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The Influence of Leaders' Past Environmental-related Experiences and Positive Deviance Behaviour in Green Management Practices

(Pengaruh Pengalaman Berkenaan Alam Sekitar Ketua Syarikat dan Perlakuan Penyimpangan Positif dalam Amalan Pengurusan Hijau Syarikat)

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ABSTRACT

There is limited research based on the perspective of neo-institutional that examines the cognitive pressures related to green management practices. The current study examined the relationship between the past environmental related experiences which one of the cognitive dimensions of leader in public listed company and its relationship with positive deviance behaviour in green management practices. The results revealed a significant positive relationship between the past environmental related experiences of the board of directors and positive deviance behaviour in green management practices; however for CEO's past environmental related experiences and its interaction effect with board of director's past environmental experiences are otherwise. This study reveals that the understanding regarding the intersection between sound corporate governance and green management practices is very important in companies deviating positively in green management practices.

Keywords: Green management practices; positive deviance; neo-institutional theory; corporate governance; past environmental related experience

ABSTRAK

Terdapat kajian yang terhad berdasarkan perspektif Neo-institusi yang mengkaji tekanan kognitif berkaitan dengan amalan pengurusan hijau. Kajian ini mengkaji hubungan antara pengalaman berkenaan alam sekitar yang merupakan salah satu dimensi kognitif ketua syarikat bagi syarikat tersenarai awam dan hubungannya dengan perlakuan penyimpangan positif dalam amalan pengurusan hijau. Hasil kajian menunjukkan hubungan positif yang signifikan antara pengalaman berkenaan alam sekitar ahli lembaga pengarah syarikat dengan perlakuan penyimpangan positif dalam amalan pengurusan hijau; akan tetapi, bagi pengalaman berkenaan alam sekitar ketua pegawai eksekutif syarikat dan kesan interaksinya bersama pengalaman berkenaan alam sekitar ahli lembaga pengarah syarikat adalah sebaliknya. Kajian ini meningkat kefahaman antara jurang amalan tadbir urus korporat dengan amalan pengurusan hijau syarikat dalam memacu perlakuan penyimpangan positif dalam amalan pengurusan hijau.

Kata kunci: Amalan pengurusan hijau; penyimpangan positif; teori neo-institusi; urus tadbir korporat; pengalaman berkenaan alam sekitar

INTRODUCTION

In response to environmental sustainability pressures such as climate change, the concept of green management practices is rapidly evolving as a management paradigm for improving business success and environmental protection (Amran et al. 2016). Empirical studies suggest that firms achieve higher levels of profitability and competitive advantage through the successful implementation of proactive green management practices (Tan et al. 2016). Nevertheless, it has been found that the majority of companies worldwide respond to these pressures by adhering to accepted and legitimated environmental standards rather than proactively adopting green management practices that go beyond regulative and normative expectations to offer broad benefits to our planet. Companies that proactively go beyond the mandatory and normative requirements in green management practices can be assumed to have deviated positively in their environmental sustainability practices (Walls & Hoffman 2013). Previous study reveals that positive environmental deviance can lead to the elevation of business norms and associated broader scale changes in green management practices (Walls & Hoffman 2013). It is imperative to examine what factors lead business leaders to encourage their companies to deviate positively in green management practices, since recent studies have argued that positive deviance behaviour can actively be stimulated by business decision makers (Mertens & Recker 2017).

In this context, understanding the factors that lead business leaders to encourage positive deviance behaviour in green management practices in environmentally sensitive public listed companies assumes significance as the range of corporate governance mechanisms have

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a huge environmental impact. Conceptualizing the green management practices within the positive deviance framework, this study contributes to preliminary but vital insights in positive deviance behaviour in green management practices, particularly in environmentally sensitive public listed companies. Despite the growing importance concerning the intersection between corporate governance and green management practices, its impact on positive environmental deviance has rarely been investigated (Walls & Hoffman 2013).This study attempts to fill the research gap. The paper begins with a discussion on the theoretical context and research concerning role positive deviance behaviour in green management practices. Subsequently, hypotheses are tested with empirical evidence from environmentally sensitive public listed companies in Malaysia. The paper then ends with an interpretation of the results.

LITERATURE REVIEW

Institutional approaches to green management practices purport that the external constituent pressure on firms to address green management practices derive from coercive, normative, and mimetic sources (Scott 2013). Coercive or normative pressures come from institutional agents, such as the government, local community, interest groups, and professional bodies, whereas mimetic influences stem from similar or related companies (Amran, Periasamy & Zulkafli 2014). Coercive pressures consist of regulatory pressures, competitive market pressures and customer pressures, which have been identified as the main drivers of green management practices worldwide (PwC 2013). Normative pressures originate from industry associations and certification agencies that have influenced the development of environmental management technologies, such as Waste Management Systems, Effluent Treatment Plan, Life Cycle Analysis, Industrial Ecology, Industrial Symbiosis, Recycling, and so on (Fernando & Hor 2017). While mimetic pressures occur in business fields where green management practices bring economic returns that lead companies to implement similar practices in the adoption of voluntary green management practices (Amran et al. 2014).

Although this perspective might be expected to show that the green management practices of firms are similar if they face similar pressures, evidence suggests that such management practices can differ substantially (Abdullah et al. 2016). In reality, companies have substantial room to manoeuvre when responding to institutional pressures (Scott 2013), and, with regard to green management practices, firms' responses range from the symbolic to the substantive (Rodrigue, Magnan & Cho 2013), and may deviate negatively (Pedersen et al. 2013) or positively (Walls & Hoffman 2013) from the norms in the institutional field. However, exactly why diverse responses occur in the context of shared institutional pressures has been more difficult to determine.

As a result of institutional deviance, the new version of institutionalism, neo-institutionalism, was expanded to account for the transformation and change of institutions, as well as the heterogeneity of actors and practices in fields (Greenwood et al. 2008). Apart from coercive, normative and mimetic pressures, this theory appears to state that the cognitive pressures have to be built first, then the normative pressures, and, lastly, the coercive pressures (Fini & Toschi 2015). Cognitive pressures are the internal elements of the company that encompass the cognitive schemas, mindsets, beliefs, and assumptions shared by leaders and subordinates about their shared purpose, mutual interactions and work completed together (Scott 2013). Moreover, cognitive pressures focus on the individual, such as the interpersonal infrastructure of sense-making that influences an individual's decision making (Fini & Toschi 2015). Studies pertaining to coercive, normative, and mimetic pressures have received considerable attention in the institutional theory and business and natural environment, while studies pertaining to cognitive pressure have received comparatively less attention (Hoffman & Georg 2013). Previous studies uncovered that the success of green management practices largely depends on the environmental knowledge, expertise, and attitude of top management (Roy & Khastagir 2016). Strategic management research also has long considered cognition as an important attribute of decision makers of the firms (Helfat & Peteraf 2014). In fact, the cognitive influence of leaders, such as CEOs and board of directors, may trigger the change in the interpretation of institutional pressures relating to green management practices and the subsequent strategic deviance for companies in respect of green management practices (Walls & Hoffman 2013).

GREEN MANAGEMENT PRACTICES

Green management practices have received substantial importance in public listed firms with particular emphasis on eco-friendly product design, design of the production process, and innovation in novel technology (Roy & Khastagir 2016). It can be understood as a concept that embraces environmental management, environmental disclosure, and environmental performance (Alrazi, de Villiers & van Staden 2015). It also consists of various management practices to minimize the impact of business on the environment including 1) environmental management of material used in the production process; 2) environmental management of energy used in the operation; 3) environmental management related to water usage; 4) environmental management of how to handle atmospheric emissions; 5) environmental management of the waste produced; 6) environmental management of biodiversity; 7) environmental management of business products and processes; 8) environmental management related to environmental expenditure, environmental accounting, scoring systems, and environmental reporting practices, 9) environmental management related to stakeholders; 10) environmental certification; and 11) environmental management related to governance and policy (Hoffman & Georg 2013). A company's green management practices can be categorized based on three types of firm's strategic behaviour: 1) non-compliance strategic behaviour (e.g. non-conformance to institutional pressures

related to green management practices); 2) compliance strategic behaviour (e.g. compliance to institutional pressures related to green management practices); and 3) beyond-compliance strategic behaviour (e.g. company voluntarily goes beyond institutional pressures related to green management practices) (Albertini 2013a). This aforementioned strategic behaviour demonstrates that companies have different objectives or motivations in their green management practices in terms of whether to just deny, respond symbolically or respond substantively to institutional pressures related to green management practices (Rodrigue et al. 2013).

POSITIVE DEVIANCE AND GREEN MANAGEMENT PRACTICES

Positive deviance describes behaviour that 1) deviates from the norms of a reference group, 2) is positive in terms of intention or effects, and 3) conforms to hypernorms (i.e. is not harmful for other groups or society as a whole (Herington & van de Fliert 2017). In corporate green management practices, positive deviance can be described as the strategic behaviour of the corporations to improve the impact of environmental sustainability practices beyond the required regulation, which may lead to elevation of organisations and industry norms with the association of broader scale changes (Walls & Hoffman 2013). Positive deviance can be deemed as more sustainable green management practices and is related to more sustainable behaviour, such as appreciates, attuned, benevolent, caring, endures, positioned, and reciprocating; normal behaviour can be described as social responsible green management practices and is related to less unsustainable behaviour, such as complies with the law, adheres to business norms, and does what is required; while negative deviance is related to non-compliance green management practices and is related to unsustainable behaviour, such as over-consumes, apathetic, indifferent, harming, greedy, arrogant, and ignorant (Sadler-Smith 2013).

A company that deviates positively in green management practices will 1) intentionally minimize or eliminate the negative impacts of its business activities or products on the natural environment (Menguc & Ozanne 2005); 2) undertake environmental strategies in order to minimize emissions, effluent, and waste (Rupley, Brown & Marshall 2012); 3) focus on the process of making its product more sustainable throughout its lifecycle to attain balance among environmental sustainability aspects as well as not compromise on the cost, quality, function, or technical issues of the products (Gunasekaran & Spalanzani 2012); and 4) employ the design of an integrated approach that is capable of dealing with environmental sustainability and waste while ensuring economic and social prosperity (Khalili et al. 2015). Positive deviance in green management practices leads to 1) positive behaviour changes towards environmental sustainability practices; 2) information gathering related to in-depth inquiries and norms studies of environmental management practices (e.g. the process of elevation of organizational and industry norms with respect to environmental sustainability practices); and 3) social mobilization of stakeholders to have positive and virtues of environmental sustainability practices and understand environmental management practices that go beyond the managed destruction or regeneration of the natural world (Sadler-Smith 2013).

LEADERSHIP AND POSITIVE DEVIANCE IN GREEN MANAGEMENT PRACTICES

Leadership can best enable the emergence of positive deviance (Mertens & Recker 2017). In the context of environmental sustainability, leaders own transformational leadership behaviour, such as individualised consideration, intellectual stimulation, inspirational motivation and idealised influences, which can influence environmental sustainability practices within organisations (Amran et al. 2016). Leader power in terms of environmental expertise (Walls & Berrone 2015); leaders' value and environmental attitudes (Ervin et al. 2013); leaders' interlocked with pro-environmental stakeholders; and leaders' past environmental-related experiences (Walls & Hoffman 2013) have been found to be among the factors that influence the positive deviance behaviour of firms in green management practices. As the leaders have been found to be the primary committers of "greenwash" practices (Kim & Lyon 2014), they may stimulate the emergence of positive deviance behaviour in green management practices. As corporate governance has been considered to be an important mechanism in green management practices, particularly for public listed companies, the leadership of the CEO and Board of Directors is important in respect of positive deviance behaviour in green management practices. Although the CEO and Board of Directors are both important actors in corporate governance mechanisms, they have different roles whereby the main responsibilities of the CEO include 1) developing and implementing the high-level strategy of the firm; 2) making major corporate decisions; 3) managing the overall operations and resources of the firm; and 4) acting as the main channel of communication between the board of directors and the corporate operations (Walls & Berrone 2015); while the board of directors are the representatives of the shareholders to establish corporate management related policies, formulate organizational strategy, and disseminate information and advice to the CEO (Kim & Ozdemir 2014). Green management practices can be considered to be governance-management duality because the governance aspect focuses on the desire of the stakeholders to monitor and assess the environmental performance, while the management aspect concerns the relationship of the management of a company with its stakeholders (Walls & Berrone 2015). Therefore, the CEO and board of directors may have different interests in directing themselves and the companies towards positive deviance behaviour in green management practices. It is also important to understand whether the CEO or

board of directors or their cooperation or interaction has an important role in deviating companies in green management practices.

COGNITIVE PRESSURES OF LEADERS WITH PAST ENVIRONMENTAL-RELATED EXPERIENCE IN GREEN MANAGEMENT PRACTICES

Past experiences shape leader thinking and mental models (Huff 1982), and permit them to develop specific skills and procedural knowledge regarding how specific management practices, such as green management practice, operate (Harris & Helfat 1997). Past experience can be obtained by leaders from their 1) educational background (Finkelstein, Hambrick & Cannella 2009); 2) occupational background (Golden & Zajac 2001); or 3) internal and external social capital (Barroso-Castro et al. 2015).Leaders obtain experience through external social capital by their employment on a full-time basis; seats on the board of other firms; and social capital in the form of their personal relationships, affiliations, and social standing(Johnson, Schnatterly & Hill 2012), while leaders obtain experience through inter-social capital by interpersonal relationships between themselves on the boards and specific committees (Barroso-Castro et al. 2015).Vast experience reflects in the expertise of the leader (Lines 2007). With regard to leaders' experiences on environmental issues, their past environmental-related experiences have been identified as an important antecedent of individual environmental behaviour (Dietz, Stern & Guagnano 1998). It has been proved that the environmental experience of individuals connects their environmental values to action (Hines, Hungerford & Tomera 1987). Within a company, environmental experiences and values shape organizational behaviour and managerially driven initiatives (Ervin et al. 2013). Environmentally experienced leaders have the expertise to foster the strategic changes of the company in green management practices and coordinate the substantive approach of the firm's environmental governance rather than the symbolic approach to environmental governance (Walls & Berrone 2015).

PAST ENVIRONMENTAL-RELATED EXPERIENCES OF CEOS AND BOARD OF DIRECTOR AND THEIR INTERACTION EFFECT

In terms of the CEO and board of director level, Peters and Romi (2013) exhibited that CEO's education background (e.g. environmental engineering or sciences or an MBA in environmental affairs) and their prior positions in environmentally-related fields or disciplines are among the important determinants of CEO's past environmental-related experience and have a positive influence on a firm's green management practices. Similarly, Rodrigue et al. (2013) contended that the environmental experience of directors could be obtained through previous jobs in environmental organizations; and familiarity with the context and related environmental issues of the industry in which the firms operate. In the same vein, Ortiz-de-Mandojana et al. (2012) revealed that boards of directors who interlock with environmentally green equipment suppliers; and with firms that provide knowledge-intensive services, acquired a vast amount of past environmental-related experience that has a positive association with a firm's adoption of proactive environmental strategies. Walls and Berrone (2015) and Walls and Hoffman (2013) classify the environmental experiences of CEOs and board of directors into two types: 1) content-based experience and 2) process-based experience. Content-based experience includes 1) the extent of their involvement in environmental activities in non-corporate organizations, such as foundations, NGOs, government bodies, and local communities; and 2) any honours or awards that they received for their environmental activities. While process-based experience pertains to the1) CEO's and director's previous occupations, directorships, and other corporate appointments based on their official environmental responsibilities in previous posts; and 2) prior membership of board sub-committees dedicated to serving environmental matters.

Walls and Berrone (2015) found that CEO's past environmental experiences have asignificant positive effect in reducing firm environmental sustainability performance. Likewise, board of directors also has a significant role in organizational interpretation and responses to various institutional pressures related to green management practices (PwC 2013). Based on the perspective of Neo-Institutionalism, specialized and environmental knowledge, as well as environmental-related work experience among CEOs, allow organizations to break away from the established institutional logics or norms related to green management practices. Previous studies revealed that 1) environmental awareness of CEOs (Tan et al. 2016); 2) CEOs' attitudes towards sustainable development (Ervin et al. 2013); 3) CEOs' different perceptions, attitudes and motivations regarding environmental pressures (Schneider & Meins 2012); and 4) CEOs with relevant environmental experience (Walls & Berrone 2015), are strong predictors for business proactive green management practices. From the corporate governance perspective, CEOs with past environmental-related experience and expertise will leverage their formal influence and power over other key governance members including the board of directors in order to lead the company to deviate positively in green management practices (Walls & Berrone 2015). Based on the perspective of Neo-Institutionalism, specialized and environmental knowledge, and environmental experience among members of the board of directors allow a company to break away from the established institutional logics or norms related to green management practices (Walls & Hoffman 2013). From the corporate governance perspective, a board of directors with past environmental-related experience will influence other key governance actors, such as CEOs and senior executives to direct firms towards a substantive approach in environmental governance practices in order to deviate positively in

respect of green management practices (Walls & Hoffman 2013).

Previous studies revealed that the interaction between the specific human and social capital bases of the board and the CEO, can be regarded as one of the indicators of board governance effectiveness (Sundaramurthy, Pukthuanthong & Kor 2014). From the perspective of Neo-Institutionalism, the interaction effects of the CEO and board of directors past environmental-related experience will make the environmental governance mechanism process smoother because both the CEO and the board of directors may share the same perception and knowledge pertaining to environmental sustainability-related issues, as well as ease the implementation and evaluation process in green management practices, which subsequently lead to positive deviance behaviour in green management practices (Rodrigue et al. 2013). Although the CEO and the board of directors share a similar set of past environmental-related experience and expertise, they may have different kinds of institutional logic in their corporate governance practices. The competing institutional logic of the CEO and the board of directors may be caused by self-serving incentives (Geng, Yoshikawa & Colpan 2015). Nevertheless, as they share the same set of environmental experience and expertise, they will share the same long-term environmentally sustainable oriented goal, which will outweigh their self-serving incentives, and, subsequently, can lead their company to deviate positively in their green management practices. Hence:

H_1 The past environmental-related experiences of CEOs are positively associated with the positive deviance behaviour of firms in green management practices.

H_2 The past environmental-related experiences of the board of directors are positively associated with the positive deviance behaviour of firms in green management practices.

H_3 The interaction of past environmental-related experiences of CEOs and past environmental-related experiences of the boards of directors positively influence positive deviance behaviour of firms in green management practices.

METHODOLOGY

To understand the role of leaders' past environmental-related experience and positive deviance behaviour in green management practices, this study chooses Malaysia as the institutional setting. The reason behind this is that there is a lack coercive pressure related to green management practices compared to normative and cognitive pressures in Malaysia. Among the normative and cognitive pressures on Malaysian Public Listed companies are the 1) Malaysian Environmental Sustainability initiatives, which focus on four areas: strengthening the enabling environment for green growth; adopting the sustainable consumption and production concept; conserving natural resources for present and future generations; and strengthening resilience against climate change and natural disasters (Economic Planning Unit 2015); and 2) various environmental sustainability guidance or training provided by the Malaysian stock exchange to the key governance decision makers of Malaysian public listed companies (PwC 2013). In fact, the current Malaysian Code on Corporate Governance, which was introduced in 2012, only focuses on the structure related to the independence of the board of directors (e.g. separating and establishing an independent chair of the board and the increase in the proportion of independent directors on the board) compared to the human and social capital aspect of key governance leaders, such as CEO and Board of Directors (MCCG 2012). As the positive deviance behaviour can actively be stimulated by leaders (Merterns & Recker 2017), Malaysia is a suitable setting for studying the effect of the CEOs and Board of Directors in deviating their green management practices from institutional norms. This study investigates positive deviance behaviour in the green management practices of Malaysian environmentally sensitive public listed companies by using secondary data observed from the year 2010 to 2014 (five-year observation). This period was chosen because of the significant normative and cognitive institutional pressures that were initiated by the Malaysian government and Malaysian stock exchange holding company (Bursa Malaysia) during that time.

To determine whether a company is from an environmentally sensitive industry or otherwise, this study uses the purposive sampling technique. The North American Industry Classification System (NAICS) code for environmentally sensitive industries, and guidelines by the Department of the Environment of Malaysia were used to determine whether a firm falls within an environmentally sensitive industry or otherwise. The NAICS is the standard used by the United States federal agencies to classify business establishments. This study is based on the list of environmentally sensitive industries (e.g. oil and gas extraction, mining, chemical manufacturing, transportation equipment manufacturing, or computer and electronic product manufacturing) that was developed by the Small Business Administration based on the NAICS code (Philippe & Durand 2011). While, based on the Department of the Environment of Malaysia, firms can be considered as highly environmentally sensitive if they are involved in operations, such as mining, chemicals, transportation, oil and gas, wood and timber, utilities, agriculture, construction and properties, or manufacturing (Buniamin et al. 2010). Based on the purposive sampling technique, this study found that 458 Malaysian public listed companies fall within environmentally sensitive industries. However, only 209 firms were chosen because the others were not listed in 2010 or did not disclose their green management practices during the study period in June 2015. The sample is considered sufficient as it represents 46 percent of the total population of 458 Malaysian public listed companies from environmentally sensitive industries. This study uses secondary data from the firms' published annual reports, stand-alone sustainability reports, company websites and OSIRIS (databases for listed and unlisted companies worldwide). The interpretative approach of content analysis was employed for all the sample firms' annual reports, stand-alone sustainability reports, and company

website, to measure the green management practices and the determinants. The expected number of observations over the five-year period for this study is 1045 firm-years (209 firms x 5 years = 1045 firms-years observation).

MEASUREMENT OF VARIABLES

Dependent Variable Positive Deviance Behaviour in Green Management Practices. Empirical research studying the relationship between green management practices and firm financial performance has used a large variety of green management measures, which can be classified into three categories 1) environmental management variables (Roy & Khastagir 2016), 2) environmental performance variables (Walls & Berrone 2015), and environmental disclosure variables (Walls, Phan & Berrone 2011). In this study, we measure green management practices based on environmental disclosure variables (Albertini 2013b). A previous study revealed that positively deviating firms in green management practices disclosed their proactive environmental management practices substantively (Albertini 2013a). This study measures fifteen types of green management practice by setting the scoring method that relates to a company's strategic behaviour in response to institutional pressures related to green management practices, such as 1) Non-Compliance Strategic Behaviour (NC) (*e.g.* non-conformance to institutional pressures related to green management practices); 2) Compliance Strategic Behaviour (C) (*e.g.* compliance to institutional pressures related to green management practices); and 3) Beyond-Compliance Strategic Behaviour (BC) (*e.g.* company voluntarily goes beyond institutional pressures related to green management practices) (Albertini 2013a).

Based on Table 1, the "NC" score is related to the non-compliance or deny aspect, which indicates that the company's strategic behaviour has not developed any environmental policy, and failed intentionally or by default to address the requirements of environmental regulation and social pressure (Nadler 1999). The "C" score is given for a company with strategic behaviour to comply with the environmental regulation, or that has implemented an "end-of-pipe" environmental solution that is corrective in minimising the risk, liabilities, and cost (Walls et al. 2011). The "BC" score is given for a company with strategic behaviour to minimise emissions and waste related to their operating activities (pollution prevention), minimise the life-cycle cost of the product (product stewardship), and minimise the environmental burden of firms' growth (sustainable development) (Rupley et al. 2012). This study aggregated the total score of a company's strategic behaviour of fifteen green management practices and classifies it with Green Management Practices (GMP) Scores per firm unit.

TABLE 1. Measurement of company's green management practices

No.	Green Indicators Management Practices	Scores for Green Indicators (NC = -1, C=1, BC=1)
1	Green Management Practices Related to Material	(NC = -1, C=1, BC=1)
2	Green Management Practices Related to Energy	(NC = -1, C=1, BC=1)
3	Green Management Practices related to Water	(NC = -1, C=1, BC=1)
4	Green Management Practices related to Atmospheric Emissions	(NC = -1, C=1, BC=1)
5	Green Management Practices related to Total waste (Include: Hazardous, toxic, radioactive)	(NC = -1, C=1, BC=1)
6	Green Management Practices related to Biodiversity	(NC = -1, C=1, BC=1)
7	Green Management Practices related to Products	(NC = -1, C=1, BC=1)
8	Green Management Practices related to Process	(NC = -1, C=1, BC=1)
9	Green Management Practices related to Environmental Expenditures	(NC = -1, C=1, BC=1)
10	Green Management Practices related to Other Accounting/Scoring Systems	(NC = -1, C=1, BC=1)
11	Green Management Practices related to Employee Training	(NC = -1, C=1, BC=1)
12	Green Management Practices related to Certification	(NC = -1, C=1, BC=1)
13	Green Management Practices related to Stakeholder Engagement	(NC = -1, C=1, BC=1)
14	Green Management Practices related to Environmental Policy	(NC = -1, C=1, BC=1)
15	Green Management Practices related to Reporting	(NC = -1, C=1, BC=1)
	Total Scores of 15 Indicators Management Practices	(Total Score)

Independent Variables Two explanatory variables are chosen to address H_1, H_2, and H_3; namely, Board of directors' past environmental-related experiences (BODENVEXP) and CEOs' past environmental-related experiences. Based on Table 2, this study measures the past environmental-related experiences based on the content and process based environmental-related experiences using the annual reports and OSIRIS database (Walls & Berrone 2015). This study coded any information that was relevant to past environmental-related experiences including 1) content-based environmental experience (e.g. the extent of Board of Directors and CEO involvement in environmental activities in non-corporate institutions, such as foundations, government organizations, and local communities; and honours or awards that they received for their environmental endeavours); and 2) process-based environmental experience (e.g. Board of Directors and CEO official environmental responsibilities in previous posts,

prior membership on board sub-committees dedicated to attending to environmental matters (Walls & Berrone 2015; Walls & Hoffman 2013). This study aggregates each CEO's and Board of Director's past environmental-related experience to firm level, for each year of data, by summing all the content and process based environmental experiences.

TABLE 2. The measurement index of CEO's and board of director's past environmental-related experience

No	Indicator of past environmental-related experiences	Scores for CEO or Board of Directors per firm level. (Have = 1, Not Have = 0)
1	The extent of CEOs' and board of directors' involvement in environmental activities in non-corporate institutions, such as foundations, NGOs, government bodies, and local communities	(Have = 1, Not Have = 0)
2	Honours or awards that CEOs and board of directors received for their environmental actions.	(Have = 1, Not Have = 0)
3	CEOs, and board of directors, official environmental responsibilities in previous corporate position.	(Have = 1, Not Have = 0)
4	CEOs, and board of directors, prior membership on board sub-committees dedicated to attending to environmental matters.	(Have = 1, Not Have = 0)
	Total Score Past Environmental-related Experience at the firm level for CEOs or Board of Directors.	(Total Score)

Control Variables Firm age (AGE), Return on assets (ROA), firm size (FIRMSI), leverage (DTCR), board size (BODSI), board independence (BODIND), firm leverage (DTCR) and institutional ownership (INTIOWN) are used as control variables in the study as previous study revealed the significant effect of those variables on company green management practices. Table 3 provides the operationalisation of control variables.

TABLE 3. Operationalisation of control variables

Control Variables	Operationalisation
Firm Age	Measured as the number of years since the firm was listed on Bursa Malaysia as of the end of 2010 (D'Amico et al. 2014).
Return on Assets	Measured as the percentage of total net income divided by total assets (Andrikopoulos & Kriklani 2013).
Firm Size	Measured based on firm's market capitalization (Peters & Romi 2013).
Board Size	Measured based on the total number of members on the board (Sundaramurthy et al. 2014).
Board Independence	Measured as the percentage of independent non-executive directors to the total number of directors on the board of a firm (Michelon & Parbonetti 2012)
Firm Leverage	Is measured by the company's debt divided by its total capital (Andrikopoulos & Kriklani 2013).
Institutional Ownership	Measured as a dummy variable that is equal to 1 if the firm's ownership is institutional ownership or equal to 0 otherwise (Peters & Romi 2013).

EMPIRICAL MODEL

To Test H_1, H_2, And H_3, This Study Uses The Following Random-Effects Regression Model: The econometric model used in this study is based on panel data dependence techniques. The use of panel data assists the evaluation of firm's green management practices over time, by analysing observations of the same firms over several consecutive years (Hsiao 2014). Because the dependent variable in this study is continuous in nature, a multiple regression with this type of data must be used. Our final sample consisted of an unbalanced panel of 209 firms and 1045 firm-year observations with an average panel of 5 years. A Hausman specification test indicated that a random-effects model was appropriate for our panel data (Hausman et al. 1984).

Accordingly, the random-effects model to estimate the GMP Score is as follows:

$$\begin{aligned}(\text{GMP Score})_{it} = {} & \alpha+\beta_1 \text{CEOENVEXP}_{it}+\beta_2\text{BODENVEXP}_{it} \\ & +\beta_3 (\text{CEOENVEXP}_{it} \text{x BODENVEXP}_{it}) \\ & +\beta_4 \text{ Age it} + \beta_5 \text{ ROA}_{it} + \beta_6\text{FIRMSI}_{it} \\ & +\beta_7\text{DTCR}_{it}+\beta_8\text{BODSI}_{it}+\beta_9\text{BODIND}_{it} \\ & +\beta_{10}\text{INTIOWN}_{it} + \varepsilon_{it} \qquad (1)\end{aligned}$$

where,

GMP = Total Strategic Behaviour Score of 15 types of Green Management Practices
CEOENVEXP = CEO's Environmental Experience
BODENVEXP = Director's Environmental Experience
AGE = Firm's Age
ROA = Return on Assets (ROA)

FIRMSI = Firm's Size
DTCR = Leverage
BODSI = Board Size
BODIND = Board Independence
INTIOWN = Institutional Ownership

This study uses Equation 1 to examine the strategic behaviour of companies in terms of their green management practices and its relationship with the board of director's and CEO's past environmental-related experience, and the interaction effect of CEO's and board of director's past environmental-related experience. This study also performed various diagnostic checks including the 1) Multicollinearity Test; 2) Heteroscedasticity Test; 3) Serial Correlation Test; and Panel Unit Root Test before the regression process of the data.

RESULTS

DESCRIPTIVE ANALYSIS

Table 4 provides the descriptive statistics for the variables used in the study. While Table 4 shows the descriptive statistics of the total score of 209 Malaysian Environmentally Sensitive Public Listed Companies from 2010 to 2014. Based on Table 4, the total score for Malaysian Green Management Practices was increasing to compliance value (0) from 2010 to 2014.

TABLE 4. Descriptive statistics of all the variables used in the study

Variables	Minimum	Maximum	Mean	Median	SD
GMP SCORES	-15	15	-2.2935	1.0005	9.62115
CEOENVEXP	0	1	0.1301	0	0.336622
BODENVEXP	0	5	0.5598	0	0.954677
ROA	-80.89	70.25	3.3898	3.52	8.95714
AGE	0	53	18.823	16	12.3546
FIRMSI	6	69868	2433.38	158.5	7360.694
DTCR	0	11	0.2204	0.18	0.44654
BODSI	3	15	7.4928	7	1.91765
BODIND	0.14	1	0.4654	0.43	0.12827

TABLE 5. Descriptive statistics of the mean of the total score of sample green management practices

Year	2010	2011	2012	2013	2014
Mean of Score of Green Management Practices	-3.75	-3	-2.4	-1.5	-1.05

Table 6 demonstrates the descriptive statistics of the mean of the score of Malaysian Environmentally Sensitive Public Listed Companies' Green Management Practices in 2010 and 2014. Generally, the mean of all fifteen green management practices was increasing to compliance value from 2010 to 2014. Based on Table 6, Green management practices related to environmental policy or programme audits or the structure of environmental responsibility (mean 2014 = 5.31) represent the highest mean score followed by green management practices related to the acquisition of environmental certification (e.g. environmental process and product certification) (mean 2014 = 1.58); green management practices related to the process (e.g. life cycle analysis; design for the environment; and environmental management systems) (mean 2014 = 0.1005); green management practices stakeholder engagement (mean 2014 = -0.22); green management practices related to material used in the production process (mean 2014 = -0.43); green management practices of energy used in the business operation (mean 2014 = -1.22); green management practices related to the total waste produced from business activities (mean 2014 = -1.29); green management practices related to business products (mean 2014 = -1.29); and green management practices related to water (mean 2014 = -1.36). While the means for the other green management practices are below -1.5.

TABLE 6. Descriptive statistics of the mean of the score of sample green management practices based on fifteen green management practices

	2010		2014	
	Mean	Std. Deviation	Mean	Std. Deviation
Material	-3.45	10.96	-0.43	11.10
Energy	-4.02	10.66	-1.22	10.48
Water	-3.80	10.79	-1.36	10.57
Atmospheric Emission	-4.67	10.02	-2.01	9.99
Total Waste	-3.80	10.79	-1.29	10.42
Biodiversity	-4.67	9.91	-2.30	9.71
Products	-3.73	10.96	-1.29	10.53
Process	-1.08	12.21	1.51	11.90
Environmental Expenditure	-5.45	8.97	-3.59	8.06
Other Accounting or Scoring System	-6.17	7.96	-3.73	7.99
Employee Training	-5.17	9.37	-3.09	8.83
Certification	-1.51	12.17	1.58	11.94
Stakeholder Engagement	-3.30	11.20	-0.22	11.15
Environmental Policy	0.22	12.69	5.31	12.30
Reporting	-4.38	10.04	-2.15	9.63

REGRESSION ANALYSIS

This study ran one set of random-effect regression models to test the three hypotheses of our study. Based on Table 7, there was no significant relationship between CEO's past environmental-related experiences and firm's positive deviance behaviour in green management practices. Thus, H_1 is rejected. On the other hand, Table 7 demonstrates that there was a significant positive relationship between the board of director's past environmental-related experiences and firm's positive deviance behaviour in green management practices. Therefore, H_2 is supported. Regarding the interaction effect of CEO's and board of director's past environmental-related experience and its relationship with positive deviance behaviour in green management practices, Table 7 shows that there was no significant positive relationship for this interaction effect. Thus, H_3 is rejected.

TABLE 7. Regression analysis

	Coefficient	Std.error	Z	p > |z|
bodenvexp	1.523795	0.5693046	2.68	0.007
ceoenvexp	1.725595	1.43156	1.21	0.228
ceobodenvexp	-0.2491992	0.9833818	-0.25	0.8
roa	0.0582208	0.0554383	1.05	0.294
age	0.1203527	0.0379659	3.17	0.002
firmsi	0.0008418	0.0001789	4.71	0
dtcr	3.956256	2.609023	1.52	0.129
bodsi	0.3482795	0.239323	1.46	0.146
bodind	2.61978	3.320912	0.79	0.43
intiown	2.005057	1.536549	1.3	0.192
_cons	-16.59461	3.447827	-4.81	0
/lnsig2u	2.985793	0.2541369		
sigma_u	4.449965	0.5654502		
rho	0.8575325	0.031048		
Likelihood-ratio testofrho = 0	118.25			
p-Value	0			
Log likelihood	-106.08961			
Wald $\chi 2$	64.99			
p-Value	0			

Note: Significance level *** p < 0.01, ** p < 0.05, * p < 0.1

DISCUSSION

The findings of the study suggest that Malaysian environmentally sensitive public listed companies that possess a Board of Directors with past environmental-related experiences have led their companies to deviate positively in green management practices. Nevertheless, the result is in contrast for CEOs with past environmental experiences. Regarding the interaction effect of CEOs' and board of directors' past environmental experience and positive deviance in green management practices, the results show that the cooperation of the CEO and directors with past environmental-related experience does not lead Malaysian environmentally sensitive public listed companies to deviate positively in their green management practices. The results of this study show that specialized directors with expertise in environmentally sustainability matters are fully dedicated and skilled to take responsibility for the company's environmental concerns and are more able to provide meaningful strategic advice and lead the Malaysian environmentally sensitive public listed companies to deviate positively in green management practices (Walls & Hoffman 2013).

The findings of the study also suggest that green management practices of Malaysian environmentally sensitive public listed companies are increasing from non-compliance to compliance due to the regulative and normative pressures related to green management practices (Alazzani & Wan-Hussin 2013). Furthermore, this study also portrays that cognitive pressure, which originates from key governance decision makers' environmental-related expertise and experiences, plays an important role in moving Malaysian environmentally sensitive companies from compliance level to beyond compliance level. This phenomenon can be regarded as a positive deviance in green management practices. The developed conceptual model hypothesizes that in today's global environment, positively deviant green management practices will be positively influenced by the board of directors with past environmental-related experiences (Walls & Hoffman 2013). The enhancement of environmental knowledge, expertise, networking, and concern of the top-level managers is essential to lead companies to deviate positively in green management practices

CONCLUSION

The findings contribute to advancing the understanding of green management practices in two ways. First, this study contributes a preliminary but vital insight into positive deviance behaviour in green management practices, particularly in Malaysian environmentally sensitive public listed companies. Based on the perspectives of Neo-Institutional Theory, this study demonstrates that beside the regulative and normative pressures, the cognitive pressures from board of director with past environmental related experience play important role in inciting the firm to deviate positively in green management practices (Walls & Hoffman 2013). Second, the study provides an understanding pertaining to the intersection between corporate governance and green management practices. Malaysian environmentally sensitive public listed companies need to have sound corporate governance practices, not only concerning the appointment of a CEO and board of directors with past environmental-related experience and expertise but governance member with a proper social capital relationship related to green management practices, good environmental remuneration package, and proper environmental governance structure. The environmental governance of key governance decisionmakers is crucial as this is expected to quickly trickle down the organizational hierarchy.The study, however, only relates to data on Malaysian environmentally sensitive companies and leaves scope for extending it to other non-environmentally sensitive public listed companies, especially those drawing immediate attention for the introduction of green technologies.

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