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STRATEGIC MANAGEMENT FOR SUPERIOR ENVIRONMENTAL AND FINANCIAL PERFORMANCE IN MALAYSIAN MANUFACTURING FIRMS

AH SUAT LEE[1], TZE SAN ONG[2]*, RIDZWANA MOHD SAID[2], ROSMILA SENIK[2] AND BOON HENG TEH[3]

[1]Universiti Tunku Abdul Rahman, 31900, Kampar, Perak, Malaysia. [2]Universiti Putra Malaysia, 43400 Serdang, Selangor, Malaysia.
[3]Multimedia University Malaysia, 63100 Cyberjaya, Selangor, Malaysia.

**Corresponding author: tzesan@upm.edu.my*
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Abstract: The purpose of this research is to examine the association between strategic environmental management, i.e. environmental strategic focus, shared vision and financial performance in manufacturing companies. Data were collected from 124 Malaysian manufacturers with ISO 14001 EMS certification. Structural equation modelling analysis was carried out using SEM-PLS software Version 3.2.7. The findings indicated that environmental strategic focus had contributed positively to environmental performance. Likewise, environmental performance also affected the companies' financial performance positively. On the contrary, environmental shared vision showed no effect on environmental performance. The results empirically endorsed the role of environmental strategic focus as the driver in improving environmental performance, and the role of environmental performance in driving superior financial performance. On the contrary, the study could not validate environmental shared vision as a driver of performance.

Keywords: Strategic environmental management, environmental strategic focus, shared vision, environmental performance, financial performance, PLS-SEM.

Introduction

Many countries today are aware on the need for environmental protection and highly engaged in the cause. Governments of nations with developed economies are increasingly implementing stringent environmental requirements on businesses. This affects developing countries as a substantial amount of their manufactured products are required to comply with the requirements when exporting to developed nations (Ministry of Finance Malaysia, 2017). Likewise, businesses are also expected to be more transparent in reporting the environmental impact of their activities. Henceforth, more firms have adopted standards proposed by the Global Reporting Initiative (GRI) to improve the quality and scope of their environmental reporting.

Manufacturing activities are associated with a substantial volume of pollution and waste generation (Hassan *et al,* 2005; Department of Statistics Malaysia, 2011; 2012). According to two consecutive surveys in 2010 and 2011 by the Malaysian Statistics Department, the manufacturing sector has been found to be the largest contributor to environmental expenditure at 80.8 % and 72.2 %, respectively (Department of Statistics Malaysia, 2011; 2012).

Moreover, environmental degradation is further intensified with improper handling of toxic waste by manufacturers. For example, multiple incidents of pollution in Sungai Semenyih, Selangor, in 2016 had caused the closure of its water treatment plant six times, which were believed to be caused by illegal discharge of effluents into the river by nearby factories (Khalid *et al.*, 2017). Likewise, the severity of these irresponsible handling of environmental waste is evidenced by increasingly larger penalty imposed by Malaysian courts in cases of environmental crime and pollution related to manufacturing activities (Mustafa & Mohamed, 2015). These activities that cause environmental damage may lead to far-reaching consequences on the people's wellbeing. Consequentially, it is of paramount importance for the manufacturing sector in Malaysia to be

proactive in mitigating environmental damage arising from their activities. In this regard, Malaysian manufacturers are facing intensified demand to "green" their processes as prompted by regulators, customers, non-governmental organisations and society (Muhammad *et al.*, 2015). Hence, the manufacturers' environmental strategies play a crucial role in determining their competitiveness and economic performance. In fact, extant strategic environmental literature suggest that manufacturers may create business value, i.e. lower cost, enhanced innovation and improved branding, through environmental management. This notion is referred to as a business case for environmental sustainability.

The concept of corporate environmentalism (Banerjee, 2002; Banerjee *et al.*, 2003) argues for the importance of integrating environmental considerations into strategic management of companies to achieve an environmental sustainability business case. This is because an environmental-oriented corporate strategy will facilitate resource allocation as well as leadership towards environmental goals (Baumgartner & Rauter, 2017). Thus, it denotes a dynamic capabilities gain in the firms' strategic planning and decision-making process for environmental protection. Furthermore, scholars in strategic management are arguing for the facilitative role of shared vision in the implementation of strategies (Larwood *et al.*, 1995; Tsai & Ghoshal, 1998; García-Morales *et al.*, 2006; O'Connell *et al.*, 2011).

Environmental shared vision (Aragón-Correa *et al.*, 2008; Chen, 2015a) represents the sharing of organisational goals for environmental protection as common values for all organisational members. As "environmental shared vision" may foster employees' commitment and behaviour towards organisational goals (Hart, 1995), thus it denotes the dynamic capabilities gained from the firms' strategic leadership processes in environmental protection. As such, this research intends to examine the link between strategic environmental management, its performance and financial performance based on the dynamic capabilities theory. Accordingly, this research postulates that "environmental strategic focus" and "environmental shared vision" are two dynamic capabilities arising from the companies' strategic efforts to address environmental issues.

Despite the calls to address environmental issues by business leaders and scholars, few studies have linked strategic environmental management to performance, as well as financial performance. As such, there is a lack of attention devoted to analysis on how strategic environmental management, i.e. environmental strategic focus and environmental shared vision, may enhance environmental performance, as well as financial outcome of manufacturing firms. Several studies have connected environmental strategy to environmental performance (Latan *et al.*, 2018; Chen *et al.*, 2015b; Danso *et al.*, 2019), but these studies have captured the strategic focus perspective only, and omitted the leadership aspect of strategic initiatives, i.e. environmental shared vision. Alternatively, Alt *et al.* (2015) links environmental shared vision to performance, but omitted the strategic focus aspect. All studies described here have not included financial performance in their analysis. Hence, there is a lack of integrated analysis relating the three key variables of corporate environmental strategies. As such, this study seeks to perform a path analysis based on structural equation modelling to discover the relationship between the three key outcome variables of corporate environmental strategies.

Additionally, this research also empirically validates the link between financial performance and environmental performance among manufacturers who are proactive environmentally in the context of developing countries i.e. ISO 14001 certified manufacturers in Malaysia. According to Brundtland (1987), the dominant sources of environmental pollution and waste in the next few decades are more likely to arise from developing countries, caused by the upsurge of economic activities from rapid population growth. Moreover, developing countries usually lacked the stringent environmental regulations and resources to

address environmental problems systematically. The findings of this study may serve as a reference for manufacturers in developing countries to identify underlying factors that leads to business success with environmental management.

"Pays to be Green" and the "Business Case for Environmental Sustainability" Concept

In fact, manufacturers worldwide are encouraged to adopt a proactive environmental strategy based on the premise of "pays to be green" to successfully achieve a business case with environmental sustainability. Proactive environmental strategies refer to a firm's "consistent pattern of environmental practices, across all dimensions relevant to their range of activities, not required to be undertaken in the fulfilment of environmental regulations or in response to isomorphic pressures within the industry as standard business practices" (Sharma & Vredenburg, 1998).

"Pays to be green" refers to the promise of economic returns from proactive environmental management as illustrated by reviews on empirical studies mainly conducted in Western countries (Margolis & Walsh, 2003; Ambec & Lanoie, 2008; Dixon-Fowle, *et al.*, 2013). These reviews have largely reported a positive link between proactive environmental management and company performance. This is due to the fact that pollution is a form of waste resulted from inefficiencies in the business process. As such, companies stand to lower their operation costs when they take proactive steps to improve product design and business processes with focus on preventing pollution. These companies also stand to gain market differentiation advantage through offering of green products (Ambec & Lanoie, 2008).

"Business case for environmental sustainability (BCES)" represents the claim that companies may leverage environmental management to gain competitive benefits by proactively managing the adverse impacts of their activities on the natural environment (Porter & Van der Linde, 1995; Salzmann *et al.*, 2005; Porter & Kramer, 2006; Endrikat *et al.*, 2014). As such, companies must possess the ability to manage environmental issues in a way that contribute concurrently towards society's need for environmental protection and also realising economic benefits (Schaltegger & Synnestvedt, 2002; Wagner & Schaltegger, 2004; Porter & Kramer, 2006). Thus, it is extremely crucial for companies to integrate environmental sustainability considerations within their corporate policies and practices, as managers will need to incorporate both environmental considerations and long-term economic performance in making environmentally related decisions (Porter & Kramer, 2006; Lee & Ong, 2019).

The Natural Resource-based Theory and Dynamic Capabilities Theory

Research adopting the natural resource-based view may justify the positive effects of environmental strategies on company performance based on the premise that the companies will generate complex organisational capabilities resulting from their proactive environmental practices (Hart, 1995; Russo and Fouts, 1997; Sharma & Vredenburg, 1998; Aragón-Correa *et al.*, 2008). Such instances may be attributed to the implementation of environmental strategies that foster tacit resource accumulation, with socially complex processes involved, which are causally ambiguous and firm-specific, and nurture shared vision for environmental goals. Hence, these resources are valuable, rare, inimitable and non-substitutable, thus constituting a sustained competitive advantage for the companies (Hart, 1995; Hart & Dowell, 2011). In this regard, scholars have viewed environmental performance as core competitive capabilities leading to good company performance (Ong *et al.*, 2019).

In another note, the dynamic capabilities theory emphasises the manner in which competences are renewed in response to business context changes. Proactive environmental strategies stand as sources for dynamic capabilities of companies (Teece *et al.*, 1997; Teece, 2007). Environmental resources include

physical, social and organisational assets, as well as human capital (Lucas, 2010), which are transformed into dynamic capabilities through effective resource exploitation via environmental management (Teece *et al.*, 1997; Teece, 2007). Such strategies make changes to processes — routine and technological stocks — in order to effectively cope with prospective risks associated with increasing demand for corporate environmental accountability. Underpinned by the dynamic capabilities theory, core strategic outcomes in terms of environmental strategic focus and shared vision are postulated as sources of a company's dynamic capabilities. These environmental capabilities enable companies to effectively exploit their environmental resources to build performance, which eventually contributes to their financial performance.

Environmental Strategic Focus

Environmental strategic focus represents the degree to which environmental considerations are integrated into strategic processes in planning and deciding long-term organisational directions (Banerjee, 2002). According to Porter and Kramer (2006), environmental management practices contribute to long-term values of companies subjected to the magnitude of integration within their organisational strategy. This is because environmental strategic focus allows companies to align their business and corporate strategies with environmental goals, policies and plans, thus ensuring corporate directions are in congruence with environmental strategies (Judge & Douglas, 1998; Banerjee, 2002; Banerjee *et al.*, 2003).

Strategic integration of environmental considerations may embed environmental sustainability into organisational decision-making processes, thus enabling initiatives to receive sufficient resource allocation. Furthermore, such integration forms the basis for operational decision-making in support of the companies' strategic directions to be environmentally focused (Baumgartner & Rauter, 2017). Hence, integrating environmental concerns into strategic decision processes are associated with higher allocation of resources for environmental issues, as well as larger functional coverage, such as purchasing, production, distribution and product development, which are subjected to environmental evaluations and improvements (Judge & Douglas, 1998). In summary, according to strategic management literature, environmental strategic focus is associated with emphasis of funding for environmental issues and implementation of strategic support structures, such as training, human resource policies and administration routines. All these factors will contribute towards a company's dynamic capabilities.

Environmental Shared Vision

Environmental shared vision refers to strategic goals adopted as common core values among organisational members (Larwood *et al.*, 1995; Tsai & Ghoshal 1998; Chen *et al.*, 2015). Organisational shared vision is defined as "the collective goals and aspirations of the members of an organisation" (Tsai & Ghoshal, 1998) that specify the future direction of a company (Larwood *et al.*, 1995). Hence, organisational vision is self-identified and shared by organisational members (Zaccaro & Banks, 2001: O'Connell *et al.*, 2011).

Corporate environmental studies have lately extended shared vision to incorporate environmental protection goals (Aragón-Correa *et al.*, 2008; Chen *et al.*, 2015). As such, in addition to the key attributes of the shared vision described, the concept of additionally embodied environmental protection goals. It serves as the fundamental value that brings about employees' commitment towards organisational environmental goals. A high level of environmental shared vision among employees indicates successful alignment of organisational environmental goals and employees' personal interest, a phenomenon known as goal congruence. As a result, employees embrace organisational goals for environmental protection as their personal interest, and thus, are committed to achieve environmental goals as their own aspiration to personal goals.

Environmental Performance as a Competitive Capability

Environmental performance represents the core construct indicating companies' achievements in environmental protection. A meta-analysis by Nawrocka and Parker (2009) highlighted that current empirical studies have largely included a mix of internal improvements (e.g. waste elimination) and external benefits (environmental reputation) as environmental performance. Nevertheless, such approach results in a general conclusion, which limits the usefulness of empirical findings. As such, this research relies on Delmas *et al.* (2013) to define environmental performance as the impact of company activities on the natural environment. Whereas the external benefits are considered as underlying factors contributing to competitiveness.

Accordingly, taken from an internal perspective, the companies' superior environmental performance is indicated by their achievements in reducing adverse impacts, including reduction in waste and emissions from operations, reduction of the environmental impact from their products or services, reduced danger of spills and disasters, and reduction in purchases of non-renewable components, chemicals and materials (Chow & Chen, 2012; Ong *et al.*, 2019).

Environmental Strategic Focus and Environmental Performance

Environmental considerations implemented at strategic planning and decision-making process will convert a company's orientation into strategic actions in three major aspects: (i) systematic resource allocation for environmental investments (Judge & Douglas, 1998); (ii) reinforcement of environmental goals that guide actions of its organisational members; and, (iii) leadership towards environmental goals. These strategic actions affect the scope of environmental practices carried out by a firm, which affects achievements in environmental performance.

At corporate strategy level, companies strategically choose to conduct business based on environmentally friendly products in growing green markets (Banerjee, 2002). This product-market decision enables measures to eliminate pollution to be implemented at the product design stage rather than the use stage, thus substantially intensify the scope for improving environmental performance. An environmental-oriented product design also contributes to better resource productivity as green products have less input to produce, hence reducing the use of scarce natural resources (Dangelico & Pujari, 2010).

Thus, in line with the dynamic capabilities theory, this research posits that the higher environmental strategic focus a company has, the more likely that it has resources and leadership to generate superior environmental performance. Empirical evidence also concluded a positive influence of environmental concerns on the performance of manufacturing companies in Malaysia (Judge & Douglas, 1998; Ong *et al.*, 2014; Chen *et al.*, 2015b; Ong *et al.*, 2016; Latan *et al.*, 2018; Lee & Ong, 2019; Ong *et al.*, 2019). As such, the hypothesis below is proposed.

Environmental Shared Vision and Environmental Performance

A higher level of environmental shared vision indicates better level of capabilities within a company to improve its environmental performance. This is owing to the reason that environmental shared vision may enhance employees' competences, which are central to the creation of environmental knowledge in a few major aspects. Environmental shared vision reflects the strength generated by an environmentally proactive company in terms of an organisational wide commitment towards environmental goals. High level of shared vision inspires commitment, energy and purpose among organisational members (Calantone *et al.*, 2002). Learning strengthens the company's environmental knowledge, thus enabling it to implement better environmental solutions. Thus, this study postulates that the higher the

environmental shared vision in a company, the more superior will be its environmental performance. Hence, the following hypothesis is proposed.

Environmental Performance and Financial Performance

Underpinned by the NRBV theories (Hart, 1995; Hart & Dowell, 2011), environmental performance reflects achievements in gaining enhanced resource productivity and lower operational costs through effective environmental management. Numerous empirical evidence have indicated a positive effect of environmental performance on company performance (Dowell *et al.*, 2000; Clarkson *et al.*, 2011; Eltayeb *et al.*, 2011; Iwata & Okada, 2011; Chen *et al.*, 2016).

Empirical studies on Malaysian firms have also reported positive effects of environmental initiatives on financial performance (Eltayeb *et al.*, 2011; Ong *et al.*, 2014; Ong *et al.*, 2016; Ong *et al.*, 2019). On the other hand, some studies did reveal a negative relationship (Rassier & Earnhart, 2010), while others found no relationship (Wagner *et al.*, 2002; Iwata & Okada, 2011) between environmental performance and financial performance. In this regard, this study proposes the following hypothesis.

Research Framework

Figure 1 presents the research model of this study. Environmental strategic focus and environmental shared vision constitute the dynamic capabilities of environmentally proactive firm. Based on the dynamic capabilities theory, these constructs contributes positively towards competitive capabilities of firms, i.e. environmental performance. Based on the resource-based theory, environmental performance is postulated as the driver for superior financial performance. This study has validated the research model via data collected from senior managers of Malaysian Manufacturers. A summary of findings is presented in Figure 2 in the results section.

Materials and Methods

Survey design and instrument

This research followed a correlational survey design, which used questionnaires to collect data from managers in selected companies. Constructs were operationalised using close-ended questions, where respondents were asked on their extent of agreement on questions related to the company that they were working in. These questions were coded on a seven-point Likert scale ranging from "1 = not at all" to "7 = great extent". The questionnaire contained three key sections, including measurement scales of each construct, company profile and the respondents' profile. Table 1 shows the operationalisation of constructs based on a collection of validated instruments from previous empirical studies.

However, some adaptations were made to tailor to the context of current research. Financial performance was measured using a scale modified from several environmental management studies (Karagozoglu & Lindell, 2000; Rao, 2002; Rao & Holt, 2005). The scale

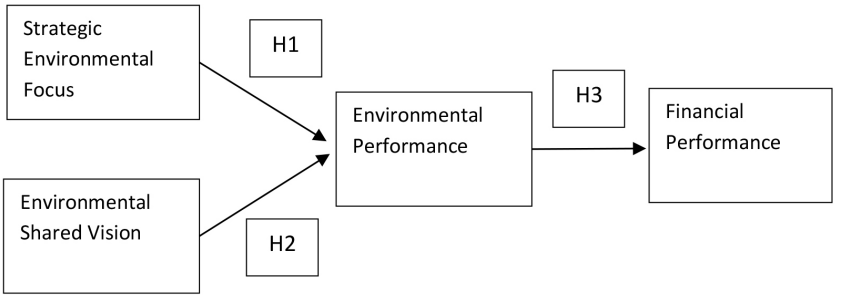

Figure 1: Research framework

was also adopted by environmental management scholars in Malaysia (Eltayeb *et al.*, 2011; Lee *et al.*, 2013).

The companies' environmental performance was measured using the scale developed by Zhu and Sarkis (2004). The items were consistent with theoretical conception of environmental performance. The instrument was also adopted by several empirical studies on environmental management in China (Zhu, Sarkis, & Lai, 2008) and Malaysia (Eltayeb *et al.*, 2011; Lee *et al.*, 2013). Environmental shared vision was measured using scale developed by Chen *et al.* (2015). Environmental strategic focus was measured using scale adapted from Banerjee *et al.* (2003), which was, in turn, adopted from Banerjee (2002).

These scales were highly suitable for the current research as they had been validated by numerous studies in environmental management within the manufacturing industry. The research model was empirically evaluated with company size as control variable on performance. This was due to the fact that large companies were more likely to achieve better profitability as a result of better resources. Company size was operationalised using the natural logarithm of employee workforce.

Table 1: Operationalisation of constructs.

Construct	Operationalisation	References
Financial outcome	Improvements in terms of: 1. Profit margin 2. market share 3. Sales revenue 4. Return of investment 5. New market opportunities 6. Overall financial performance	Adapted from scales of several authors (Karagozoglu & Lindell, 2000; Rao & Holt, 2005; Rao, 2002)
Environmental performance	1. Reduced air emissions; 2. Waste water reduction; 3. Reduction in generation of solid waste; 4. Decrease in use of harmful/toxic materials; 5. Fewer incidents of environmental accidents; and, 6. Improvements in environmental situations.	Adapted from the scale developed by Zhu and Sarkis (2004)
Environmental strategic focus	1. Integration of environmental issues into strategic planning process; 2. Quality criteria includes reducing the environmental impact of products and processes; 3. Making effort to link environmental objectives with corporate goals; 4. Environmental issues are always considered when developing new products; 5. Emphasising the environmental aspects of products and services in advertisements;	Adopted from Banerjee *et al.* (2003).

	6. Marketing strategies for products and services have been considerably influenced by environmental concerns; and, 7. Product-market decisions are always influenced by environmental concerns.	
Environmental shared vision	1. There is commonality in environmental goals in the company; 2. There is total agreement on the company's strategic environmental direction; 3. All personnel in the company are committed to environmental strategies; and, 4. The employees are enthusiastic about the company's collective environmental mission.	Adapted from scale of Chen *et al.* (2015).

Sample and Data Collection

A cross-sectional survey study was implemented. The sample frame was based on a list of 483 manufacturing companies with ISO 14001 EMS certification, as listed in the 2015 Federation of Malaysian Manufacturers directory (Federation of Malaysian, 2015). Data collection was carried out throughout 2017. A cover letter explaining the nature of this research, a questionnaire and post-paid self-addressed envelope were sent to the respondents in the selected companies via post. A follow-up call was made to respondents who did not reply to the questionnaire after 30 days from the date when the questionnaire was sent. After the first reminder call, a second reminder call was made to the respondents. Upon each reminder call to the respondents, a replacement questionnaire was provided to them via email.

The extensive data collection procedures had resulted in a collection of 124 responses. The survey was mainly answered by senior personnel of the companies, such as environmental managers, operations managers, general managers, chief executive officers and others. These respondents were knowledgeable about the environmental aspect of their company, as well as the business aspects related to environmental practices. Structural equation modelling was performed on the data collected using the SmartPLS software Version 3.2.7.

Results

Descriptive Statistics of Respondents

Questionnaires were mailed to representatives of 483 manufacturing companies, in which 124 (25.6 % response rate) provided usable data for this study. Table 2 shows the profiles of companies that responded to the questionnaires, which were mostly large entities. Majority of the sample (58 %) in this study had an employee size more than 200. The companies were also long established, as 89 % of them had been operating for more than 20 years.

Table 2: Profile of companies surveyed

Description	No.	%
Total companies	124	100
Companies' main activities:		
- Electrical machinery, communication, radio, television and optical equipment	29	23%
- Basic metal, metal and fabricated products, transport equipment, motor vehicles	22	18%
- Rubber and plastic products	18	15%
- Chemicals, chemical products and synthetic fibres	16	13%
- Others	39	31%
Workforce:		
Below 200 (Small and medium size)	52	42%
Between 200 and 500 (large size)	41	33%
Above 500 (large size)	31	25%
Company age (years):		
Below 20	13	11%
Between 21 and 40	58	46%
Above 40	53	43%
Company ownership:		
> 50% Malaysian-owned	108	87%
> 50% Foreign-owned or joint venture	16	13%
Respondents' position:		
Environmental manager	2	2%
General manager	56	45%
Vice-president or chief executive officer	13	10%
Others	53	43%

Prior to data analyses, all variables of interest were examined using IBM SPSS Version 24 for accuracy of data entry, missing values and outliers. Missing values were replaced with average value of respective measurement scales. Normality of data was evaluated based on the skewness and kurtosis on the collected data distribution (Hair *et al.*, 2013). Results of normality assessment showed all measured items having Kurtosis values ranging from lowest at -0.989 to highest at 0.686, and skewness values ranging from lowest at -0.011 to highest at +0.794. All Kurtosis and skewness statistics were within the normality range of -1 to +1, which was within the acceptable range of normality (Hair *et al.*, 2013). Furthermore, data analysis using SmartPLS did not demand for the data to be normally distributed.

Measurement Model

Table 3 presents results of confirmatory factor analysis. According to Hair *et al.* (2013), all measurement scales had demonstrated adequate convergent validity as the data had fulfilled all these three criteria — (i) the factor loadings of each item exceeded 0.5, indicating the relevance of each item to the construct being measured; (ii) composite reliability (CR) was 0.7 or

Table 3: Factor loadings and reliability

Items	Loadings	Constructs	AVE	CR	CA
FP1	0.787	Financial performance (FP)	0.588	0.877	0.826
FP2	0.732				
FP3	0.763				
FP4	0.794				
FP5	0.755				
EP1	0.897	Environmental performance (EP)	0.616	0.888	0.841
EP2	0.830				
EP3	0.603				
EP4	0.773				
EP5	0.791				
EF1	0.799	Environmental strategic focus (EF)	0.557	0.862	0.802
EF2	0.700				
EF3	0.751				
EF4	0.713				
EF5	0.764				
EV1	0.728	Environmental shared vision (EV)	0.582	0.847	0.764
EV2	0.732				
EV3	0.791				
EV4	0.798				

AVE = Average variance extracted; Composite reliability = CR; CA = Cronbach's alpha

greater; and, (iii) average variance extracted (AVE), which measured the variance captured by the items relative to measurement error, was greater than 0.5. Further, the reliability of each construct was further supported by a Cronbach's Alpha value exceeding 0.75 for each measurement scale.

Results presented in Tables 4 to 6 present statistics that supported each construct discriminant validity. Table 3 shows that the cross item loadings were lower than items loadings for each respective construct. Table 4 shows that the AVE square root value of each construct (bold diagonal values) was bigger than the inter-construct correlation values. Table 5 shows that all inter-constructs heterotrait-monotrait ratio (HTMT) statistics were lower than adequate threshold criteria at 0.9 (Henseler *et al.*, 2016). As such, it could be concluded that all constructs had adequate discriminant validity, and each of the constructs showed a unique notion compared with others.

Table 4: Item loadings and cross loadings

	EF	EP	EV	FP
EF1	**0.799**	0.496	0.418	0.465
EF2	**0.700**	0.545	0.304	0.408
EF3	**0.751**	0.548	0.405	0.389
EF6	**0.713**	0.382	0.440	0.455
EF7	**0.764**	0.426	0.477	0.472
EP1	0.599	**0.897**	0.424	0.425
EP2	0.566	**0.830**	0.336	0.392
EP3	0.420	**0.603**	0.198	0.170
EP4	0.457	**0.773**	0.359	0.350
EP5	0.498	**0.791**	0.403	0.399
EV1	0.338	0.263	**0.728**	0.328
EV2	0.355	0.251	**0.732**	0.414
EV3	0.463	0.413	**0.791**	0.450
EV4	0.471	0.405	**0.798**	0.440
FP1	0.339	0.255	0.354	**0.787**
FP2	0.411	0.286	0.314	**0.732**
FP3	0.547	0.427	0.493	**0.763**
FP4	0.433	0.391	0.440	**0.794**
FP5	0.463	0.351	0.428	**0.755**

Notes: EP = environmental performance; EF = environmental strategic focus; EV = environmental shared vision; and FP = financial performance.

Table 5: Inter-construct correlations

Construct	EF	EP	EV	FP
EF	**0.746**			
EP	0.651	**0.785**		
EV	0.543	0.450	**0.763**	
FP	0.584	0.458	0.540	**0.767**

Notes: (1) Off-diagonal values are the inter-construct correlations and diagonal value highlighted in bold and italic are the square root of the average variance extracted. 2: EP = environmental performance; EF = environmental focus; EV = environmental shared vision; and FP = financial performance.

Table 6: Inter construct heterotrait-monotrait ratio (HTMT)

Construct	EF	EP	EV	FP
EP	0.781			
EV	0.684	0.530		
FP	0.704	0.518	0.657	0.112

Notes: EP = environmental performance; EF = environmental focus; EV = environmental shared vision; and FP = financial performance.

Structural Model and Hypotheses Testing

Table 7 presents results of hypothesis testing conducted based on SEM-PLS bootstrapping procedures of 5,000 sub-samples to determine the significance level of hypothesised paths (Hair *et al.*, 2013). Findings supported hypotheses H1 and H3, each with a p-value below 0.001. On the contrary, hypothesis H2 and control variable was not supported, each with a p-value exceeding 0.05. A summary of research findings is shown is Figure 2.

Table 7: Extracts of hypothesis testing results

Hypothesis	Path	Standard beta	Standard error	t value	p value	Results	f2
H1	EF→ EP	0.576	0.083	6.951 ***	0.000	Supported	0.415
H2	EV→ EP	0.138	0.104	1.326 NS	0.185	Unsupported	-
H3	EP→ FP	0.454	0.072	6.274 ***	0.000	Supported	0.255
Control variable:							
Logarithm EY → FP		-0.027	0.081	0.334 NS	0.738	Unsupported	-

Notes: EF = environmental focus; EP = environmental performance; EV = environmental shared vision; and FP = financial performance, Logarithm EY = natural logarithm of employee size. NS = non-significant; ***p<0.0001.

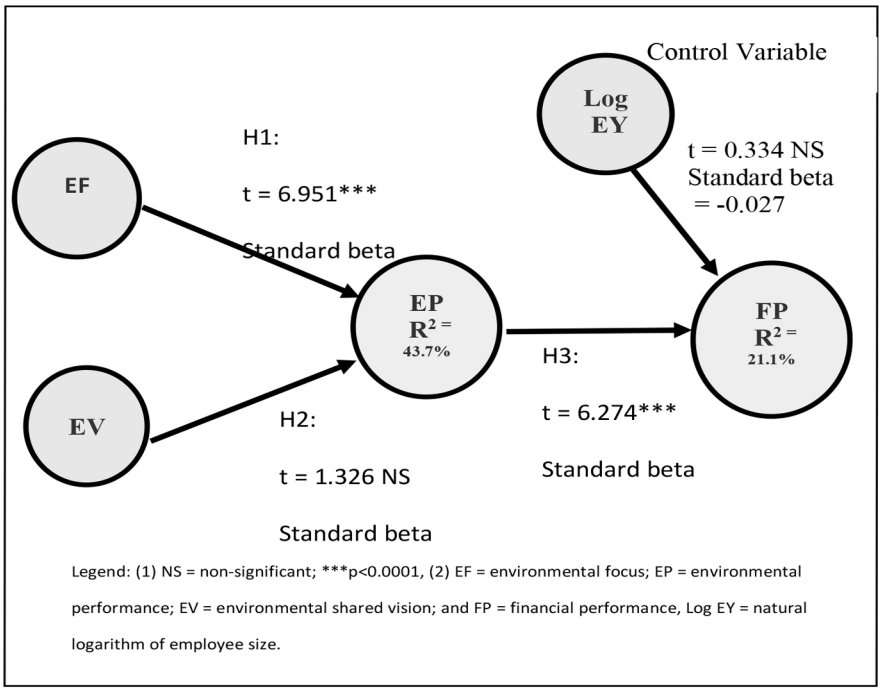

Figure 2: Structural path models

Structural Model Predictive Assessment

Table 8 presents results of structural model predictive assessment. Findings indicated that environmental strategic focus could explain 43.7 % of variances in environmental performance, with good predictive relevance (Q^2 = 0.405). Environmental performance could also explain 21.1 % of variances in financial performance, with good predictive relevance (Q^2 = 0.200). Figure 1 presents the graphical diagram of the structural path model.

Discussion

Environmental Strategic Focus and Environmental Performance

Findings in Figure 2 and Table 6 show that environmental strategic focus had significant positive effect on environmental performance (standardised beta = 0.576, $p < 0.01$). This indicated that H1 was supported. As per prediction, environmental performance was affected positively by the companies' consideration for environmental issues embedded in strategic processes. This finding was consistent with Judge and Douglas (1998), Banerjee (2002) and Chan *et al.* (2015), which showed empirically that superior environmental performance was gained by companies that integrated environmental concerns in their strategic decision-making processes and planning. In most situations, when companies prioritised environmental protection issues in devising their strategic planning and implementation, such as corporate goal setting, setting quality criteria, developing new products, as well as advertising strategies, they were more likely to gain improved environmental performance. As such, the companies' environmental strengths might be enhanced by benefits received from their strategic environmental focus in the form of systematic resource allocation, extensive functional coverage for environmental assessment, and strategic leadership towards corporate environmental goal. Therefore, how environmental considerations incorporated into strategic planning and decision-making should matter to manufacturers because they constituted the source of dynamic capabilities.

Environmental Shared Vision and Performance

Based on Figure 2 and Table 6, it was reported that environmental shared vision had no effect on environmental performance (standardised beta = 0.138, $p > 0.05$), and provided no support for H2. Contrary to the prediction, this study reported no association between environmental performance and environmental shared vision. It appeared that these companies were unlikely to have environmental performance improvements as a result of cultivating environmental shared vision among their employees. This result contradicted previous studies that considered shared vision (Calantone *et al.*, 2002), and environmental shared vision (Chen *et al.* 2015a) as the vehicle to enhance employees' learning, which in turn, would lead to environmental performance improvements.

Possible reasons for the insignificant result could be due to the contextual differences experienced by the companies. In most cases, the national culture where companies operated had significantly affected the outcome of their sustainability practices (Aguilera-Caracuel, Guerrero-Villegas, Vidal-Salazar, & Delgado-Márquez, 2015). Many of the cases in environmental literature were based in developed countries. These countries had a

Table 8: Results of structural model predictive assessment

Construct	R^2	SE	t-value	P value	Q^2
EP	0.437	0.064	6.868***	0.000	0.405
FP	0.211	0.066	3.170***	0.002	0.200

Notes: EF = environmental strategic focus; EP = environmental performance; EV = environmental shared vision; and FP = financial performance; SE=standard error.

different work culture than developing countries like Malaysia (Abdullah, 2005). Malaysian managers tended to reflect a collectivist culture, with emphasised being part of a group rather than an individualist. They highly respected authority, with less priority for self-autonomy (Abdullah, 2005). Constrained by the more reserved cultural background, these respondent managers exhibited a high tendency to adopt a hierarchical-based power structure, and managers were reluctant to abandon their control on subordinates as they were still accountable for their performance despite delegation of authority to employees (Si & Wei, 2012). As such, employees among the sampled companies, despite having high commitment to organisational environmental goals, might hesitate when deciding on environmental solutions for fear of lack of approval from their management. This could hinder firms to achieve environmental performance improvements. Consequentially, it mattered for firms to create a supportive organisational culture that delegated autonomy and decision-making authority to employees to gain environmental performance benefits from environmental shared vision among its organisational members (Chhotray *et al.*, 2018).

Environmental Performance and Financial Performance

Table 6 and Figure 2 present results in support of hypothesis H3. As predicted, environmental performance act as a positive predictor (standardised beta = 0.454, $p < 0.00$) of financial performance among manufacturers that were environmentally proactive. This finding was consistent with past studies (Dowell *et al.*, 2000; Clarkson *et al.*, 2011; Eltayeb *et al.*, 2011; Iwata & Okada, 2011) that confirmed environmental performance, in the form of reduced air emissions, solid waste production, generation of waste water, environmental accidents and use of hazardous materials, could contribute to financial performance. This might be attributed to the manufacturers' stand to gain resource efficiencies that lead to reduced operation cost, and superior green image through their efforts to eliminate waste and pollution. Accordingly, the reported predictive role of environmental performance on financial performance provided evidence to validate the applicability of the natural resource-based theory (Hart, 1995; Hart & Dowell, 2011) in the context of a developing country.

Conclusion

This research had examined the link between financial performance, environmental performance and strategic environmental management among Malaysian manufacturing companies. The role of environmental performance as driver for enhancing financial performance had been confirmed. As such, in line with "pays to be green" literature, the study provided empirical evidence to validate the potential of companies to gain superior financial performance by improving their environmental practices. Furthermore, this study also revealed that environmental strategic focus could directly enhance environmental performance. This finding provided concrete support for manufacturers to integrate environmental considerations in crafting their corporate strategies, policies and action plans. In this regard, the manufacturers could readily justify their environmental investments as the resulting environmental performance would eventually contribute to superior financial performance. Likewise, results of this study could enlighten Malaysian policymakers to enhance the governance of top management initiatives in facilitating environmental performance improvements.

On the other hand, environmental shared vision was not found to contribute to environmental performance. Hence, indicating inability of the manufacturers to achieve environmental improvements even though their employees were highly committed to environmental missions and goals. This result highlighted the need to take initiatives to ensure that the environmental mindset among employees was converted into environmental

performance, which served as a key form of productivity improvement through better use of resource and reduced wastage.

Future studies should explore the effects of contextual factors on the companies' link between environmental shared vision and environmental performance. More studies could include organisational factors, such as empowerment of employees and organisational culture, as the moderator to the relationship, thus, providing further insight on what conditions could enable positive effects of environmental shared vision on environmental performance.

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