessen unfavourable impacts of waste on the environment and health. A simple example of waste management is to provide bins to store waste. For recycling practice, it consists of processing used materials into new products in order to reduce the usage of new raw materials, energy and water, and these measures can reduce air and water pollution. For example, polythene products and cans are recycled before transforming them into new materials without the need to send the whole

waste to landfills or dump sites. Another example is by collecting waste paper, sorting, and grading them accordingly before selling them to paper mills where they would be recycled and converted into various types of industrial paper. On other note, energy saving practice usually includes the adoption of GHG emission reduction programs at premises or factories to reduce GHG emissions, the use of incandescent light bulb to reduce carbon dioxide emission and energy usage. Other energy saving practice includes increase use of energy efficient machinery and equipment such as high efficiency motor and pumps, the integration of renewable energy system and energy saving features in buildings, and increase usage of thermal insulation for roofs in air-conditioned buildings.

Environmental or health-safety measures normally consist of preventing harmful substances from contaminating products, processes, work areas, and environment, for example to include measures to address ergonomic issues, air quality, and minimise usage of hazardous chemicals and gases. In addition, process redesign for environmental and health-safety includes recreating or remodeling of products for better energy saving and being more environmental friendly. For example, (i) front-load technology of washing machine can reduce up to 70% of water consumption; (ii) intelligent inverter technology can reduce the consumption of electricity, for example, refrigerator uses 40% less electricity or lesser amount of electricity needed; and (iii) intelligent inverter technology, precise power adjustment, and compressor in air conditioner can save up to 60% energy and reduce carbon dioxide emission. Moreover, green supply chain includes offering inventory management services for suppliers and clients, cleaner production, green packaging, design of products for reuse and recycling, return packaging to suppliers for reuse or recycling, cooperation with customers for eco-design, and using less energy during product transportation.

Hence, green practices are environmentally-friendly activities and going green implies pursuing knowledge, activities, and lifestyles that lead to better environmental well-being. It shows that companies around the world are adopting various green initiatives to achieve the sustainability agenda.

RESEARCH METHODOLOGY

Research Framework

The discussion above outlines the research framework for this study. Independent variables for this study are coercive pressure (Coercive), mimetic pressure (Mimetic), and normative pressure (Normative). The dependent variable is green initiatives adoption (GreenAdopt). Figure 1 shows the research framework.

The conceptual framework consists of exogenous construct or independent variables which comprises coercive pressure, mimetic pressure, and normative pressure. Endogenous construct or dependent variable consists of green initiatives adoption.

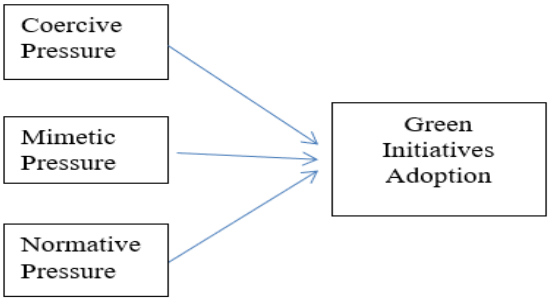

Figure 2: Statistical Model of Study

Hypotheses Development

In the present study, the key drivers of green initiatives adoption consist of institutional pressures (coercive, mimetic, and normative) which were tested through hypotheses H1, H2, and H3. Institutional theory, through one of its institutional mechanisms namely coercive isomorphism, explains the need for organisations to operate in accordance with legal mandates to avoid sanctions and gain social approval to survive (Meyer & Rowan, 1977; Scott, 2001). Organisations need to comply with authoritative rules imposed on them, such as the use of pollution control technology and to monitor their pollution emissions. This would reduce adverse impact of the natural environment and thus avoiding legal actions being taken against them (Hoffman, 1997). The coercive pressure drives organisations to adopt green initiatives such as green supply chain management (Zhu *et al*., 2013) and green logistics practices of truck fleets (Zhang *et al*., 2014). Hence, the first hypothesis is developed as follows:

H1: Coercive pressure positively affects the adoption of green initiatives.

The second institutional mechanism in institutional theory is mimetic isomorphism, which explains why organisations imitate the norms or practices of successful organisations when facing uncertainties (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). The mimetic pressure would positively affect the adoption of green initiatives. For example, Liu *et al*. (2010) attributed the establishment of corporate environmental management to higher sensitivity of companies, while Zhu *et al*. (2013), found that mimetic pressure influences the adoption of green supply chain management. In this case, the next hypothesis is:

H2: Mimetic pressure positively affects the adoption of green initiatives.

The third institutional mechanism in institutional theory is normative isomorphism which explains how the pressure of similar attitudes and approaches of professional groups and associations make organisations to agree to conform (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). Green issues are currently the concerns of many local and global professional groups and associations. They are the proactive groups that disseminate awareness and set guidelines for the benefit of organisations. Examples of these are the issuance of environmental information and guidelines by the Malaysian Accounting Standard Board (MASB), Malaysian Code on Corporate Governance (MCCG), and Association of Chartered Certified Accountant

(ACCA). Normative pressure has been found to influence firms to adopt green initiatives, such as logistic practice of truck fleets (Zhang *et al*, 2014) and green supply chain management (Zhu *et al*., 2013). Therefore, the subsequent hypothesis is:

H3: Normative pressure positively affects the adoption of green initiatives.

RESEARCH METHODOLOGY

This study is a quantitative study which carried out a questionnaire survey on 921 Malaysian PLCs listed in Bursa Malaysia (http://www.bursamalaysia.com).

The present study involves the testing of hypotheses and descriptive analysis. The extent of researcher interference was minimal as the research setting was non-contrived in a natural environment – let the events be as they normally occur. The population and sampling frame was the list of PLCs on Bursa Malaysia. The PLCs involved were large companies which were likely to be more sensitive over the environmental concerns and were expected to have sufficiently developed MCS (Bouwens & Abernethy, 2000). As all PLCs in Malaysia are mandated to produce CSR reports (Bursa Malaysia, 2007), there is a high possibility that these companies would have adopted some green initiatives. Moreover, PLCs would implement green activities because they are more visible and would be subjected to greater pressure from their stakeholders to sustain the environment (Gonzalez-Benito & Gonzalez-Benito, 2006). The unit of analysis is the organisation. This research is a cross-sectional research using a questionnaire survey with the selection of respondents inclusive of organisational top management such as Chief Executive Officer, Managing Director, Financial Controller, and Senior Manager. Data of this study were analysed using Statistical Package for the Social Science (SPSS) and partial least square-structural equation modelling (PLS-SEM).

Sample Size

Sample size is one of the crucial elements in a research because it influences the statistical power of the significance testing and the generalizability of the results (Hair, Anderson, Tatham, & Black, 1998; Hair, Hult, Ringle, & Sarstedt, 2014). The guidelines to determine the sample size of a research are as follows:

i. Sample size larger than 30 and less than 500 is appropriate for most research (Sekaran, 2003; Roscore 1975).
ii. Sample of less than 30 is usually too small, while sample of greater than 500 is seldom necessary (Guy *et al*., 1987).
iii. The sample size would have to be more than 100 for the results to be generalizable (Hair *et al*., 1998).
iv. Sample size should be 10 times the largest number of formative indicators used to measure a single construct, or 10 times the largest number of structural paths directed at a particular construct in the structural model (Barclay, Higgins, & Thompson, 1995). This rule of thumb is equivalent to sample size should be 10 times the maximum number of arrowheads pointing at a latent variable anywhere in the PLS path model (Hair, Ringle, & Sarstedt, 2011).
v. Sample size should be necessary to detect minimum R2 values of 0.10, 0.25, 0.50, and

0.75 in any of the endogenous constructs in the structural model for significance levels of 1%, 5%, and 10%, assuming the commonly used level of statistical power of 80% and a specific level of complexity of the PLS path model which is the maximum number of arrows pointing at a construct in the PLS path model (Cohen, 1992).

The sample size for this study is 120 companies out of a total of 921 companies. This study has eight independent variables in the measurement and structural models or eight arrows pointing at a construct in the PLS path model, hence, based on sample size guidelines above, this study would need at least 84 observations to achieve a statistical power of 80% to detect R2 values of at least 0.25 (with a 5% probability of error).

Research Instrument

A structured questionnaire was developed and used for data collection. The questionnaire items were adapted from previous relevant and related literature. However, some alterations were made to fit the present study's objectives. The questionnaire was then discussed with a few academicians before it was pre-tested on a few industrial managers who are experts in the field. The research instrument is a nine-page structured questionnaire divided into six sections. Section A gathers data on the "key drivers of green initiatives", and Section B focused on the "extent of green initiatives adoption". Section C collects data on the "extent of green integration into management control system". Section D focuses on the "firm performance" and Section E provides "spaces for comments and types of challenges faced by firms in regard to green adoption and integration". Finally, Section F gathers information on the "respondents and companies".

Measurement Scale

The present study used a five-point Likert scale for all sections except Section E (Comments) and Section F (Demographic). The reasons for using the five-point scale instead of seven-point scale are as follows. First, the choice of answers is balanced in the directional categories by including a moderate or average response and second, the increased number of categories would probably not result in significant differences in the findings, and respondents might get confused, hence, later affected the validity and reliability measures (Nunnaly, 1978). One main advantage of using five-point scale is that the measurement is more stable, and in addition, the error of central tendency is minimised as respondents are reluctant to give extreme judgement such as three-point Likert scale. A seven-point Likert scale is less attractive for the respondents since the respondents would require time to choose the answers from a wider range of choices. In Section F, nominal scale is used to measure the demographic data.

Measurement of Constructs

The measure for the constructs or variables were adopted from related literature and subsequently modified or adapted to the present study. Some of the measurement items had to be modified to adapt for the use of present study. Modifications were made after taking into account the different perspectives examined in earlier studies such as different countries, industries, and

types of organisations. For this study, it is in the context of PLCs in Malaysia. After being reviewed by academicians and top managers in PLCs during pre-testing, some modifications and recommendations were made to the measurement items accordingly. For example, (i) Coercive Pressure - is adapted to refer to the Malaysia Environmental Acts and Regulations, Bursa Malaysia requirements, Requirements of parent company, and Requirements of trading partners; (ii) Green Adoption - the terms are simplified and adapted to be relevant to industrial practices in Malaysia such as Waste Management, Recycling, Energy Saving, Environmental or Health-Safety Measures, Process Redesign For Environment And Health-Safety, Green Supply Chain, Paperless, and Tree Planting; (iii) Public Image – is taken from explanations about the terms in the literature since the items have not been used in previous surveys. The rest of the items are similar to the items used in earlier instruments, except for some items that had been re-worded to be more easily understood by respondents in the Malaysia context.

Pre-testing of Questionnaire

Pre-testing of questionnaire is to determine the content validity of the items and to ensure that the respondents understand the questions being asked. Pre-testing is also required to detect problems in the instrument design. The pre-testing process consists of scrutinising wordings in questions, problems of leading questions, redundancy of questions, and bias to order (Zikmund, 1997). In this study, the questionnaire was first discussed and pre-tested among members of the supervisory committee comprising three academicians. After the initial scrutiny and modifications, the questionnaire was pre-tested on four senior managers from four PLCs in different industries (Plantation, Technology, Industrial Products and Construction). A few of them could not comprehend several questions, and were confused with some terminologies used. Later, they made some comments and suggestions. The researcher did the corrections and improvements to the questionnaire according to their comments. Then, the revised questionnaire was reviewed by supervisory committee members before being mailed to the respondents. The pre-testing was vital to clarify the understanding of the items in the measurement instrument and also to obtain valuable feedbacks to improve the face and content validity by using appropriate wordings when asking the questions. The steps taken were in accordance with Robert's (1999) study that identified the necessary steps for the development of questionnaire.

Data Collection

Data were collected using mail questionnaire distributed to all PLCs on Bursa Malaysia at the beginning of May 2015. The data collection period took six months and 120 companies responded. The low response rate from PLCs was due to the confidentiality of information requested. The main advantage of using mail questionnaire is that it allows an extensive coverage of samples from various geographical locations at a lower cost (Buchanan, Ali, Heffernan, Ling, Parrott, Rodgers, & Scholey, 2005). The structured questionnaire, together with a self-addressed returned stamped envelope and a cover letter explaining the purpose of study were posted to the Chief Operating Officer for each PLC on Bursa Malaysia. The duration given for the completion of survey was two weeks from the date of postage. Then, the researcher did follow-up with organisations that did not respond within the given time frame

by sending follow-up letters, telephone calls, and reminder emails. The researcher also sent survey questionnaires via online to those who did not respond because the mail questionnaires might not have reached them.

Response Rate

The questionnaires were distributed to 921 PLCs. The number of questionnaires returned totaled 139. Out of this number, eight questionnaires had missing data in Section C and Section D while another 11 questionnaires were returned unanswered. Therefore, a total of 128 companies responded which is 13.90% response rate, and 120 questionnaires or 13.03% were used for data analysis in the study.

Non-Response Bias

Existing literature suggests that the differences between respondents and non-respondents are in the forms of behaviour, motivation, demographic, and psychographic which might affect the results of the study (Malhotra, Hall, Shaw, & Oppenheim, 2006). Empirical studies assume and suggest that the late respondents have similar characteristics like the non-respondents because they would probably not be responding otherwise being persistently asked (Churchill & Brown, 2004; Malhortra *et al*, 2006). The present study used t-test to test for the non-response bias as suggested by Oppenheim (2001). The sample was divided into two, namely the "early responses" for the companies that returned the questionnaires within two weeks after the date of distribution, and the "late responses" for the companies that returned the questionnaires after two weeks from the date of distribution after many follow-up attempts (Lineback & Thompson, 2010). Accordingly, early responses were represented by the first thirty responses, and late responses were represented by the last thirty responses. An independent t-test was employed to determine the significant difference between early responses and late responses for all variables examined in this study. There is no significant difference found in all variables. This suggests that non-response bias is not an issue in this study.

Statistical Tools for Data Analysis

This study used PLS-SEM as a statistical tool for data analysis. PLS-SEM is a kind of SEM that is used to test a series of hypothesised model due to its ability to simultaneously test more complex path models involving a larger number of variables (Hair *et al*., 2014; Urbach & Ahlemann, 2010). SEM is among the most useful advanced statistical analysis techniques that have emerged in the social sciences in recent decades. There are two types of SEM - one is Covariance-Based SEM (CB-SEM), and the other is Variance-Based SEM (PLS-SEM) whereby CB-SEM is used to confirm (or reject) theories and PLS-SEM is primarily used to develop theories. PLS-SEM is used when sample sizes are small, the data are not necessarily normal, or in complex models with many indicators and model relationships are estimated. In situations where theory is less developed, researchers should consider the use of PLS-SEM as an alternative approach to CB-SEM. This is particularly true if the primary objective of applying structural modelling is prediction and explanation of target constructs (Hair *et al*., 2014). Hence, PLS-SEM is relevant for this study.

RESULTS

Profile of Sample Companies

Table 1 shows the profile of sample companies.

Table 1: Profile of Sample Companies

Type	Frequency	Percentage (%)
Duration of Green Practice Adoption		
1-3 Years	26	21.7
4-10 Years	62	51.7
Over 10 Years	32	26.7
Total	120	100.0
Industrial Sector		
Consumer Products	23	19.2
Industrial Products	22	18.3
Construction	8	6.7
Trade & Services	30	25.0
Finance	15	12.5
Properties	3	2.5
Mining	2	1.7
Plantation	7	5.8
Technology	10	8.3
Total	120	100.0
Type of Ownership		
Local: Family Ownership	21	17.5
Local: Professionally Managed	80	66.7
Foreign: Professionally Managed	6	5.0
Joint Venture: Local & Foreign	13	10.8
Total	120	100.0
Annual Sales Turnover		
Less Than RM50 Million	12	10.0
RM50 Million To RM100 Million	21	17.5
RM101 Million To RM500 Million	43	35.8
Over RM500 Million	44	36.7
Total	120	100.0
Number of Employees		
Less Than 200	17	14.2
200 To 1,000	59	49.2
1,001 To 10,000	27	22.5
Over 10,000	17	14.2
Total	120	100.0

Table 1 (Cont.)

Duration of Establishment		
1 To 3 Years	1	0.8
4 To 10 Years	11	9.2
Over 10 Years	108	90.0
Total	120	100.0

Table 1 shows that 78.4% of the sample companies have been adopting green practices for more than four years to date, and 26.7% out of these companies have more than ten years of experience in green practices. Only 21.7% of the companies have approximately three years of experience in green practice and all of the sample companies adopted green practices in one form or another. In the present study, 30 (25%) sample companies were from "trade and services sector", 23 (19.2%) sample companies were from "consumer products sector" and 22 (18.3%) were from "industrial products sector". More than half of the sample companies (66.7%) are locals and professionally managed, while 72.5% of them possessed more than RM100 million annual sales turnover. Next, 36.7% of the companies hired more than 1,000 employees, and 14.2% of them hired more than 10,000 employees.

Samples by Industrial Sector

Table 2 shows the profile of sample companies by sectors.

Table2: Samples by Industrial Sector

Industrial Sector	Total
Consumer Products	23
Industrial Products	22
Construction	8
Trade and Services	30
Finance	15
Properties	3
Mining	2
Plantation	7
Technology	10
Total Sample	120

Profile of Respondents

Table 3 shows the profile of respondents.

Table 3: Profile of Respondents

Type	Frequency	Percentage (%)
Duration of Green Practice Adoption		
1-3 Years	26	21.7
4-10 Years	62	51.7
Over 10 Years	32	26.7
Total	120	100.0
Industrial Sector		
Consumer Products	23	19.2
Industrial Products	22	18.3
Construction	8	6.7
Trade & Services	30	25.0
Finance	15	12.5
Properties	3	2.5
Mining	2	1.7
Plantation	7	5.8
Technology	10	8.3
Total	120	100.0
Type of Ownership		
Local: Family Ownership	21	17.5
Local: Professionally Managed	80	66.7
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Joint Venture: Local & Foreign	13	10.8
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Annual Sales Turnover		
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Less Than 200	17	14.2
200 To 1,000	59	49.2
1,001 To 10,000	27	22.5
Over 10,000	17	14.2
Total	120	100.0
Duration of Establishment		
1 To 3 Years	1	0.8
4 To 10 Years	11	9.2
Over 10 Years	108	90.0
Total	120	100.0

From Table 3 above, it shows that about two-third of the respondents (68.3%) are male and 89.2% are aged 30 years and above. Almost all of the respondents (93.3%) obtained certificates of tertiary education, either having a first degree or a professional degree and they held top or senior managerial positions. Next, 85.8% of them have more than four years of working experience in their current companies and 58.3% of the respondents have more than ten years working experience in their current companies, suggesting that most respondents are knowledgeable about their companies and well experienced in operational practices.

Descriptive statistics for the Extent of Green Initiatives Adoption

Table 4: Mean of Constructs and Items

Coercive Pressure	Mean	Level of Extensiveness
A01.Acts and Regulations	3.517	Moderate
A02.Bursa Malaysia requirements	3.417	Moderate
A05.Trading partners requirements	3.000	Moderate
Average	3.311	Moderate
Mimetic Pressure	Mean	Level of Extensiveness
A06.Strategies of Competitors	3.017	Moderate
A07.Strategies of successful companies in same industry	2.942	Little
A08.Strategies of successful companies in other industries	2.975	Little
Average	2.978	Little
Normative Pressure	Mean	Level of Extensiveness
A09.Professional	2.675	Little
A10.Industry Associations	2.767	Little
A11.Public	3.208	Moderate
Average	2.883	Little
Green Practices Adoption	Mean	Level of Extensiveness
B01.Waste Management	3.792	Moderate
B02.Recycling	3.950	Moderate
B03.Energy Saving	4.008	Some
B04.Safety Measurement	4.075	Some
B05.Process Redesign	3.558	Moderate
B06.Green Supply Chain	3.200	Moderate
Average	3.764	Moderate

From Table 4 above, the extensiveness of motivation by coercive pressure is moderate (3.311) with the highest number coming from Acts and Regulations (3.517), a few for mimetic pressure (2.978) and a few for normative pressure (2.883). The overall mean score for the extent of green initiatives adoption is 3.764 which the highest score from environmental or health-safety measures (4.075), followed by energy saving (4.008); recycling (3.950); waste management (3.792); process redesign for environmental and health-safety (3.558); and green supply chain (3.2). Paperless and tree planting were excluded from the construct measurement

due to their low outer loadings. The sample companies were still using papers for most of their documentations and other office activities. The tree planting practice was not really much of a practice. Even though the Paperless and Tree Planting factors were excluded from the measurement items, the measurement of the construct GreenAdopt remains relevant for PLS-SEM analysis with the other six items. PLS-SEM considers the minimum of one item for construct measurement (Hair *et al*., 2014). Thus, the measurement of this construct is not affected by the exclusion of one item.

Statistical Model of Study

Figure 2 below shows the model of the study based on PLS-SEM.

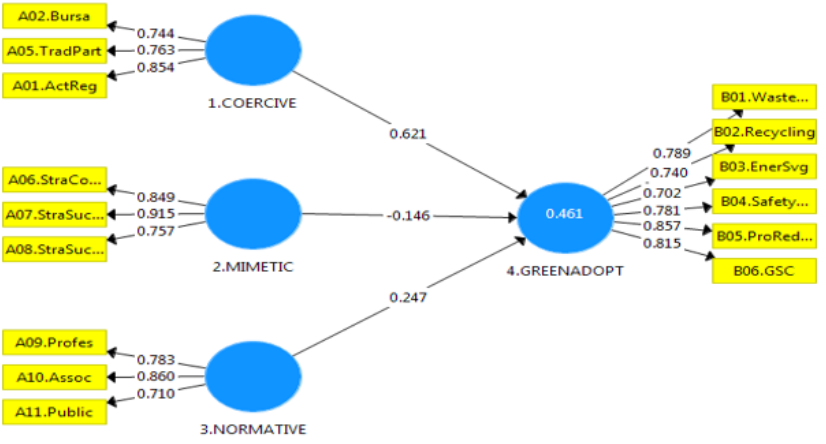

Figure 2: Statistical Model of Study

Summary for Measurement Model

Table 5 below shows the summary of results for measurement model.

Table 5: Result Summary for Measurement Model

Latent Variable	Indicator (code)	Loadings	Composite Reliability	AVE	Discriminant Analysis
		>0.70	>0.70	>0.5	
Coercive	A01	0.744	0.831	0.622	Yes
	A02	0.763			
	A05	0.854			
Mimetic	A06	0.849	0.880	0.711	Yes
	A07	0.915			
	A08	0.757			
Normative	A09	0.783	0.829	0.619	Yes
	A10	0.860			
	A11	0.710			

Table 5 (Cont.)

GreenAdopt	B01	0.789	0.904	0.612	Yes
	B02	0.740			
	B03	0.702			
	B04	0.781			
	B05	0.857			
	B06	0.815			

From Table 5, the Measurement Model is used to analyse whether the construct's measures are reliable and valid. Internal consistency is measured by Composite Reliability (CR). The CR values should be >0.70 (Hair *et al*. (2014). In this study, all indicators have CR >0.70, hence they have satisfactory internal consistency reliability. Indicator reliability is shown by high outer loadings. Common rules of thumb, outer loadings should be >0.70. The Rationale is: a squared outer loading is equivalent to communality (at least 0.5 or 50%) and item below 0.40 should be eliminated (Hair *et al*., 2011). In this study, all outer loadings >0.70, hence, the items are members of the constructs. Convergent validity is the extent to which a measure correlates positively with the alternative measures of the same construct. The items share a high proportion of variance. To establish convergent validity, researchers should consider the outer loadings of the indicators and Average Variance Extracted (AVE). The AVE should >0.5, whereby AVE<0.5 indicates that on average, more error remains in the items than the variance explained by the construct. The results show that AVE for all items >0.5. Since all items have AVE>0.5 and high outer loadings that >0.70, it indicates that the items share a high proportion of variance and a measure correlates positively with the alternative measures of the same construct. Discriminant validity is the extent to which a construct is truly distinct from other constructs by empirical standards. In this study, the assessment meets the criteria of Fornell Larcker and Cross Loadings (values bigger than others). Hence, the constructs are not sharing the same concept and they are discriminant. The items "A03.Evironmental Acts and Regulations in Export Countries (A03.ActExp) and A04. Requirements or Instructions of Parent Company (A04.ReqParent)" under coercive pressure are not used in the model to avoid issue of incompleteness because the items are not applicable to the respondents.

Summary of Structural Model

The Structural Model involves examining the model's predictive capabilities and the relationships between the constructs. Table 6 shows the summary of result of Structural Model.

Table 6: Result Summary for Structural Model

	VIF <5	T Statistics >1.96 or >1.645	P Values < 0.05	Path Coefficient	R^2	f^2	Q^2
Coercive-> Greenadopt	1.660	7.195	0.000	0.621		0.431	
Mimetic-> Greenadopt	2.420	1.250	0.211	-0.146		0.016	
Normative->Greenadopt	2.015	2.539	0.011	0.247		0.056	
Greenadopt					0.461		0.264

Based on Table 6 above, the results indicate that all the Collinearity Statistics (VIF) <5, hence no collinearity exists. The paths are statistically significant using a one-tailed test (T Statistic > 1.645) or a two-tailed test (T Statistic > 1.96) and P value <0.05 except for Mimetic->Greenadopt (P=0.211>0.05; T Statistic<1.645) which is not significant. Looking at the path coefficient which is the relative importance of the exogenous driver constructs in predicting the dependent construct green practice adoption (Greenadopt), the study finds that coercive pressure (Coercive=0.621) is most important for green initiatives adoption, followed by normative pressure (Normative=0.247). The mimetic pressure (Mimetic=-0.146) is not important. The predictive accuracy (R2) =0.461 indicates that the model's predictive accuracy are close to moderate. The result of effect size (f2) indicates that Coercive=0.431 has a moderate effect, Normative=0.056 have a small effect and Mimetic=0.016 has a very small effect in producing the R2 for green initiatives adoption. Furthermore, the results show that the blindfolding and predictive relevance (Q2) =0.264 is considerably above zero, thus providing support for the reputation model's predictive relevance for the endogenous constructs.

RESEARCH FINDINGS AND DISCUSSION

Effect of Coercive Pressure on Adoption of Green Initiatives

Based on the results of data analysis, coercive pressure significantly affected the adoption of green initiatives in Malaysian PLCs, hence, the hypothesis H1 was supported. Coercive pressure is one of the key drivers of green initiatives adoption in Malaysian PLCs. In the present study, the companies were more likely to adopt green initiatives to comply with the requirements of the Malaysia Environmental Acts and Regulations, Bursa Malaysia's requirements, requirements of trading partners, and Environmental Acts and Regulations in export countries for companies that do export. The results determined that those in powerful positions could exert coercive pressure on those PLCs to adopt green practices. Those in powerful positions could exercise their power to pressure acceptance of new sustainable rules, such as some firms are now pressurised to undertake carbon audits and report the pollution emission. Coercion to adopt green initiatives in some cases has been more successful than voluntary adoption of green initiatives.

Institutional theory through coercive isomorphism explains that organisations operate according to legal mandates to gain social approval to survive. Coercive pressure in institutional theory is an authoritative force imposed primarily, but not exclusively, by government mandate or threat of mandate. As most companies are still at the beginning phase of adoption of green initiatives, these companies are highly government-dependable regarding their green practices. In this matter, Malaysian government is seen serious in initialising, motivating, and regulating the green initiatives, for example placing target and budget through the five-yearly Malaysia development plans targeting towards realising the Vision 2020 that sees Malaysia as a fully developed country focusing on environmental sustainability. The Prime Minister in 2004 has also introduced Hibiscus Award that was launched to support ethical funds or social responsibility investment funds. Besides that, there are also environmental policies and regulations being imposed to support the mentioned initiatives especially for CSR (Amran &

Devi, 2008; Hasan & Adnan, 2002; Mahyuddin & Rao, 2003). As many of the companies still need government support in terms of awareness, monetary, and technical incentives, the fear of legal sanction is one of the main reasons why organisations implement green initiatives. Additionally, government regulations also have a significant influence on growth, profitability, stability, and corporate long-term survival. The regulations also could determine technologies that must be used, could stipulate specific environmental targets that must be achieved, and could create economic frameworks for redistributing environmental costs and benefits.

From the sub-analysis in the earlier section, the coercive pressure from the Acts and Regulations in the export countries will significantly influence the adoption of green initiatives. It indicates that the Acts and Regulations from export countries also drive the adoption of green initiatives in PLCs that are exporting. Adherence to the export countries' requirements is needed for the companies which are striving towards global market expansion and growth. The sub-analysis of this study also indicates that the coercive pressure with the requirements or instructions of parent company significantly influence the adoption of green initiatives. It indicates that the requirements or instructions of parent company also drive the adoption of green initiatives among Malaysian PLCs that have parent companies. This is because the subsidiaries must align the corporate governance practices along with the corporate group.

In addition, the finding of this study highlights that coercive pressure significantly influences the adoption of green initiatives and this is consistent with those reported in the earlier empirical studies of Zhu *et al*. (2013) on Chinese manufacturers, Zhang *et al*. (2014) on road freight transportation industry in Nanjing, China, as well as Darnall *et al*. (2008) on the facility manufacturing sector across Canada, Hungary, Germany, and the United States.

Effect of Mimetic Pressure on Adoption of Green Initiatives

Based on institutional theory, mimetic pressure arises as a consequence of high uncertainty whereby the imitation of norms or practices in the organisation's institutional field is to lessen the threat of uncertainty in the environment (DiMaggio & Powell, 1983; Meyer & Rowan, 1977). In this study, mimetic pressure did not significantly affect the adoption of green initiatives in Malaysian PLCs, and hence, hypothesis H2 was not supported. PLCs' decisions to adopt green initiatives were not influenced by the green strategies adopted by their competitors in the same industry, or green strategies by successful companies in other industries. Based on in-depth interviews with companies A, B, and C, the uncertainty of future green development has made the PLCs to delay their green initiatives. At the moment, there is no best model of green company to imitate and imitation of green strategies of others will incur extra costs. This has discouraged companies to imitate others because most business organisations are cost and profit-oriented and customer-driven. If it will save cost and customers demand for green, then these companies would go green, and not solely because of competitors or other companies' actions. Many companies are still dependent on government or other authorities as a source of ideas and practices rather than the model of other companies. Hence, mimetic pressure is insignificant at the moment to drive the green initiatives in Malaysian PLCs. However, the findings are contradicting with Zhu *et al*. (2013) who found that mimetic pressure drives manufacturers to adopt green supply chain management practices that indirectly affect

the economic performance of companies in China. Liu *et al*. (2010) similarly reported a significantly positive effect of the externally mimetic pressure on the corporate environmental management in China. These have been largely attributed to a higher sensitivity of Chinese companies to the market factors. In the Malaysian context, PLCs go green on mandatory basis since 2007 when they are required to produce CSR report and this mandate has been in practice for about ten years. PLCs in Malaysia are more profit and customer oriented. Even though some PLCs have some major competitors in the market but they are not influenced by strategies of competitors and strategies of successful companies, irrespective of whether they are in the same industry or not. This is because for them green initiatives will incur extra cost in short run even though they believe that there are some long-term benefits and customers' demand for green products or services is not prevalent yet.

Effects of Normative Pressure on Adoption of Green Initiatives

Referring to the results of data analysis, it shows that normative pressure significantly affects the adoption of green initiatives in Malaysian PLCs, hence, hypothesis H3 is supported. Normative pressure is one of the key drivers of green initiatives adoption in Malaysian PLCs. The concerns and complaints by the public (e.g. communities and non-government organisations), the actions taken by industrial or trade associations (Malaysia Automotive Association, Malaysia Palm Oil Association, Associate of Environmental Consultants & Contractors in Malaysia), and the support from professional groups (e.g. Malaysian Institute of Accountants, Institutes of Engineers Malaysia, Federation of Malaysian Manufacturers) significantly affect the adoption of green initiatives among the Malaysian PLCs.

Institutional theory through normative pressure explains that formal education and professional networks influence the development of organisational norms, values, and beliefs. As green issues are the concerns of professionals locally and globally, they form a proactive group that set guidelines and approaches for green practices that in turn influence the organisational norms, values, and beliefs. For example, professional bodies have issued several recommendations and guidelines regarding environmental related matters in Malaysia which include the Malaysia Financial Reporting Standards (MFRS) by the Malaysian Accounting Standards Board (MASB) and the Environmental Reporting Guidelines by the Association of Chartered Certified Accountant's (ACCA). The MFRS 101 on "Presentation of Financial Statements" encourages business entities to prepare environmental report to supplement the financial statements. Another example is the ACCA with the collaboration of the Malaysian Department of Environment (DOE) published the "Environmental Reporting Guidelines for Malaysian Companies" in March 2003. These recommendations of professional groups and associations have influenced organisational green practices. The finding of this study that normative pressure significantly influences the adoption of green practices is consistent with earlier empirical studies of Zhu *et al*. (2013), Zhang *et al*. (2014), and Darnall *et al*. (2008).

Extent of Green Initiatives Adoption

The results of data analysis showed that the extent of green initiatives adoption in Malaysian PLCs is rather modest. The PLCs do practice a certain extent of waste management, recycling,

energy saving, environmental or health-safety measures, process redesign for environmental and health-safety, and green supply chain. Based on findings from the in-depth interviews with the top management of companies A, B and C, the extent of the adoption depends on the nature of industries, beliefs of the top-level managers, employee responsibility, education received, culture and pressure from certain group of concerns. Industries that require high level of clean and healthy environment which need to be regularly checked by Health Department such as poultry industry, extensively adopt green initiatives. For example, in the present study it was found that they systematically managed industrial wastes, otherwise, it would lead to diseases onto their products, employees, and surrounding communities.

Companies also do charitable activities such as paper wastes were given for free to those in need. For this kind of industry, the top managers support the green activities, as well as encourage and reward staff adopting or practicing green initiatives. Normally, companies would consider new green technology if it would give some benefits and cost economically. For some companies, going green is not a priority for them, but others do make it a priority because of their beliefs and awareness on CSR activities.

CONCLUSION

In conclusion, the extent of the adoption of green initiatives in Malaysian PLCs is found to be significantly affected by coercive pressure and normative pressure while mimetic pressure does not affect the adoption of green initiatives. The findings suggest that Malaysian PLCs were very much influenced by regulatory authorities, professionals, and trade associations.

The extent of green initiatives adoption in Malaysian PLCs is considered moderate. The findings suggest that Malaysian PLCs are not so proactive but are in progressing stage in adopting green practices. Malaysian PLCs need more incentives in terms of exposure on green technologies in advanced countries, technical training, resources, and more effective monitoring and enforcement of rules and regulations.

Theoretically, this research highlights the role of institutional theory in adoption of green initiatives by PLCs. Practically, regulatory authority or policy makers may facilitate and encourage effective implementation of green initiatives by providing financial incentives, technical resources, governmental subsidies, tax incentives, training or pilot green projects and green awareness. PLCs also need banks to offer financing at lower rates for environmentally friendly technologies, and lower insurance premiums to protect against environmental risks.

This current study only considers the institutional theory and does not examine the informal control processes such as group norms and socialization, and certain cultures that may also impact the adoption of green initiatives. Hence, future researches can be done in different countries, different types of organizations, and applying different methods and theories.

REFERENCES

Abd-Rahman, A., Ho, J.A. & Rusli, K.A. (2014) Pressures, Green Supply Chain Management Practices and Performance of ISO 14001 Certified Manufacturers in Malaysia *Int. Journal of Economics and Management 8* (S): 1 – 24.

ACCA (2014). *Survey on Sustainability.* ACCA Global.

Amran, A. & Devi, S. S. (2008). The impact of government and foreign affiliate influence on corporate social reporting: The case of Malaysia. *Managerial Auditing Journal,* 23(4), 386–404. doi:10.1108/02686900810864327.

Arias, M.E. & Guillen, M.F. (1998). *The transfer of organizational management techniques.* In: Alvarez, J.L. (Ed.). The Diffusion and Consumption of Business Knowledge. Macmillan, London, pp. 110e137.

Banerjee, S.B. (2001). Managerial perceptions of corporate environmentalism: interpretations from industry and strategic implications for organizations. *Journal of Management Studies* 38 (4), 489–513.

Berrone, P., Cruz, C., Gomez-Mejia, L., & Larraza-Kintana, M. (2010). Socioemotional wealth and corporate responses to institutional pressures: Do family-controlled firms pollute less? *Administrative Science Quarterly,* 55, 82-113.

Bouwens, J. & Abernethy, M. A. (2000). The consequences of customization on management accounting system design. *Accounting, Organizations and Society,* 25, 221–241.

Bowen, F., Cousins, P., Lamming, R., & Faruk, A. (2001a). Horses for Courses: explaining the gap between the theory and practice of green supply. *Greener Management International,* 35(Autumn), 41-60.

Brundtland G.H. (1987). Our Common Future. *World Commission on Environment and Development*, Brussels.

Buchanan, T., Ali, T., Heffernan, T.M., Ling, J., Parrott, A.C., Rodgers, J., & Scholey, A.B. (2005). Nonequivalence of on-line and paper-and-pencil psychological tests: The case of the prospective memory questionnaire. *Behavior Research Methods,* 37(1), 148-154. doi: 10.3758/BF03206409.

Buniamin, S. (2010). The quantity and quality of environmental reporting in annual report of public listed companies in Malaysia, 4(2), 115–135.

Buniamin S., Alrazi B., Johari N., & Rahman N. (2008). An Investigation of the Association between Corporate Governance and Environmental Reporting in Malaysia. *Asian Journal of Business and Accounting* 1, p. 639-647.

Bursa Malaysia (2007). *Corporate social responsibility in Malaysian PLCs, an executive Summary*. http://klse.com.my/website/bm/about us/the organization/csr/downloaded/csr_booklet.pdf/ (accessed July 12, 2008).

Bursa Malaysia Sustainability Report (2013).

Carter, C. R., & Carter, J. R. (1998). Inter-organizational determinants of environmental purchasing: Initial evidence from the consumer products industries. *Decision Sciences,* 29(3), 659-684.

Chan, R. Y. K. (2010). Corporate environmentalism pursuit by foreign firms competing in China. *Journal of World Business*, 45(1), 80–92.

Chen, W. & Soyez, D. (2003). The greening of industry: a research approach of industrial environmental geography. *Geographical Research,* 22 (5), 601e608.

Churchill, G.A. & Brown, T.J. (2004). *Basic marketing research,* 5th ed., South-Western: Ohio.

Clark, M. (2005). Corporate environmental behavior research: informing environ- mental policy. *Structural Change and Economic Dynamics* 16, 422e431.

Cohen, J. (1992). A power primer. *Psychological Bulletin,* 112, 155-159.

Collins, R. (1979). T*he Credential Society*. New York, Academic Press.

Darnall, N., Henriques, I., & Sadorsky, P. (2008). Do environmental management systems improve business performance in an international setting? *Journal of International Management,* 14(4), 364–376. doi:10.1016/j.intman.2007.09.006.

Davidsson, P., Hunter, E., & Klofsten, M. (2006). Institutional Forces – The Invisible Hand that Shapes Venture Ideas. *International Small Business Journal.* 24(2). 115-131.

Department of Environment (DOE) (2010). *Quaterly Report*.

DiMaggio, P.J. & Powell, W.W. (1983). The Iron Cage Revisited: Institutional Isomorphism and Collective Rationality in Organizational Fields. *American Sociological Review* 48:147-160.

DiMaggio, P.J. & Powell, W.W. (1991). *Introduction in The New Institutionalism in Organizational Analysis,* edited by Walter W. Powell and Paul J. DiMaggio. Chicago: University of Chicago Press, Pp. 1-38.

Etzion, D. (2007). Research on organizations and the natural environment, 1992– present: a review. *Journal of Management* 33 (4), 637–664.

Gonzalez-Benito, J. & Gonzalez-Benito. O. (2006). A review of determinant factors of environmental proactivity. *Business Strategy and the Environment,* 15(2), 87–102.

Guth, J. & Steger, U. (2008). Corporate Sustainability in ASEAN – A look at how managers in Singapore, Malaysia and Thailand respond to it, 41(January).

Hair J.F, Hult G.T.M, Ringle C.M, & Sarstedt M. A. (2014). *Primer on partial least squares structural equation modeling.* LA: Sage Publication Inc.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice,* 19, 139-151.

Hair, J. F., Anderson, R. E., Tatham, R. L., & Black, W. C. (1998). *Multivariate data analysis* (5th ed.). Upper Saddle River, NJ: Prentice Hall.

Handfield, R., Walton, S. V., Seegers, L. K., & Melnyk, S. A. (1997). Green value chain practices in the furniture industry. *Journal of Operations Management,* 15(4), 293- 315.

Hasan, M.N. & Adnan, A.H. (2002). Sustainable Development Indicator Initiatives in Malaysia - Novel Approach and Viable Framework, http://www.sarcs.org/wwwroot/documents/nordin.pdf, retrieved on 2 July 2005.

Hoffman A.J. (1997). *From heresy to dogma: An institutional history of corporate environmentalism San Francisco:* New Lexington Press.

Hutt, R. (2016). *World Economic Forum*.https://www.weforum.org/agenda/2016/01/what-are-the-10-biggest-global challenges/

KPMG (2015). *International Survey of Corporate Responsibility Reporting.* Retrievedfromhttps://home.kpmg.com/content/dam/kpmg/pdf/2015/12/KPMG survey of CR reporting 2015.pdf.

Larson, M.S. (1977). *The rise of professionalism: A sociological analysis.* Berkely, University of California Press.

Lineback, J.F. & Thompson, K.J. (2010). Conducting nonresponse bias analysis for business surveys. *Joint Statistical Meetings (JSM)*, Vancouver, Canada, July 31– August 5.

Liu, X., Liu, B., Shishime, T., Yu, Q., Bi, J., & Fujitsuka, T. (2010). An empirical study on the driving mechanism of proactive corporate environmental management in China. *Journal of Environmental Management,* 91(8), 1707–17. doi:10.1016/j.jenvman.2010.03.011.

Maarten, N, Worrell, E, & Masanet, E. (2008). *Energy efficiency improvement and cost saving opportunities for the petrochemical industry - An energy star(r) guide for energy and plant managers.* Lawrence Berkeley National Laboratory Permalink.

Magrini, A. & Lins, L. D. S. (2007). Integration between environmental management and strategic planning in the oil and gas sector. *Energy Policy,* 35(10), 4869–4878. doi:10.1016/j.enpol.2007.04.033.

Mahyudin, N. & Rao, S.P. (2003). Integration of environmental sustainability issues in the teaching of built environment in Malaysian universities. *First International Conference on Environment Research and Assessment*, Bucharest, Romania, 23-27 March.

Malhotra, N. K., Hall, J., Shaw, M., & Oppenheim, P. (2006). *Marketing research: An applied orientation* (3rd ed.). Prentice Hall: New South Wales.

Meyer, J. & Rowan, B. (1977). Institutionalized organizations: formal structure as myth and ceremony. *American Journal of Sociology* 83: 340-63.

Milstein, M., Stuart, L.H., & Anne, S.Y. (2001). *Coercion breeds variation: the differential impact of isomorphic pressures on environmental strategies.* In: Andrew, H., Marc, V. (Eds.), Organizations, Policy and the Natural Environment: Institutional and Strategic Perspectives. Stanford University Press, Stanford, California.

Mokthsim, N. & Salleh, K. (2014). Malaysia's Efforts Towards Achieving a Sustainable Development: Issues, Challenges and Prospects. The 3rd International Geography Symposium, *Proceedia-Social and Behavioral Science 1*20(2014) 299-307.

Morelli, J. (2011). Environmental sustainability: A definition for environmental professionals. *Journal of Environmental Sustainability:* Vol. 1: Iss. 1, Article 2.

New, S., Green, K., & Morton, B. (2000). Buying the Environment: The multiple meanings of green supply. In S. Fineman (Ed.), *The Business of Greening* (pp. 33-53.). London: Routledge.

Nunnaly, J.C. (1978). Psychometric Theory, McGraw-Hill Book Company, New York.

Oliver, C. (1991). Strategic Responses to Institutional Processes. *The Academy of Management Review* 16(1): 145-179.

Oppenheim, A. N. (2001). *Questionnaire Design, Interviewing and Attitude Measurement.* New York: Basic Books, Inc.

Robert, G., (1999). Paradigms and Research Methods. *Research Methods Forum*, Vol. 4, Academy of Management, Research Methods Division.

Romlah, J., Sharifah, B., Takiah, M., & Nordin, M. (2002). An investigation on environmental disclosures: Evidence from Selected Industries in Malaysia. *International Journal of Business and Society* 3(2), 55-68.

Roscoe, J.T. (1975). *Fundamental Research Statistics for the Behavioural Sciences.* 2nd edition. New York: Holt Rinehart & Winston.

Saleh, M., Zulkifli, N., & Muhamad, R. (2010). Corporate social responsibility disclosure and its relation on institutional ownership: Evidence from public listed companies in Malaysia. *Managerial Auditing Journal*, 25(6), 591–613. doi:10.1108/02686901011054881.

Sarkis, J. (2003). A strategic decision framework for green supply chain management. *Journal of Cleaner Production,* 11(4), 397-409.

Schrettle, S., Hinz, A., Rathje, M.S., & Friedli, T. (2014). Turning sustainability into action: Explaining firms' sustainability efforts and their impact on firm performance. *Int. J. Production Economics,* 147, 73–8484.

Scott, W. R. (2001). *Institutions and Organizations.* Second Edition. Thousand Oaks, CA: Sage Publications.

Sekaran, U. (2003). *Research method for business: A skill building approach.* 4th edition, John Wiley & Sons.

Sharma, S. & Henriques, I. (2005). Stakeholder influences on sustainability practices in the Canadian forest products industry. *Strategic Management* Milstein

Sumiani, Y., Haslinda, Y., & Lehman, G. (2007). Environmental reporting in a developing country: a case study on status and implementation in Malaysia. *Journal of Cleaner Production*, 15(10), 895–901. doi:10.1016/j.jclepro.2006.01.012.

Sustainable Living Resource Guide (2013). *Going Green.* Middletown Thrall Library, Copyright © 2008

Trowbridge, P. (2001). A Case Study of Green Supply-Chain Management at Advanced Micro Devices. *Greener Management International,* 35(Autumn), 121-135.

Urbach, N. & Ahlemann, F. (2010). Structural equation modeling in information systems research using partial least squares. *Journal of Information Technology - Theory and Application*, 11(2):5-40.

U.S. EPA (2006). Teaming Up to Save Energy. United States Environmental Protection Agency, Climate Protection Division, Washington, DC, USA. Report 430-K-05-007.

Walker, H., Sisto, L.D., & McBain, D. (2008). Drivers of environmental supply chain practices: lessons from the public and private sectors. *Journal of Purchasing and Supply.*

Westphal, J.D., Gulati, R. & Shortell, S. M. (1997) Customization or Conformity? An Institutional and Network Perspective on the Content and Consequences of TQM Adoption. *Administrative Science Quarterly*, 42(2), 366-394.

World Summit United Nations General Assembly (2005). 2005 *World Summit Outcome,* Resolution A/60/1, adopted by the General Assembly, 15 September 2005.

Zainal, D., Zulkifli, N., & Saleh, Z. (2013). Corporate Social Responsibility Reporting in Malaysia : A Comparison Between Shariah and Non-Shariah Approved Firms, 15(7), 1035–1046. doi:10.5829/idosi.mejsr.2013.15.7.11034.

Zhang, Y., Thompson, R. G., Bao, X., & Jiang, Y. (2014). Analyzing the Promoting Factors for Adopting Green Logistics Practices : A Case Study of Road Freight Industry in Nanjing ,. *Procedia - Social and Behavioral Sciences,* 125, 432–444. doi:10.1016/j.sbspro.2014.01.1486.

Zhu, Q., Sarkis, J., & Lai, K. (2013). Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices. Journal of Purchasing and Supply Management, 19(2), 106–117. doi:10.1016/j.pursup.2012.12.001.

Zikmund, W., G. (1997). Business Research Methods. Dryden Press.