UNIVERSITI PUTRA MALAYSIA

ENVIRONMENTAL CAPABILITIES, ENVIRONMENTAL INNOVATION, AND FIRM PERFORMANCE OF MANUFACTURING COMPANIES IN MALAYSIA

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FEP 2018 51

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By

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Thesis Submitted to the School of Graduate Studies, Universiti Putra Malaysia, in Fulfillment of the Requirements for the Degree of Doctor of Philosophy

August 2018

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Abstract of thesis presented to the Senate of Universiti Putra Malaysia in fulfilment of the requirement for the degree of Doctor of Philosophy

ENVIRONMENTAL CAPABILITIES, ENVIRONMENTAL INNOVATION, AND FIRM PERFORMANCE OF MANUFACTURING COMPANIES IN MALAYSIA

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August 2018

Chairman : Associate Professor Ong Tze San, PhD
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Business firms are increasingly adopting proactive environmental management as business strategy to address environmental challenges and enable the shift to green market competition. In doing so, it is crucial for these firms to be equipped with environmental capabilities for sustaining firms' competitive capabilities in terms of environmental performance and innovation, which would eventually lead to superior firm performance. However, to date businesses are still uncertain about what kind of environmental capabilities could enhance firm performance. This is because extant empirical research had largely focused on examining direct effects of proactive environmental management on firm performance. Thus, this study examined how dynamic capabilities emerged from proactive environmental practices foster the creation of environmental capabilities that in turn enhances firms' competitiveness and financial performance. Further, the natural resource-based theories have clearly specified innovation as the core factor enabling superior firm performance from environmental management. In view of limited empirical studies in this perspective, this study examined the mediating role of environmental innovation. Data collection was executed using a survey study over a period of one year in 2017. A total of 124 responses were collected from managers of EMS14001 certified manufacturers in Malaysia, and data was subjected to a structural equation analysis using the Smart PLS version 3.2.7 software.

Results indicated that environmental strategic focus and environmental collaboration directly enhance environmental performance. While, environmental technological capabilities exert a counteracting effect on environmental performance. In addition, environmental technological capabilities and environmental collaboration were found to directly enhance environmental innovation. On the other hand, environmental

strategic focus indirectly enhances environmental innovation via environmental performance. However, contrary to prediction, results failed to validate environmental shared vision and environmental management support as environmental capabilities, as both construct do not directly contribute to both environmental performance and environmental innovation. Results also endorse environmental innovation as the key enabler for the creation of economic values from environmental management. This is owing to its function as the sole factor that directly contributes to firm performance both in terms of competitive advantage and financial performance. Moreover, environmental innovation is also found to be the full mediator that translates benefits of environmental performance into competitive advantage and financial performance. Further, despite the apparent role of environmental performance as environmental value, it does not exert direct influence on competitive advantage nor financial performance. Instead environmental performance has an indirect effect on competitive advantage and financial performance through environmental innovation.

This study integrates theories of dynamic capabilities and the natural resource-based theories, and establishes a research model for analysing proactive environmental management. The study validated the predictive role of environmental capabilities and the mediating role of environmental innovation, and revealed the significant paths leading to superior firm performance among environmentally proactive manufacturers in Malaysia. Findings confirmed that achievements in environmental innovation would likely convert manufacturers' strengths in environmental management into market related benefits, thus resulting in superior financial performance. Overall, findings of this study provide useful insights to manufacturers and the Malaysian Government in crafting environmental policy and strategies.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi keperluan untuk ijazah Doktor Falsafah

KEUPAYAAN ALAM SEKITAR, INNOVASI ALAM SEKITAR, DAN PRESTASI FIRMA ANTARA SYARIKAT-SYARIKAT PERKILANGAN DI MALAYSIA

LEE AH SUAT

Ogos 2018

Pengerusi : Profesor Madya Ong Tze San, PhD
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Firma perniagaan kini semakin proaktif dalam mengamalkan pengurusan alam sekitar sebagai strategi perniagaan bagi menangani cabaran degradasi alam sekitar dan persaingan di pasaran. Oleh demikian, amatlah penting bagi firma-firma perniagaan mempunyai keupayaan untuk mengendali alam sekitar dengan lebih effektif bagi meningkatkan prestasi and inovasi perlindungan alam sekitar, dan sekaligus memberi kesan positif terhadap prestasi keuntungan firma. Walau bagaimanapun, sehingga kini firma-firma perniagaan masih kurang jelas mengenai factor-faktor keupayaan alam sekitar yang dapat meningkatkan prestasi keuntungan firma. Kajian-kajian terdahulu lebih tertumpu kepada kesan secara langsung antara pengurusan alam sekitar secara proaktif dan prestasi keuntungan firma. Justeru kajian ini dijalankan bagi menilai peranan keupayaan dinamik yang dihasilkan dari pengurusan alam sekitar secara proaktif sebagai faktor untuk meningkatkan daya persaingan dan prestasi kewangan firma. Selain itu, prestasi inovasi alam sekitar juga adalah amat penting bagi mencapai tahap kewangan yang cermerlang dari pengurusan alam sekitar dikalangan firma-firma pengilangan. Oleh itu, kajian ini menilai fungsi pengantara inovasi alam sekitar terhadap prestasi perlindungan alam sekitar dan prestasi kewangan firma. Data dikumpul melalui hasil kajian tinjauan pada tahun 2017. Sejumlah 124 maklum balas telah diperolehi daripada pengurus firma-firma pengilangan yang diiktiraf EMS14001 di Malaysia. Analisa data telah dijalankan dengan menggunakan perisian Smart PLS versi 3.2.7.

Hasil analisa menunjukkan bahawa fokus strategik dan hasi kolaborasi alam sekitar dapat meningkatkan prestasi perlindungan alam sekitar firma. Namun demikian, keupayaan teknologi alam sekitar telah memberi kesan negatif terhadap prestasi perlindungan alam sekitar firma. Di samping itu, keupayaan teknologi dan hasil kolaborasi alam sekitar mempunyai kesan positif terhadap prestasi inovasi alam sekitar. Selain dari itu, fokus strategik alam sekitar hanya dapat meningkat inovasi alam sekitar firma secara tidak langsung melalui kesan prestasi perlindungan alam

sekitar. Walaubagaimanapun, ianya didapati bertentangan dengan ramalan, keputusan kajian tidak menyokong visi alam sekitar dan sokongan pengurusan alam sekitar sebagai keupayaan alam sekitar yang diperlukan. Ini adalah kerana kedua-dua pembolehubah tidak mempunyai kesan langsung terhadap prestasi perlindungan alam sekitar dan inovasi alam sekitar. Keputusan kajian ini menyokong peranan inovasi alam sekitar sebagai faktor utama yang membolehkan penghasilan nilai ekonomi dari pengurusan alam sekitar. Ini adalah disebabkan oleh inovasi alam sekitar yang berperanan sebagai faktor tunggal yang juga secara langsung didapati menyumbang terhadap daya persaingan dan prestasi kewangan firma. Selain itu, inovasi alam sekitar turut dikesan berfungsi sebagai pengantara utama yang mampu mengubah prestasi alam sekitar kepada daya persaingan and pretasi kewangan firma Walaupun prestasi perlindungan alam sekitar didapati berfunsi untuk pembaikan alam sekitar, namun ianya tidak memberi kesan secara langsung untuk meningkakan daya persaingan atau prestasi kewangan firma. Sebaliknya prestasi perlindungan alam sekitar memberi kesan tidak langsung terhadap daya persaingan dan prestasi kewangan firma melalui pencapaian inovasi alam sekitar.

Kajian ini menggunakan teori keupayaan dinamik dan teori sumber semula jadi untuk menganalisa cara pengurusan alam sekitar secara proaktif dan prestasi kewangan firma-firma pengilangan. Kajian ini membuktikan bahawa terdapat peranan positif antara daya keupayaan alam sekitar dengan pengantaraan inovasi alam sekitar. Kajian juga telah dapat mengenal pasti langkah-langkah perjalanan untuk mencapai prestasi kewangan yang cermerlang di kalangan firam-firma pengilangan yang mengamalkan cara pengurusan alam sekitar secara proaktif di Malaysia. Keputusan kajian ini mengesahkan bahawa pencapaian firma dalam inovasi alam sekitar akan membolehkan firma pengilangan mengubah prestasi perlindungan alam sekitar kepada daya persaingan, dan prestasi kewangan firma. Secara keseluruhannya, keputusan kajian ini dapat meningkatkan pengetahuan yang berguna kepada firma-firma pengilangan serta Kerajaan Malaysia bagi menggubal polisi dan strategi berkaitan pengurusan alam sekitar.

ACKNOWLEDGEMENTS

In the process of accomplishing my thesis, countless people have supported me in many meaningful manners, helping me out at critical moments. Hence, I would like express my deepest gratitude to all of them.

I am greatly indebted to the Chairperson of Supervisory Committee, Associate Prof. Dr Ong Tze San, for her guidance, patience and constant support throughout this study. Her positive disposition has greatly encouraged me to remain perseverance every time I seemed hopeless in study. My heartfelt thanks goes to her for her willingness to meet me and provide me feedback at short notice despite her busy schedule. Without her, it would be impossible for me to complete this study.

Special thanks go to members of Supervisory Committee, Dr. Ridzwana Binti Mohd Said and Dr. Rosmila Binti Senik. I am thankful for their invaluable comments, advices, as well as moral supports extended to me.

I am grateful to the Faculty of Economics and Management and Graduate School of Studies, Universiti Putra Malaysia, for giving me the opportunity to pursue my doctoral research. My sincere gratitude goes to this institution for the financial aids provided in terms of research grant.

I am indebted to my family for their love and support during my journey of study, especially to my sisters and nieces whom have come to my aids whenever needed. Your love and care touch my heart deeply. To my late parents and late brother, this thesis is dedicated to you in remembrance of you forever. My heartfelt thanks also go to friends and colleagues for their encouragement and supports, and also for being there to listen when I needed an ear.

My sincere gratitude is extended to Universiti Tunku Abdul Rahman for granting me sabbatical leaves, research grant and many other forms of supports to complete this study.

Finally, I would like to acknowledge the scholarship provided by MyBrain 15 of Malaysian Education Ministry. My sincere gratitude for the financial aids granted.

This thesis was submitted to the Senate of the Universiti Putra Malaysia and has been accepted as fulfilment of the requirement for the degree of Doctor of Philosophy. The members of the Supervisory Committee were as follows:

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This is to confirm that:

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

LIST OF ABBREVIATIONS

AC	Cronbach's Alpha
AVE	Average variance extracted
BCES	Business case for environmental sustainability
CR	Composite reliability
EMS	Environmental Management System
EPI	Environmental Performance Index
ETQM	Environmental Total Quality Management
ISO	International Organization for Standardization
NRBV	Natural Resource-Based View of firm
PLS	Partial Least Square Regression
PLS-SEM	Partial Least Squares Structural Equation Modelling
RBV	Resource-Based View of firm
SEM	Structural Equation Modelling
UNFCCC	United Nations Framework Convention on Climate Change
VRIN	Valuable, Rare, imperfectly imitable, Non-substitutable

CHAPTER 1

INTRODUCTION

1.1 Introduction

This chapter presents an introduction of this study. Sections 1.2 to 1.5 introduce the research background, the problem statement, research questions and research objectives. Section 1.6 and Section 1.7 identify significance of this study and define the scope of this study respectively. The operational definition of the terms used in this study is included in Section 1.8. A chapter summary is included in Section 1.9.

1.2 Research background

1.2.1 Environmental issues and its development

Environmental protection awareness accelerates upon adoption of the United Nations Framework Convention on Climate Change (UNFCCC) during the Earth Summit in 1992. Most importantly, the Kyoto Protocol 2005, as the implementation arm of UNFCCC, has successfully secured binding targets for reducing greenhouse gases emissions from the major developed economies for the period from 2008 to 2020. The countries involved, among others, including the European Union (28 countries), Japan, Australia and other developed economies. Implementation of Kyoto Protocol marks the beginning of environmental mitigation commitment at the governmental level that serves to drive environmental issues to become the major concern of regulators of most countries and also the leaders of corporate sector. At governmental level in the developed economies, there are continuous upsurge of environmental focus in the governmental policy making and planning. Thus, businesses in those developed economies who are parties to Kyoto Protocol with binding targets are facing increasingly stringent environmental requirements imposed by their regulators. These environmental requirements are impacting developing countries as well due to the fact that a substantial amount of manufactured products in the developing countries, such as Malaysia, are being exported to the developed economies (Ministry of Finance Malaysia, 2017).

Furthermore, the strengths of environmental protection movements are gaining forces. This is evidenced by the adoption of 'the Paris Agreement' in year 2015 by 195 UNFCCC participating member countries, as the successor plan of the Kyoto Protocol that is expected to expire in year 2020. In addition to securing continuous environmental commitments from the member countries, the agreement aims to strengthen their environmental accountability through regular reporting on the progress of environmental efforts to reduce greenhouse emissions by the member

countries. In sum, environmental protection needs are highly aware and engaged by countries worldwide.

1.2.2 Impact of environmental challenges on manufacturing businesses

From the business perspective, environmental issues pose opportunities as well as threats to the manufacturers. In fact, manufacturing firms stand to gain benefits from growing green markets. Increasingly, manufacturers are incorporating environmental features into their new product developments, as market for environmentally friendly products has grown substantially and will continue to grow as more consumers become environmentally conscious (Dangelico & Pujari, 2010; Pujari, Peattie, & Wright, 2004). For example, customers are more willing to pay for a premium price for environmental friendly products, as they feel proud to buy from firms with good environmental reputation (Henderson, Reinert, Dekhtyar, & Migdal, 2017). Nonetheless, these manufacturers similarly face escalating costs for mitigating environmental damages associated with their business activities (Henderson et al., 2017). These include costs on waste treatments, cleaning up pollutions, investment in technologies and other environmental regulations compliance costs. Moreover, these firms are also at risk of penalty charges when they are in breach the environmental regulations. In addition, these manufacturers could possibly face higher operation costs as a result of increased price for energies and raw materials caused by depletion in natural resources.

This phenomenon has sparked extensive scholars' interest to investigate how corporate environmental strategies could affect firm performance, a notion known as 'pays to be green'. Particularly, firms stand to gain benefits from environmental management through innovations in finding solutions for process improvements and product differentiation related to environmental issues (Hart, 1995; Porter & Van der Linde, 1995). Pollution is a form of waste resulted from inefficiencies in the business processes. As proposed by a few environmental management scholars (Ambec & Lanoie, 2008; Graham & Potter, 2015; Hart, 1995; Sharma & Vredenburg, 1998), there are rooms for lowering operation costs when firms take proactive steps to improve product design and business processes with focus on pollution prevention. Further, according to Ambec and Lanoie (2008), firms gain differentiation advantage through green products offering and stand to gain the benefits of first mover advantage in the markets they compete when they incorporate environmental considerations at an early stage of product life cycle. As such, in line with "pays to be green" literature, the proponents of value based environmental management assert that firms must possess the ability to manage environmental issues in a way that contribute concurrently towards the society's needs for environmental protection and also realising economic benefits (Figge & Hahn, 2012; Porter & Kramer, 2006; Schaltegger & Synnestvedt, 2002; Wagner & Schaltegger, 2004). Thus, it has become extremely important for firms to integrate environmental sustainability concept into their corporate policies and practices strategically as managers would need to incorporate both environmental considerations and long term firm performance in making environmentally related decisions (Porter & Kramer, 2006). Particularly,

proponents of business case for environmental sustainability (BCES) assert that businesses could leverage on environmental management to gain their competitive benefits by proactively managing adverse impacts of their activities on the natural environment (Calabrese, Costa, Menichini, Rosati, & Sanfelice, 2013; Endrikat, Guenther, & Hoppe, 2014; Epstein & Roy, 2003; Henri & Journeault, 2008; Porter & Kramer, 2006; Porter & Van der Linde, 1995; Russo & Fouts, 1997; Salzmann, Ionescu-Somers, & Steger, 2005; Schrettle, Hinz, Scherrer-Rathje, & Friedli, 2014). Accordingly, firms are encouraged to justify investments in environmental practices based on the potential to leverage on environmental protection for competitiveness and for achieving superior firm performance. As such, these companies invest in advanced environmental protection initiatives above minimum regulatory requirements with the aim to achieve superior firm performance from their environmental investment. This is due to the reason that investment in environmental protection activities enables firms to improve its market opportunities and also to save costs in future environmental liabilities, material wastage and reduced waste products. The promise of superior firm performance from proactive environmental management is also illustrated by literature review on empirical studies conducted in the Western world (Ambec, Cohen, Elgie, & Lanoie, 2013; Ambec & Lanoie, 2008; Margolis & Walsh, 2003) as well as among manufacturing firms in Malaysia (Eltayeb, Zailani, & Ramayah, 2011; Lee, Ooi, Chong, & Lin, 2013).

1.2.3 Environmental management policies in Malaysia

The Malaysian Government undertakes a proactive role in protecting the natural environment. The Environmental Quality Act 1974 and its subsequent enactments form the regulatory framework governing environmental protection in Malaysia. The legislation aims at preventing, controlling and abating pollution, and regulating wastes from being dumped into the environment. Particularly, the legislation requires a mandatory environmental impact assessment for planning of any industrial developments before implementation. Internationally, Malaysia remains as an active party to the UNFCCC and commits to reduce the nation's greenhouse gas emissions intensity of gross domestic product by 45% by year 2030 relative to in year 2005 (Government of Malaysia, 2015). In addition to existing environmental legislation, the Malaysian Government emphasizes greatly on attaining voluntary environmental accountability from all parties (Department of Environment Malaysia, 2010), particularly economic agents such as manufacturing companies which utilise heavily on natural resources. This proactive approach to environmental protection was carried out via the establishment of Malaysia's National Policy on the Environment in year 2002 as efforts of Malaysian Government to embrace sustainable development.

Indeed, the focus of the Malaysian National Policy on the Environment is to enable the private sector to engage in sustainable development for keeping abreast with the nation's economic development (Department of Environment Malaysia, 2010). Particularly, sustainable manufacturing forms the fundamental basis of the Malaysian Economic Transformation Programme that aims to transform Malaysia into a high income nation (Malaysia Economic Planning Unit, 2013). Manufacturing companies

are encouraged to proactively enhance their environmental capabilities, which are important to the creation of environmental performance and innovation for keeping abreast with environmental challenges. In this instance, initiatives were undertaken by the Malaysian Government to backup sustainable manufacturing, including tax incentives and funding for investments in green technology and supporting programmes entitled to carbon credits. Accordingly, the shift towards sustainable manufacturing is highly engaged by the Malaysian Government through its policies on environmental protection.

Correspondingly, the need for proactivity in environmental management is also highly engaged by the manufacturing sector. The importance of environmental innovation in business sector is reflected in findings reported in 17th Annual Global Chief Executive Officers (CEOs) survey conducted by PricewaterhouseCoopers (PWC) based on 1334 CEOs world-wide (Preston, 2014). The report indicated that 46% of the CEOs surveyed agree that climate change and resource scarcity constitute to megatrend that would transform their business. The CEOs think innovation in products and services is the biggest opportunity for growth in their business. In this instance, the top priority areas of environmentally related innovation are likely to include products, technology, customer experience and systems and processes as reported by a survey based on 246 CEOs from all around the world (Percival, Shelton, & Andrews, 2013). As such, the CEOs foresee substantial source of revenues flowing from new products and services would be resulted from their innovative efforts (Nally, 2011).

In fact, a literature survey shows that sustainable manufacturing were undertaken among manufacturing firms in Malaysia (Hassan, Nordin, & Ashari, 2015; Habidin, Zubir, Fuzi, Latip, & Azman, 2015). For example, Malaysia is considered as most advanced in producing energy efficient vehicles among automobile manufacturers in ASEAN (Ng, Nor Aziati, & Sha'ri 2017). These manufacturers were reported to be engaged in advance environmental protection initiatives above minimum regulatory requirements. The initiatives, among others, including implementation of environmental management system, some with ISO certified, adopting clean technologies, environmental collaborations, green purchasing, and environmental reporting (Eltayeb et al., 2011; Habidin et al., 2015; Hassan, Nordin, & Ashari, 2015; Lee et al., 2013). In sum, it appears that the shift to green manufacturing is also justified by a change in competitive landscape of manufacturing sector towards environmentally focused. As such, manufacturers' environmental strategies play a crucial role in determining their competitive position and environmental management would likely to remain as a strategic agenda of corporate management.

1.3 The problem statement

Environmental degradation problems are on the rise in Malaysia. The country's environmental performance index (EPI), a world ranking for environmental evaluation based on high-priority environmental issues, has declined from 51st position in year 2014 to 63rd position in year 2016 (Hsu & Zomer,2016; Hsu, Tsai, Hsieh, & Wang,

2014). Particularly, environmental degradation associated with manufacturing activities is a critical issue that needs immediate rectifications. This is due to the fact that manufacturing activities are associated with a substantial volume of pollutions and waste that caused environmental damages (Department of Statistics Malaysia, 2011, 2012; M. N. Hassan, Afroz, Mohamed, & Awang, 2005).

According to findings of two consecutive annual surveys by the Department of Statistics, Malaysia, based on 7,601 business establishments in Malaysia, manufacturing sector was reported as the largest contributor to environmental expenditure: 80.8% and 72.2% for year 2010 and 2011 respectively (Department of Statistics Malaysia, 2011, 2012). Moreover, environmental degradation is further intensified with improper handling of toxic and hazardous waste by manufacturers. For example, the pollution of Semenyih River during year 2016 which caused closure of water treatment plant six times, was a result of illegal discharge of waste effluents into the river by factories nearby (Khalid, Mazlin, Faridah, Suhaimi, & Spray, 2017). Likewise, litigation actions were initiated on Malaysian Vermicelli Manufacturers (Melaka) Sdn Bhd for discharging sewage and waste products into the Melaka River (Mustafa & Mohamed, 2015). Similarly, there were also cases whereby industrial wastes were burned or dumped into rivers or bushes or just stored in the warehouses (M. N. Hassan et al., 2005). The severity of these irresponsible handling of environmental waste is evidenced by increasingly larger penalty imposed by Malaysian courts on cases of environmental pollutions and environmental crimes relating to manufacturing activities (Mustafa & Mohamed, 2015). These environmental damages caused climate change that has far-reaching damages to the well-being of the world.

Consequentially, it is of paramout importance that manufacturing sector in Malaysia are to be proactive in mitigating environmental damages arising from their manufacturing processes. In fact according to Muhammad, Amran, Ahmad, and Tan (2015), Malaysian manufacturers are facing intensified demand to green their manufacturing processes as prompted by regulators, customers, non-governmental bodies and society. Environmental implications on the manufacturers are enormous due to the high visibility of environmental damages caused by manufacturing activities. Across the world, manufacturers are subjected to increasing environmental laws and policies from the regulators (Banerjee, Iyer, & Kashyap, 2003; Henderson et al., 2017). Likewise, manufacturing firms are compelled to be environmentally responsible as increasingly more consumers and investors become environmentally conscious (Dangelico & Pujari, 2010). Moreover, manufacturers are also facing intense examinations of their environmental and social performance by those environmental advocacy groups. Consequentially, manufactruing firms are obliged to take charge of the negative externalities created by their business activities on all stakeholders including the natural environment (Galbreath, 2011).

Accordingly, environmental issues constitute the major forces shaping business environment that exert profound effect on competitive landscape of manufacturers (Lubin & Esty, 2010). Indeed, failure to address environmental protection issues may

subject these firms to the risks of losing competitiveness (Henderson et al., 2017; Lubin & Esty, 2010; Nidumolu, Prahalad, & Rangaswami, 2009); and may even affect their survival (Kiron, Kruschwitz, Rubel, Reeves, & Fuisz-Kehrbach, 2014; Lubin & Esty, 2010).

However, to date, manufacturing bussinesses are still clueless about what factors could enable concurrent creation of environmental values and economic values. This is evidenced by high failures experienced by firms in gaining superior economic returns from their environmental investments. According to the findings of several global surveys conducted jointly by the Boston Consulting Group and MIT-Sloan Management Review from 2009 to 2013, there were only approximately 30% to 37% of companies surveyed manage to generate superior firm performance from implementing advanced environmental practices (Berns et al., 2009; Haanaes et al., 2011; Kiron, Kruschwitz, Haanaes, Reeves, & Goh, 2013; Kiron, Kruschwitz, Haanaes, & Velken, 2012; Kiron et al., 2014). These surveys further reported increasing failures when firms attempt to justify business case for environmental sustainability (BCES). In particular, a survey by Kiron et al. (2013) based on a world sample of 1,847 corporate leaders indicated that only approximately 35% of the companies surveyed were able to enhance their profits as a result of their sustainability efforts. As such, it appears that bussinesses worldwide are still struggling to be able to fulfill their environmental accountability yet be profitable. Moreover, environmental protection investments are expensive, complex, and time consuming in realising the expected economic benefits (Li, Ngniatedema, & Chen, 2017), and require effective implementation. Thus, environmental investments are associated with high risks resulting from high possibility of failures. Unsuccessful environmental implementations may possibly lead to large financial losses or firms going out of business due to inability to compete (Kiron et al., 2014; Lubin & Esty, 2010).

Furthermore, the possible abandonment of environmental practices by these firms could hinder the potential of solving environmental degradation problems through corporate voluntary environmental accountability. As such, it is highly probably that businesses face difficulty to achieve a BCES, despite empirical evidences from "pays to be green" literature suggested otherwise. Hence, it appears that current literature on "pays to be green" is possibly lacking in informing firms on how to achieve a BCES. Consequentially, there is a crucial need to extend the scope of investigation from the focus on "pays to be green" to "what pays to be green", thus enabling discovery of environmental capabilities fundamental in achieving superior firm performance (Dyllick & Hockerts, 2002; Figge & Hahn, 2012; King & Lenox, 2001a; Orsato, 2006; Telle, 2006; Wagner & Schaltegger, 2004).

According to the dynamic capabilities view of firm performance (Eisenhardt & Martin, 2000; Kay, Leih, & Teece, 2018; Teece, 2007; Teece, Pisano, & Shuen, 1997), all firms need to be equipped with dynamic capabilities to continuously respond to their environmental challenges through reconfiguration of its resources and capabilities that result in maintenance of their competitive capabilities. However, despite investment made in environmental practices, little is known about how dynamic capabilities

emerged from proactive environmental practices. Thus, it is important to identify what kind of environmental capabilities could emerge when a firm implements proactive environmental strategies and how these environmental capabilities affect competitive capabilities and firm performance. Such environmental capabilities can be expected to be the most critical in helping companies to build a BCES (Gabler, Richey, & Rapp, 2015).

Further, extant literature had shown that environmental innovation and environmental performance constitute as competitive capabilities arises from proactive environmental strategies (Christmann, 2000; Klassen & Whybark, 1999a; Sharma & Vredenburg, 1998). Particularly, the natural resource-based theories (NRBV) (Hart, 1995; Hart & Dowell, 2011) posit innovation as the necessary outcomes from environmental strategies for achieving superior firm performance, thus suggesting a mediating role of environmental innovation. However, current empirical studies have not examined the mediating role of environmental innovation. Thus, this study aims to advance understandings on the effects of proactive environmental strategies on firm performance through mediating effects of environmental innovation empirically.

1.4 Research questions

The main research question (RQ) is "What are the pathways for manufacturing firms to realise superior firm performance from their implementation of environmental strategies? Specific research questions addressed in this study are as follows:

1. To what extent do environmental capabilities relate to environmental performance?
2. To what extent do environmental capabilities relate to environmental innovation?
3. To what extent does environmental performance relate to environmental innovation?
4. To what extent do environmental competitive capabilities (environmental performance and environmental innovation) relate to competitive advantage?
5. To what extent do environmental competitive capabilities (environmental performance and environmental innovation) relate to financial performance?
6. To what extent does environmental innovation mediate the relationship between environmental performance and firm performance (competitive advantage and financial performance)?
7. To what extent does competitive advantage relate to financial performance?

1.5 Research objectives

The main research objective (RO) is "to investigate the association among environmental capabilities, environmental innovation, environmental performance and firm performance; in order to identify the pathway to realise superior firm

performance among manufacturing firms that implement proactive environmental strategies". Specific research objectives addressed in this study are as follows:

1. To examine the relationship between environmental capabilities and environmental performance.
   Sub-objective: To determine the relationship between (a) environmental strategic focus, (b) environmental shared vision, (c) environmental technological capabilities, (d) environmental management support, (e) environmental collaboration and environmental performance.
2. To examine the relationship between environmental capabilities and environmental innovation.
   Sub-objective: To determine the relationship between (a) environmental strategic focus, (b) environmental shared vision, (c) environmental technological capabilities, (d) environmental management support, (e) environmental collaboration, and environmental innovation.
3. To examine the relationship between environmental performance and environmental innovation.
4. To examine the relationship between environmental competitive capabilities and competitive advantage.
   Sub-objective: To determine the relationship between (a) environmental performance, (b) environmental innovation, and competitive advantage.
5. To examine the relationship between environmental competitive capabilities and financial performance.
   Sub-objective: To determine the relationship between (a) environmental performance, (b) environmental innovation, and financial performance.
6. To examine the mediation effects of environmental innovation on the relationship between environmental performance and firm performance.
   Sub-objective: To determine the mediation effects of environmental innovation on the relationship between environmental performance, and (a) competitive advantage, (b) financial performance.
7. To examine the relationship between competitive advantage and financial performance.

1.6 Significance of the study

This research adds on to "pays to be green" literature by showing "what pays to be green", through identification and integration of environmental capabilities constructs as the outcomes of environmental strategies. In doing so, this research contributes to the natural resource-based theory (Hart, 1995; Hart & Dowell, 2011) in explaining the relationship between strategic use of organizational resources on environmental issues and firms' competitive advantage and financial performance.

Empirical findings from this study could provide a clearer picture on the role played by different types of environmental outcomes: environmental strategic focus, environmental shared vision, environmental collaboration, environmental management support, environmental technological capabilities, environmental innovation and environmental performance in realising competitive advantage and financial performance. Such information is useful to the manufacturers when deciding their environmental policies and practices, focus of environmental management, as well as deriving at optimum resource allocation for environmental protection.

Findings from this study would identify the core capabilities fundamental to the manufacturers that enable them to derive competitive benefits while protecting the natural environment on a voluntary basis. Such knowledge would aid regulators in crafting policies, measures and incentives to strengthen manufacturers' environmental capabilities. This would in turn encourage corporate voluntary proactive environmental behaviour among firms, which is the core driving force in achieving green economies in Malaysia.

1.7 Scope of study

This study limits its scope of analysis to Malaysian manufacturing firms that are practicing proactive environmental strategies. The study is viewed as part of a larger effort by researchers to understand the potential of BCES. The focus of this study is to examine proactive environmental strategies as sources of environmental capabilities that enable continuous strengthening of two core competitive capabilities, i.e., environmental performance and environmental innovation of the manufacturing firms. Further, this study also examines the relative role of environmental innovation and environmental performance on firm performance of the manufacturing firms via mediation analysis. The data for this study were collected from manufacturing firms certified with ISO 14001 from multiple industries as listed in the Directory of Federations of Malaysian Manufacturers 2015. As such, the results of this study could only be generalised to manufacturing firms implementing proactive environmental strategies.

1.8 Definition of terms

Definitions of key terms included in this research are presented below. These definitions serve to guide key concepts discussion included in this thesis.

Business case for environmental sustainability (BCES): A firm's practice of justifying environmental investments based on the potential of generating net economic benefits from those investments (Epstein & Roy, 2003).

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Competitive advantage: A firm's competitive benefits derived from their environmental practices. It is observable by measuring four indicators: reduction in cost, improved product quality, improved reputation with customer, and ability to compete in international markets (Karagozoglu & Lindell, 2000).

Environmental capabilities: A firm's dynamic capabilities emerge follow-on firms' environmental strategies implementation (Gabler et al., 2015).

Environmental collaboration: A firm's direct involvement with its suppliers, customers and consumers, and the communities in planning jointly for environmental solutions (Hofmann, Theyel, & Wood, 2012). Environmental collaboration with suppliers or customers, each is observable by measuring the scope of environmental cooperation among collaborators for environmental solutions in five indicators: collective goals, mutual understanding of responsibilities, working together, joint planning, and joint decisions (Vachon & Klassen, 2008). Environmental collaboration with the local community is observable by measuring scope of collaborations in four indicators: cleaner processes; substitute materials; recyclable products; and cleaner technology development.

Environmental innovation: A firm's technical innovation represented in two dimensions, i.e. environmental product innovation and environmental process innovation (OECD, 2005). Environmental product innovation refers to the introduction of a product or service that is new or has been substantially improved with respect to their intended uses or characteristics, aimed at mitigating harmful environmental impact (Cheng & Shiu, 2012; OECD, 2005; Rennings, Ziegler, Ankele, & Hoffmann, 2006). Environmental process innovation refers to the implementation of a new or substantially improved production or delivery method aimed at reducing harmful environmental impact during manufacturing processes (Cheng & Shiu, 2012; OECD, 2005; Rennings et al., 2006).

Environmental management support: A firm's management processes implemented to facilitate integration of environmental considerations within its operational processes (Theyel, 2000). It is observable by measuring the extent of adoption of eight environmental management practices: Environmental Management System (EMS), ISO 14001 EMS, environmental audits, environmental reporting, cross functional environmental team, life cycle assessment, environmental-based performance measures, and designated environmental department or manager (González-Benito & González-Benito, 2005; Russo & Harrison, 2005; Theyel, 2000).

Environmental performance: A firm's achievements in minimising adverse impact on the natural environment arises from its products use or manufacturing and distribution processes (Delmas, Etzion, & Nairn-Birch, 2013). It is observable by measuring reduction in four indicators: use of hazardous materials, waste, and harmful emissions; consume fewer resources such as water, electricity, energy, petrol and gas; compliance

with environmental regulations, and frequency of environmental accidents (Zhu & Sarkis, 2004).

Environmental shared vision: A firm's strategic goal for environmental protection that is shared as core values among its organisational members (Chen et al., 2015). It is observable by measuring the extent of a firm's environmental goals adaptation by its employees in four indicators: as common goals, in total agreement, commitment, and enthusiasm (Jansen, George, Van den Bosch, & Volberda, 2008).

Environmental strategic focus: The extent environmental commitments being included within firms' strategic decision makings and planning processes (Banerjee, 2002). The construct includes two dimensions. First, environmental considerations at corporate strategy, observable by four indicators: strategic planning, quality criteria, corporate goals, and new products development. Second, environmental considerations at market strategy, which is reflected by three indicators: product advertisements, marketing strategies, and product market decisions (Banerjee et al., 2003).

Environmental technological capabilities: A firm's capability to assimilate, use, adapt, and change existing environmental technologies that enable it to create new environmental technologies and to develop new products and processes beneficial to environmental protection (Kim, 2001). It is observable by measuring the development process of environmental technologies in four indicators: acquire technologies related information, identify new technology opportunities, respond to technologies change, master state of art technologies, and constant technology innovations development (Zhou & Wu, 2010)

Financial performance: A firm's economic outcomes in terms of profitability. It is observable by measuring improvements in five indicators: profit margin, market share, sales revenues, returns on investment, and new market opportunities (Karagozoglu & Lindell, 2000; Rao, 2002; Rao & Holt, 2005).

Proactive environmental strategies: 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). It is observable by the extent of adoption of advance environmental practices such as environmental policies and guidelines, environmental management system, clean technologies, dedicated environmental department, environmental alliances and joint ventures, environmental management control system; and environmental reporting.

1.9 Chapter summary

This chapter presents the research context including background, problem statement and research gaps. The chapter specified research questions, research objectives to be attained, and also articulated the significance of study. Chapter two incorporates literature review on the variables included in this study and examines the main theories underpinning current research. The chapter concluded with a theoretical framework. Chapter three discusses the development of hypotheses representing the proposed relationship between the constructs incorporated in this research and concluded with a conceptual framework to guide empirical investigation. Chapter four explains choice of research paradigm underpinned the research design of this study. The chapter describes the research design, pilot study, development of survey instrument, procedures for data collection and choice of statistical tools for data analysis. Further, the chapter presents findings of data analysis based on survey data collected from manufacturing firms in Malaysia by using Smart PLS software and SPSS. The chapter also outlines results of sample characteristics, measurement model, hypothesis testing and presents discussions of findings revealed from data analysis, Lastly, chapter 6 outlines summary of findings, theoretical and managerial implications, limitations of current study and suggestions for future researches.

REFERENCES

Abdullah, A. (2005). Cultural dimensions of Anglos, Australians and Malaysians. *Journal of International Business and Entrepreneurship, 2*(2), 21-33.

Afuah, A. (2002). Mapping technological capabilities into product markets and competitive advantage: The case of cholesterol drugs. *Strategic Management Journal, 23*(2), 171-179.

Aguilera-Caracuel, J., Guerrero-Villegas, J., Vidal-Salazar, M. D., & Delgado-Márquez, B. L. (2015). International cultural diversification and corporate social performance in multinational enterprises: The role of slack financial resources. *Management International Review, 55*(3), 323-353.

Aguilera-Caracuel, J., & Ortiz-de-Mandojana, N. (2013). Green innovation and financial performance: An institutional approach. *Organization & Environment, 26*(4), 365-385.

Albertini, E. (2013). Does environmental management improve financial performance? A meta-analytical review. *Organization & Environment, 26*(4), 431-457.

Albertini, E. (2018). The contribution of management control systems to environmental capabilities. *Journal of Business Ethics*, 1-18.

Alimin, I. I., Raduan, C. R., Haslinda, A., & Jegak, U. (2010). The relationship between organisational competitive advantage and performance moderated by the age and size of firm. *Asian Academy of Management Journal, 15*(2), 157-173.

Alimin, I. I., Raduan, C. R., Jegak, U., & Haslinda, A. (2012). The relationship between organisational resources, capabilities, systems and competitive advantage. *Asian Academy of Management Journal, 17*(1), 151-173.

Alt, E., Díez-de-Castro, E. P., & Lloréns-Montes, F. J. (2015). Linking employee stakeholders to environmental performance: The role of proactive environmental strategies and shared vision. *Journal of Business Ethics, 128*(1), 167-181.

Ambec, S., Cohen, M. A., Elgie, S., & Lanoie, P. (2013). The porter hypothesis at 20: Can environmental regulation enhance innovation and competitiveness? *Review of Environmental Economics and Policy, 7*(1), 2-22.

Ambec, S., & Lanoie, P. (2008). Does it pay to be green? A systematic overview. *Academy of Management Perspectives, 22*(4), 45-62.

Amit, R., & Schoemaker, P. J. H. (1993). Strategic assets and organizational rent. *Strategic Management Journal, 14*(1), 33-46.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103*(3), 411-423.

Aragón-Correa, J. A. (1998). Strategic proactivity and firm approach to the natural environment. *The Academy of Management Journal, 41*(5), 556-567.

Aragón-Correa, J. A., Hurtado-Torres, N. E., Sharma, S., & García-Morales, V. J. (2008). Environmental strategy and performance in small firms: A resource-based perspective. *Journal of Environmental Management, 86*(1), 88-103.

Aragón-Correa, J. A., & Sharma, S. (2003). A contingent resource-based view of proactive corporate environmental strategy. *The Academy of Management Review, 28*(1), 71-88.

Armbruster, H., Bikfalvi, A., Kinkel, S., & Lay, G. (2008). Organizational innovation: The challenge of measuring non-technical innovation in large-scale surveys. *Technovation, 28*(10), 644-657.

Arundel, A., & Kemp, R. (2009). *Measuring eco-innovation (Working Paper No. 2009-017).* Maastricht, The Netherlands: United Nations University - Maastricht Economic and social Research and training centre on Innovation and Technology Retrieved from http://collections.unu.edu/eserv/UNU:324/wp2009-017.pdf.

Avolio, B. J., Zhu, W., Koh, W., & Bhatia, P. (2004). Transformational leadership and organizational commitment: Mediating role of psychological empowerment and moderating role of structural distance. *Journal of Organizational Behavior, 25*(8), 951-968.

Bae, H.-S., & Grant, D. B. (2018). Investigating effects of organisational culture and learning on environmental collaboration and performance of Korean exporting firms. *International Journal of Logistics Research and Applications*, 1-17.

Bakar, K. A., Sam, M. F. M., Tahir, M. N. H., Rajiani, I., & Muslan, N. (2011). Green technology compliance in Malaysia for sustainable business development. *Journal of Global Management, 2*(1), 55-65.

Baker, W. E., & Sinkula, J. M. (2005). Environmental marketing strategy and firm performance: Effects on new product performance and market share. *Journal of the Academy of Marketing Science, 33*(4), 461-475.

Banerjee, S. B. (2001). Corporate environmental strategies and actions. *Management Decision, 39*(1), 36-44.

Banerjee, S. B. (2002). Corporate environmentalism: The construct and its measurement. *Journal of Business Research, 55*(3), 177-191.

Banerjee, S. B., Iyer, E. S., & Kashyap, R. K. (2003). Corporate environmentalism: Antecedents and influence of industry type. *Journal of Marketing, 67*(2), 106-122.

Bansal, P., & Roth, K. (2000). Why companies go green: A model of ecological responsiveness. *The Academy of Management Journal, 43*(4), 717-736.

Barney, J. B. (1991). Firm resources and sustained competitive advantage. *Journal of Management, 17*(1), 99-120.

Barney, J. B. (2001). Resource-based theories of competitive advantage: A ten-year retrospective on the resource-based view. *Journal of Management, 27*(6), 643-650.

Barney, J. B., Ketchen, D. J., & Wright, M. (2011). The future of resource-based theory: Revitalization or decline? *Journal of Management, 37*(5), 1299-1315.

Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of personality and social psychology, 51*(6), 1173-1182.

Bartlett, D., & Trifilova, A. (2010). Green technology and eco-innovation: Seven case-studies from a Russian manufacturing context. *Journal of Manufacturing Technology Management, 21*(8), 910-929.

Benitez-Amado, J., & Walczuch, R. M. (2012). Information technology, the organizational capability of proactive corporate environmental strategy and firm performance: a resource-based analysis. *European Journal of Information Systems, 21*(6), 664-679.

Berchicci, L., & King, A. (2007). Postcards from the edge : A review of the business and environment literature. *Academy of Management Annals, 1*(1), 513-547.

Berns, M., Townend, A., Khayat, Z., Balagopal, B., Reeves, M., Hopkins, M. S., & Krushwitz, N. (2009). The business of sustainability: What it means to managers now. *MIT Sloan Management Review, 51*(1), 20-26.

Berry, M. A., & Rondinelli, D. A. (1998). Proactive corporate environmental management: A new industrial revolution. *The Academy of Management Executive, 2*(2), 38-50.

Bhat, S., & Reddy, S. K. (1998). Symbolic and functional positioning of brands. *Journal of Consumer Marketing, 15*(1), 32-43.

Bhupendra, K. V., & Sangle, S. (2015). What drives successful implementation of pollution prevention and cleaner technology strategy? The role of innovative capability. *Journal of Environmental Management, 155*, 184-192.

Biggs, T., Shah, M., & Srivastava, P. (1995). *Technological capabilities and learning in African enterprises (World Bank Technical Paper No. WTP 288)*. Washington, D.C.: The World Bank Retrieved from http://documents.worldbank.org/curated/en/1995/12/696877/technological-capabilities-learning-african-enterprises.

Bolívar-Ramos, M. T., García-Morales, V. J., & García-Sánchez, E. (2012). Technological distinctive competencies and organizational learning: Effects on organizational innovation to improve firm performance. *Journal of Engineering and Technology Management, 29*(3), 331-357.

Boons, F., & Wagner, M. (2009). Assessing the relationship between economic and ecological performance: Distinguishing system levels and the role of innovation. *Ecological Economics, 68*(7), 1908-1914.

Bowen, F. E., Cousins, P. D., Lamming, R. C., & Farukt, A. C. (2001). The role of supply management capabilities in green supply. *Production and Operations Management, 10*(2), 174-189.

Bradbury-Huang, H., Lichtenstein, B., Carroll, J. S., & Senge, P. M. (2010). Relational space and learning experiments: The heart of sustainability collaborations. In W. A. Pasmore, A. B. Shani & R. W. Woodman (Eds.), *Research in organizational change and development* (pp. 109-148): Emerald Group Publishing Limited.

Brulhart, F., Gherra, S., & Marais, M. (2017). Are environmental strategies profitable for companies? The key role of natural competences from a resource-based view. *Management Decision, 55*(10), 2126-2148.

Brundtland, G. (1987). *Our common future: The World commission on environment and development.* Oxford: Oxford University Press.

Buhr, N., & Gray, R. (2012). Environmental management, measurement, and accounting: Information for decision and control? In P. Bansal & A. J. Hoffman (Eds.), *The oxford handbook of business and the natural environment* (pp. 425-443). New York: Oxford University Press.

Burgos-Jiménez, J. D., Vázquez-Brust, D., Plaza‐Úbeda, J. A., & Dijkshoorn, J. (2013). Environmental protection and financial performance: An empirical analysis in Wales. *International Journal of Operations & Production Management, 33*(8), 981-1018.

Busch, T., & Hoffmann, V. H. (2011). How hot is your bottom line? Linking carbon and financial performance. *Business & Society, 50*(2), 233-265.

Buysse, K., & Verbeke, A. (2003). Proactive environmental strategies: a stakeholder management perspective. *Strategic Management Journal, 24*(5), 453-470.

Calabrese, A., Costa, R., Menichini, T., Rosati, F., & Sanfelice, G. (2013). Turning corporate social responsibility-driven opportunities in competitive advantages: A two-dimensional model. *Knowledge and Process Management, 20*(1), 50-58.

Calantone, R. J., Cavusgil, S. T., & Zhao, Y. (2002). Learning orientation, firm innovation capability, and firm performance. *Industrial Marketing Management, 31*(6), 515-524.

Camisón-Zornoza, C., Lapiedra-Alcamí, R., Segarra-Ciprés, M., & Boronat-Navarro, M. (2004). A meta-analysis of innovation and organizational size. *Organization Studies, 25*(3), 331-361.

Carrillo-Hermosilla, J., del González, P. R., & Könnölä, T. (2009). Barriers to eco-innovation *Eco-Innovation* (pp. 28-50). London: Palgrave Macmillan.

Carrión-Flores, C. E., & Innes, R. (2010). Environmental innovation and environmental performance. *Journal of Environmental Economics and Management, 59*(1), 27-42.

Carter, C. R., & Easton, P. L. (2011). Sustainable supply chain management: Evolution and future directions. *International Journal of Physical Distribution & Logistics Management, 41*(1), 46-62.

Carter, C. R., & Rogers, D. S. (2008). A framework of sustainable supply chain management: Moving toward new theory. *International Journal of Physical Distribution & Logistics Management, 38*(5), 360-387.

Cetindamar, D., Phaal, R., & Probert, D. (2009). Understanding technology management as a dynamic capability: A framework for technology management activities. *Technovation, 29*(4), 237-246.

Chan, R. Y. K. (2005). Does the natural-resource-based view of the firm apply in an emerging economy? A survey of foreign invested enterprises in China. *Journal of Management Studies, 42*(3), 625-672.

Chan, R. Y. K., He, H., Chan, H. K., & Wang, W. Y. C. (2012). Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity. *Industrial Marketing Management, 41*(4), 621-630.

Chang, C.-H. (2011). The influence of corporate environmental ethics on competitive advantage: The mediation role of green innovation. *Journal of Business Ethics, 104*(3), 361-370.

Chen, I. J., & Paulraj, A. (2004). Towards a theory of supply chain management: The constructs and measurements. *Journal of Operations Management, 22*(2), 119-150.

Chen, Y.-S. (2008). The driver of green innovation and green image – green core competence. *Journal of Business Ethics, 81*(3), 531-543.

Chen, Y.-S., Chang, C.-H., & Lin, Y.-H. (2014). The determinants of green radical and incremental innovation performance: Green shared vision, green absorptive capacity, and green organizational ambidexterity. *Sustainability, 6*(11), 7787-7806.

Chen, Y.-S., Chang, C.-H., Yeh, S.-L., & Cheng, H.-I. (2015). Green shared vision and green creativity: The mediation roles of green mindfulness and green self-efficacy. *Quality & Quantity*, *49*(5), 1169-1184.

Chen, Y.-S., Lai, S. B., & Wen, C.-T. (2006). The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics, 67*(4), 331-339.

Chen, Y., Tang, G., Jin, J., Li, J., & Paillé, P. (2015). Linking market orientation and environmental performance: The influence of environmental strategy, employee's environmental involvement, and environmental product quality. *Journal of Business Ethics*, *127*(2), 479-500.

Cheng, C. C., & Shiu, E. C. (2012). Validation of a proposed instrument for measuring eco-innovation: An implementation perspective. *Technovation, 32*(6), 329-344.

Cheng, C. C., Yang, C.-l., & Sheu, C. (2014). The link between eco-innovation and business performance: A Taiwanese industry context. *Journal of Cleaner Production, 64*, 81-90.

Chenhall, R. H. (2003). Management control systems design within its organizational context: Findings from contingency-based research and directions for the future. *Accounting, Organizations and Society, 28*(2-3), 127-168.

Chenhall, R. H. (2005). Integrative strategic performance measurement systems, strategic alignment of manufacturing, learning and strategic outcomes: An exploratory study. *Accounting, Organizations and Society, 30*(5), 395-422.

Chenhall, R. H. (2006). Theorizing contingencies in management control systems research. *Handbook of Management Accounting Research, 1*, 163-205.

Chhotray, S., Sivertsson, O., & Tell, J. (2018). The roles of leadership, vision, and empowerment in born global companies. *Journal of International Entrepreneurship, 16*, 38-57.

Chin, W. W. (1998). Issues and opinion on structural equation modeling. *MIS Quarterly, 22*(1), vii-xvi.

Chin, W. W. (2010). How to write and report PLS analysis. In V. V. Esposito, W. W. Chin, J. Henseler & H. Wang (Eds.), *Handbook of partial least squares: Concepts, methods and applications* (pp. 655-690). Berlin, Heidelberg: Springer.

Chiou, T.-Y., Chan, H. K., Lettice, F., & Chung, S. H. (2011). The influence of greening the suppliers and green innovation on environmental performance and competitive advantage in Taiwan. *Transportation Research Part E: Logistics and Transportation Review, 47*(6), 822-836.

Chow, W. S., & Chen, Y. (2012). Corporate sustainable development: Testing a new scale based on the mainland chinese context. *Journal of Business Ethics, 105*(4), 519-533.

Christmann, P. (2000). Effects of "best practices" of environmental management on cost advantage: The role of complementary assets. *The Academy of Management Journal, 43*(4), 663-680.

Clarkson, P. M., Li, Y., Richardson, G. D., & Vasvari, F. P. (2011). Does it really pay to be green? Determinants and consequences of proactive environmental strategies. *Journal of Accounting and Public Policy, 30*(2), 122-144.

Coff, R. W. (1999). When competitive advantage doesn't lead to performance: The resource-based view and stakeholder bargaining power. *Organization Science, 10*(2), 119-133.

Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Hillsdale, N.J.: Routledge.

Cohen, W. M., & Levinthal, D. A. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly, 35*(1), 128-152.

Combs, J. G., Crook, T. R., & Shook, C. L. (2005). The dimensionality of organizational performance and its implications for strategic management research. In D. J. Ketchen & D. D. Bergh (Eds.), *Research Methodology in Strategy and Management* (Vol. 2, pp. 259-286). Amsterdam: Elsevier.

Coombs, J. E., & Bierly, P. E. (2006). Measuring technological capability and performance. *R&D Management, 36*(4), 421-438.

Cooper, D. R., & Schindler, P. S. (2008). *Business research methods* (10th ed.). New York: McGraw Hill.

Cordeiro, J. J., & Sarkis, J. (1997). Environmental proactivism and firm performance: Evidence from security analyst earnings forecasts. *Business Strategy and the Environment, 6*(2), 101-114.

Cortez, M. A., & Cudia, C. P. (2010). The impact of environmental innovations on financial performance: The case of Japanese automotive and electronics companies. *Journal of International Business Research, 9*(1), 33-47.

Crossan, M. M., & Apaydin, M. (2010). A multi-dimensional framework of organizational innovation: A systematic review of the literature. *Journal of Management Studies, 47*(6), 1154-1191.

Dangelico, R. M., & Pujari, D. (2010). Mainstreaming green product innovation: Why and how companies integrate environmental Sustainability. *Journal of Business Ethics, 95*(3), 471-486.

Darnall, N. (2006). Why firms mandate ISO 14001 certification. *Business & Society Society, 45*(3), 354-381.

Darnall, N., Henriques, I., & Sadorsky, P. (2010). Adopting proactive environmental strategy: The influence of stakeholders and firm size. *Journal of Management Studies, 47*(6), 1072-1094.

Davison, A. C., & Hinkley, D. V. (1997). *Bootstrap methods and their application*. Cambridge: Cambridge University Press.

Day, G. S. (1994). The capabilities of market-driven organizations. *Journal of Marketing, 58*(4), 37-52.

Delmas, M., Etzion, D., & Nairn-Birch, N. (2013). Triangulating environmental performance: What do corporate social responsibility ratings really capture? *The Academy of Management Perspectives, 27*(3), 255-267.

Delmas, M., Hoffmann, V. H., & Kuss, M. (2011). Under the tip of the iceberg: Absorptive capacity, environmental strategy, and competitive advantage. *Business & Society, 50*(1), 116-154.

Delmas, M., Nairn-Birch, N., & Lim, J. (2015). Dynamics of environmental and financial performance: The case of greenhouse gas emissions. *Organization & Environment, 28*(4), 374-393.

Department of Environment Malaysia. (2010). *Environmental Requirements: A Guide for Investors*. Putrajaya, Malaysia: Government of Malaysia.

Department of Statistics Malaysia. (2011). *Economic census: Environmental compliance*. Putrajaya, Malaysia: Government of Malaysia.

Department of Statistics Malaysia. (2012). *Report on the survey of environmental protection expenditure*. Putrajaya, Malaysia: Government of Malaysia.

Dess, G. G., & Picken, J. C. (2000). Changing roles: Leadership in the 21st century. *Organizational Dynamics, 28*(3), 18-34.

Dess, G. G., & Robinson, R. B. (1984). Measuring organizational performance in the absence of objective measures: The case of privately-held firm and conglomerate business unit. *Strategic Management Journal, 5*(3), 265-273.

Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. New York: John Wiley & Sons.

Dowell, G., Hart, S., & Yeung, B. (2000). Do corporate global environmental standards create or destroy market value? *Management Science, 46*(8), 1059-1074.

Dutrénit, G. (2004). Building technological capabilities in latecomer firms: A review essay. *Science Technology & Society, 9*(2), 209-241.

Dyer, J. H., & Singh, H. (1998). The relational view: Cooperative strategy and sources of interorganizational competitive advantage. *The Academy of Management Review, 23*(4), 660-679.

Dyllick, T., & Hockerts, K. (2002). Beyond the business case for corporate sustainability. *Business Strategy and the Environment, 11*(2), 130-141.

Eiadat, Y., Kelly, A., Roche, F., & Eyadat, H. (2008). Green and competitive? An empirical test of the mediating role of environmental innovation strategy. *Journal of World Business, 43*(2), 131-145.

Eisenhardt, K. M., & Martin, J. A. (2000). Dynamic capabilities: What are they? *Strategic Management Journal, 21*(10/11), 1105-1121.

Eltayeb, T. K., Zailani, S., & Ramayah, T. (2011). Green supply chain initiatives among certified companies in Malaysia and environmental sustainability: Investigating the outcomes. *Resources, Conservation and Recycling, 55*(5), 495-506.

Endrikat, J., Guenther, E., & Hoppe, H. (2014). Making sense of conflicting empirical findings: A meta-analytic review of the relationship between corporate environmental and financial performance. *European Management Journal, 32*(5), 735-751.

Epstein, M. J., & Roy, M.-J. (2003). Making the business case for sustainability: Linking social and environmental actions to financial performance. *The Journal of Corporate Citizenship, 9*, 79-96.

Federation of Malaysian Manufacturers. (2015). *FMM Directory of Malaysian Industries 2015* (46th ed.). Kuala Lumpur, Malaysia: Federation of Malaysian Manufacturers.

Fernando, Y., & Wah, W. X. (2017). The impact of eco-innovation drivers on environmental performance: Empirical results from the green technology sector in Malaysia. *Sustainable Production and Consumption, 12*, 27-43.

Fernando, Y., Wah, W. X., & Shaharudin, M. S. (2016). Does a firm's innovation category matter in practising eco-innovation? Evidence from the lens of Malaysia companies practicing green technology. *Journal of Manufacturing Technology Management, 27*(2), 208-233.

Figge, F. (2005). Value-based environmental management. From environmental shareholder value to environmental option value. *Corporate Social Responsibility and Environmental Management, 12*(1), 19-30.

Figge, F., & Hahn, T. (2012). Is green and profitable sustainable? Assessing the trade-off between economic and environmental aspects environmental performance. *International Journal of Production Economics, 140*, 92-102.

Figueiredo, P. N. (2002a). Does technological learning pay off? Inter-firm differences in technological capability-accumulation paths and operational performance improvement. *Research Policy, 31*(1), 73-94.

Figueiredo, P. N. (2002b). Learning processes features and technological capability-accumulation: Explaining inter-firm differences. *Technovation, 22*(11), 685-698.

Florida, R., & Davison, D. (2001). Gaining from green management: Environmental management systems inside and outside the factory. *California Management Review, 43*(3), 64-84.

Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50.

Forsman, H. (2013). Environmental innovations as a source of competitive advantage or vice versa? *Business Strategy and the Environment, 22*(5), 306-320.

Fraj, E., Matute, J., & Melero, I. (2015). Environmental strategies and organizational competitiveness in the hotel industry: The role of learning and innovation as determinants of environmental success. *Tourism Management, 46*, 30-42.

Freeman, R. E. (2008). Managing for stakeholders. In T. Donaldson & P. Werhane (Eds.), (pp. 39-53). Upper Saddle River: Pearson Prentice Hall.

Fuchs, P. H., Mifflin, K. E., Miller, D., & Whitney, J. O. (2000). Strategy integration: Competing in the age of capabilities. *California Management Review, 42*(3), 118-147.

Gabler, C. B., Richey, R. G., & Rapp, A. (2015). Developing an eco-capability through environmental orientation and organizational innovativeness. *Industrial Marketing Management, 45*, 151-161.

Galbreath, J. (2011). Sustainable development in business: A strategic view. In S. O. Idowu & C. Louche (Eds.), *Theory and practice of corporate social responsibility* (pp. 89-106). Berlin, Heidelberg: Springer.

Galvagno, M., & Dalli, D. (2014). Theory of value co-creation: A systematic literature review. *Managing Service Quality, 24*(6), 643-683.

García-Morales, V. J., Llorens-Montes, F. J., & Verdú-Jover, A. J. (2006). Antecedents and consequences of organizational innovation and organizational learning in entrepreneurship. *Industrial Management & Data Systems, 106*(1), 21-42.

Geng, R., Mansouri, S. A., & Aktas, E. (2017). The relationship between green supply chain management and performance: A meta-analysis of empirical evidences in Asian emerging economies. *International Journal of Production Economics, 183*, 245-258.

Gnoni, M. G., De Felice, F., & Petrillo, A. (2011). A multi-criteria approach for strategic evaluation of environmental sustainability in a supply chain. *International Journal of Business Insights & Transformation, 3*(3), 54-61.

Goh, E. A., Zailani, S., & Wahid, N. A. (2006). A study on the impact of environmental management system (EMS) certification towards firms' performance in Malaysia. *Management of Environmental Quality: An International Journal, 17*(1), 73-93.

González-Benito, J., & González-Benito, Ó. (2005). Environmental proactivity and business performance: An empirical analysis. *Omega, 33*(1), 1-15.

Googins, B., & Escudero, M. (2014). Entrepreneurship: Introducing shared innovation into the business model. In C. Weidinger, F. Fischler & R. Schmidpeter (Eds.), *Sustainable entrepreneurship: Business success through sustainability* (pp. 117-126). Berlin,Heidelberg: Springer

Government of Malaysia. (2015). Intended Nationally Determined Contribution of the Government of Malaysia. Retrieved 30 September 2018, from http://www4.unfccc.int/Submissions/INDC/Published%20Documents/Malaysia/1/INDC%20Malaysia%20Final%2027%20November%202015%20Revised%20Final%20UNFCCC.pdf

Graham, S., & Potter, A. (2015). Environmental operations management and its links with proactivity and performance: A study of the UK food industry. *International Journal of Production Economics, 170*, 146-159.

Green, K. W., Toms, L. C., & Clark, J. (2015). Impact of market orientation on environmental sustainability strategy. *Management Research Review, 38*(2), 217-238.

Green, K. W., Zelbst, P. J., Bhadauria, V. S., & Meacham, J. (2012). Do environmental collaboration and monitoring enhance organizational performance ? *Industrial Management & Data Systems, 112*(2), 186-205.

Gudergan, S. P., Ringle, C. M., Wende, S., & Will, A. (2008). Confirmatory tetrad analysis in PLS path modeling. *Journal of Business Research, 61*(12), 1238-1249.

Guenther, E., & Hoppe, H. (2014). Merging limited perspectives. *Journal of Industrial Ecology, 18*(5), 689-707.

Gulati, R., Nohria, N., & Zaheer, A. (2000). Strategic networks. *Strategic Management Journal, 21*(3), 203-215.

Gupta, M. C. (1995). Environmental management and its impact on the operations function. *International Journal of Operations & Production Management, 15*(8), 34-51.

Gupta, S., Czinkota, M., & Melewar, T. C. (2013). Embedding knowledge and value of a brand into sustainability for differentiation. *Journal of World Business, 48*(3), 287-296.

Haanaes, K., Balagopal, B., Kong, M. T., Velken, I., Arthur, D., Hopkins, M. S., & Kruschwitz, N. (2011). New sustainability study: The 'embracers' seize advantage. *MIT Sloan Management Review, 52*(3), 23-35.

Habidin, N. F., Zubir, A. F. M., Fuzi, N. M., Latip, N. A. M., & Azman, M. N. A. (2015). Sustainable manufacturing practices in Malaysian automotive industry: Confirmatory factor analysis. *Journal of Global Entrepreneurship Research, 5*(1), 14.

Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). *Multivariate data analysis* (7th ed.). Upper Saddle River: Prentice Hall.

Hair, J. F., Bush, R. B., & Ortinau, D. J. (2006). *Marketing research: Within a changing information environment*. Boston: McGraw-Hill.

Hair, J. F., Hollingsworth, C. L., Randolph, A. B., & Chong, A. Y. L. (2017). An updated and expanded assessment of PLS-SEM in information systems research. *Industrial Management & Data Systems, 117*(3), 442-458.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2013). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Thousand Oaks: Sage Publications.

Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2017). A primer on partial least squares structural equation modeling (PLS-SEM) (2nd ed.). Thousand Oaks: Sage.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: indeed a silver bullet. *Journal of Marketing Theory and Practice, 19*(2), 139-152.

Hall, J. K., Daneke, G. A., & Lenox, M. J. (2010). Sustainable development and entrepreneurship: Past contributions and future directions. *Journal of Business Venturing, 25*(5), 439-448.

Hamel, G., & Prahalad, C. K. (1994). *Competing for the future*. Boston: Harvard Business School Press.

Hart, S. L. (1995). A natural-resource-based view of the firm. *The Academy of Management Review, 20*(4), 986-1014.

Hart, S. L., & Ahuja, G. (1996). Does it pay to be green? An empirical examination of the relationship between emission reduction and firm performance. *Business Strategy and the Environment, 5*(1), 30-37.

Hart, S. L., & Dowell, G. (2011). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management, 37*(5), 1464-1479.

Hart, S. L., & Milstein, M. B. (2003). Creating sustainable value. *Academy of Management Perspectives, 17*(2), 56-67.

Hassan, M. G., Nordin, N., & Ashari, H. (2015). Sustainable manufacturing practices implementation in Malaysia industries. *Jurnal Teknologi, 77*(4), 49-56.

Hassan, M. N., Afroz, R., Mohamed, A. F., & Awang, M. (2005). Economic instruments for managing industrial waste in Malaysia. *Malaysian Journal of Environmental Management, 6*, 87-106.

Hassel, L., Nilsson, H., & Nyquist, S. (2005). The value relevance of environmental performance. *European Accounting Review, 14*(1), 41-61.

Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: Capability lifecycles. *Strategic Management Journal, 24*(10), 997-1010.

Henderson, R., Reinert, S., Dekhtyar, P., & Migdal, A. (2017). *Climate change in 2017: Implications for business*. Boston: Harvard Business School.

Henri, J.-F., & Journeault, M. (2008). Environmental performance indicators: An empirical study of Canadian manufacturing firms. *Journal of Environmental Management, 87*(1), 165-176.

Henri, J.-F., & Journeault, M. (2010). Eco-control: The influence of management control systems on environmental and economic performance. *Accounting, Organizations and Society, 35*(1), 63-80.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: Updated guidelines. *Industrial Management & Data Systems, 116*(1), 2-20.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. (2009). The use of partial least squares path modeling in international marketing. In R. R. Sinkovics & P. N. Ghauri (Eds.), *New Challenges to International Marketing* (Vol. 20, pp. 277-319): Emerald Group Publishing Limited.

Hew, J.-J., Tan, G. W.-H., Lin, B., & Ooi, K.-B. (2017). Generating travel-related contents through mobile social tourism: Does privacy paradox persist? . *Telematics and Informatics, 34*(7), 914-935.

Hofmann, K. H., Theyel, G., & Wood, C. H. (2012). Identifying firm capabilities as drivers of environmental management and sustainability practices: Evidence from small and medium-sized manufacturers. *Business Strategy and the Environment, 21*(8), 530-545.

Hofstede, G. (1987). The applicability of McGregor's theories in Southeast Asia. *Journal of Management Development, 6*(3), 9-18.

Horbach, J. (2008). Determinants of environmental innovation: New evidence from German panel data sources. *Research Policy, 37*(1), 163-173.

Horváthová, E. (2010). Does environmental performance affect financial performance? A meta-analysis. *Ecological Economics, 70*(1), 52-59.

Hsu, A., & Zomer, A. (2016). Environmental performance index. *Wiley StatsRef: Statistics Reference Online, 1*, 1-5. https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118445112.stat03789.pub2

Hsu, T. T., Tsai, K. H., Hsieh, M. H., & Wang, W. Y. (2014). Strategic orientation and new product performance: The roles of technological capability. *Canadian Journal of Administrative Sciences/Revue Canadienne des Sciences de l'Administration, 31*(1), 44-58.

Inman, R. A., & Green, K. W. (2018). Lean and green combine to impact environmental and operational performance. *International journal of production research*, 1-17.

Iwata, H., & Okada, K. (2011). How does environmental performance affect financial performance? Evidence from Japanese manufacturing firms. *Ecological Economics, 70*(9), 1691-1700.

Jansen, J. J. P., George, G., Van den Bosch, F. A. J., & Volberda, H. W. (2008). Senior team attributes and organizational ambidexterity: The moderating role of transformational leadership. *Journal of Management Studies, 45*(5), 982-1007.

Jogulu, U. D. (2010). Culturally-linked leadership styles. *Leadership & Organization Development Journal, 31*(8), 705-719.

Johannessen, J.-A., & Olsen, B. (2011). What creates innovation in a globalized knowledge economy? A cybernetic point of view. *Kybernetes, 40*(9/10), 1395-1421.

Judge, W. Q., & Douglas, T. J. (1998). Performance implications of incorporating natural environmental issues into the strategic planning process: An empirical assessment. *Journal of Management Studies, 35*(2), 241-262.

Karagozoglu, N., & Lindell, M. (2000). Environmental management: Testing the win-win model. *Journal of Environmental Planning and Management, 43*(6), 817-829.

Kassinis, G., & Vafeas, N. (2006). Stakeholder pressures and environmental performance. *The Academy of Management Journal, 49*(1), 145-159.

Kay, N. M., Leih, S., & Teece, D. J. (2018). The role of emergence in dynamic capabilities: A restatement of the framework and some possibilities for future research. *Industrial and Corporate Change, 27*(4), 1-25.

Kesidou, E., & Demirel, P. (2012). On the drivers of eco-innovations: Empirical evidence from the UK. *Research Policy, 41*(5), 862-870.

Khalid, R., Mazlin, M., Faridah, J., Suhaimi, R., & Spray, C. (2017). Legal framing for achieving 'good ecological status' for Malaysian rivers: Are there lessons to be learned from the EU Water Framework Directive? *Ecosystem Services, 29*, 251-259.

Kim, L. (2001). The dynamics of technological learning in industrialisation. *International Social Science Journal, 53*(168), 297-308.

King, A., & Lenox, M. (2001a). Does it really pay to be green? An empirical study of firm environmental and financial performance. *Journal of Industrial Ecology, 5*(1), 105-116.

King, A., & Lenox, M. (2001b). Lean and green? An empirical examination of the relationship between lean production and environmental performance. *Production and Operations Management, 10*(3), 244-256.

King, A., & Lenox, M. (2002). Exploring the locus of profitable pollution reduction. *Management Science, 48*(2), 289-299.

Kiron, D., Kruschwitz, N., Haanaes, K., Reeves, M., & Goh, E. (2013). The innovation bottom line. *MIT Sloan Management Review, 54*(3).

Kiron, D., Kruschwitz, N., Haanaes, K., & Velken, I. V. S. (2012). Sustainability nears a tipping point. *MIT Sloan Management Review, 53*(2), 69-74.

Kiron, D., Kruschwitz, N., Rubel, H., Reeves, M., & Fuisz-Kehrbach, S.-K. (2014). Sustainability's next frontier. *MIT Sloan Management Review, 55*(2), 1-25.

Klassen, R. D. (2000). Exploring the linkage between investment in manufacturing and environmental technologies. *International Journal of Operations & Production Management, 20*(2), 127-147.

Klassen, R. D., & McLaughlin, C. P. (1996). The impact of environmental management on firm performance. *Management Science, 42*(8), 1199-1214.

Klassen, R. D., & Whybark, D. C. (1999a). Environmental management in operations: The selection of environmental technologies. *Decision Sciences, 30*(3), 601-631.

Klassen, R. D., & Whybark, D. C. (1999b). The impact of environmental technologies on manufacturing performance. *The Academy of Management Journal, 42*(6), 599-615.

Kline, R. B. (2011). *Principles and practice of structural equation modeling* (3rd ed.). New York: Guilford Press.

Kolln, K., & Prakash, A. (2002). EMS-based environmental regimes as club goods: Examining variations in firm-level adoption of ISO 14001 and EMAS in U.K., U.S. and Germany. *Policy Sciences, 35*(1), 43-67.

Konar, S., & Cohen, M. A. (2001). Does the market value environmental performance? *The Review of Economics and Statistics, 83*(2), 281-289.

Kong, T., Feng, T., & Ye, C. (2016). Advanced manufacturing technologies and green innovation: The role of internal environmental collaboration. *Sustainability, 8*(10), 1056.

Koo, C., Chung, N., & Ryoo, S. Y. (2014). How does ecological responsibility affect manufacturing firms' environmental and economic performance? *Total Quality Management & Business Excellence, 25*(9-10), 1171-1189.

Küçükoğlu, M. T., & Pınar, R. İ. (2015). Positive influences of green innovation on company performance. *Procedia-Social and Behavioral Sciences, 195*, 1232-1237.

Kuehr, R. (2007). Environmental technologies–from misleading interpretations to an operational categorisation & definition. *Journal of Cleaner Production, 15*(13-14), 1316-1320.

Laari, S., Töyli, J., Solakivi, T., & Ojala, L. (2016). Firm performance and customer-driven green supply chain management. *Journal of Cleaner Production, 112*, 1960-1970.

Lai, M.-C., & Yap, S.-F. (2004). Technology development in Malaysia and the newly industrializing economies: A comparative analysis. *Asia-Pacific Development Journal, 11*(2), 53-80.

Lanoie, P., Laurent-Lucchetti, J., Johnstone, N., & Ambec, S. (2011). Environmental policy, innovation and performance: New insights on the Porter hypothesis. *Journal of Economics & Management Strategy, 20*(3), 803-842.

Larwood, L., Falbe, C. M., Kriger, M. P., & Miesing, P. (1995). Structure and meaning of organisational vision. *The Academy of Management Journal, 38*(3), 740-769.

Lawson, B., & Samson, D. (2001). Developing innovation capability in organisations: A dynamic capabilities approach. *International Journal of Innovation Management, 5*(3), 377-400.

Lechner, C., Frankenberger, K., & Floyd, S. (2010). Task contingencies in the curvilinear relationships between intergroup networks and initiative performance. *The Academy of Management Journal, 53*(4), 865-889.

Lee, V.-H., Ooi, K.-B., Chong, A. Y.-L., & Lin, B. (2013). A structural analysis of greening the supplier, environmental performance and competitive advantage. *Production Planning & Control: The Management of Operations, 26*(2), 116-130.

Li, S., Ngniatedema, T., & Chen, F. (2017). Understanding the impact of green initiatives and green performance on financial performance in the US. *Business Strategy and the Environment, 26*(6), 776-790.

Li, Y.-H., & Huang, J.-W. (2017). The moderating role of relational bonding in green supply chain practices and performance. *Journal of Purchasing and Supply Management, 23*(4), 290-299.

Liao, Z. (2016). Temporal cognition, environmental innovation, and the competitive advantage of enterprises. *Journal of Cleaner Production, 135*, 1045-1053.

Light, P. C. (2011). *Driving social change: How to solve the world's toughest problems*. Hoboken, NJ: John Wiley & Son.

Lin, H.-F., Su, J.-Q., & Higgins, A. (2016). How dynamic capabilities affect adoption of management innovations. *Journal of Business Research, 69*(2), 862-876.

Lin, R.-J., Tan, K.-H., & Geng, Y. (2013). Market demand, green product innovation, and firm performance: Evidence from Vietnam motorcycle industry. *Journal of Cleaner Production, 40*, 101-107.

Long, X., Chen, Y., Du, J., Oh, K., & Han, I. (2017). Environmental innovation and its impact on economic and environmental performance: Evidence from Korean-owned firms in China. *Energy Policy, 107*, 131-137.

López-Gamero, M. D., Molina-Azorín, J. F., & Claver-Cortés, E. (2009). The whole relationship between environmental variables and firm performance: Competitive advantage and firm resources as mediator variables. *Journal of Environmental Management, 90*(10), 3110-3121.

Lubin, D. A., & Esty, D. C. (2010). The sustainability imperative. *Harvard Business Review, 88*(5), 42-50.

Lucas, M. T. (2010). Understanding environmental management practices: Integrating views from strategic management and ecological economics. *Business Strategy and the Environment, 19*(8), 543-556.

Ma, H. (2000). Competitive advantage and firm performance. *Competitiveness Review: An International Business Journal, 10*(2), 15-32.

Malaysia Economic Planning Unit. (2013). *Economic Transformation Programme Annual Report 2012*. Putrajaya, Malaysia: Government of Malaysia.

Marcus, A. A., & Anderson, M. H. (2006). A general dynamic capability: Does it propagate business and social competencies in the retail food industry? *Journal of Management Studies, 43*(1), 19-46.

Margolis, J. D., & Walsh, J. P. (2003). Misery loves companies: Rethinking social initiatives by business. *Administrative Science Quaterly, 48*(2), 268-305.

McCarthy, N., Rouse, W. B., & Serban, N. (2015). Disentangling competitive advantage and superior performance and their roles in enterprise transformation. *Journal of Enterprise Transformation, 5*(2), 113-140.

McCelland, S. (1994). Training needs assessment data-gathering methods: Part 4, on-site observations. *Journal of European Industrial Training, 18*(5), 4-7.

McCloskey, J., & Maddock, S. (1994). Environmental management: its role in corporate strategy. *Management Decision, 32*(1), 27-32.

McEvily, B., & Marcus, A. A. (2005). Embedded ties and the acquisition of competitive capabilities. *Strategic Management Journal, 26*(11), 1033-1055.

Melnyk, S. A., Sroufe, R. P., & Calantone, R. (2003). Assessing the impact of environmental management systems on corporate and environmental performance. *Journal of Operations Management, 21*(3), 329-351.

Menguc, B., & Ozanne, L. K. (2005). Challenges of the "green imperative": A natural resource-based approach to the environmental orientation–business performance relationship. *Journal of Business Research, 58*(4), 430-438.

Menon, A., & Menon, A. (1997). Enviropreneurial marketing strategy: The emergence of corporate environmentalism as market strategy. *The Journal of Marketing, 61*(1), 51-67.

Merchant, K. A., & Otley, D. T. (2006). A review of the literature on control and accountability. In C. Chapman, A. Hopwood & M. Shield (Eds.), *Handbooks of Management Accounting Research* (Vol. 2, pp. 785-802): Elsevier Press.

Miller, D., & Whitney, J. (1999). Beyond strategy: Configuration as a pillar of competitive advantage. *Business Horizons, 42*(3), 5-17.

Ministry of Finance Malaysia. (2017). *Malaysia Economic Report 2017/2018*. Putrajaya, Malaysia: Government of Malaysia.

Molina-Azorín, J. F., Tarí, J. J., Claver-Cortés, E., & López-Gamero, M. D. (2009). Quality management, environmental management and firm performance: A review of empirical studies and issues of integration. *International Journal of Management Reviews, 11*(2), 197-222.

Moreira, J., & Silva, M. J. A. M. (2014). Cooperation between the consumer and firms as a determinant of marketing innovation: Empirical study of Portuguese firms. *Contemporary Management Research, 10*(3), 215-232.

Muhammad, I. Q., Amran, M. R., Ahmad, J., & Tan, O. K. (2015). Sustainability: A new manufacturing paradigm. *Journal Teknologi, 77*(22), 47-53.

Murphy, P. R., Poist, R. F., & Braunschweig, C. D. (1995). Role and relevance of logistics to corporate environmentalism: An empirical assessment. *International Journal of Physical Distribution & Logistics Management, 25*(2), 5-19.

Mustafa, M., & Mohamed, N. S. (2015). The development of environmental crime and saction in Malaysia. *European Scientic Journal, 11*(25), 29-39.

Nally, D. (2011). Prospects in emerging markets drive CEO confidence. *PWC 14th Annual Global CEO Survey*, 1-34.

Nawrocka, D., & Parker, T. (2009). Finding the connection: Environmental management systems and environmental performance. *Journal of Cleaner Production, 17*(6), 601-607.

Newbert, S. L. (2007). Empirical research on the resource-based view of the firm: An assessment and suggestions for future research. *Strategic Management Journal, 28*(2), 121-146.

Ng, S. C., Nor Aziati, A. H., & Sha'ri , M. Y. (2017). Factors affecting implementation of green manufacturing for Malaysian. *The Social Sciences, 12*(7), 1293-1298.

Nidumolu, R., Prahalad, C. K., & Rangaswami, M. R. (2009). Why sustainability is now the key driver of innovation. *Harvard Business Review, 87*(9), 57-64.

Nitzl, C., Roldan, J. L., & Cepeda, G. (2016). Mediation analysis in partial least squares path modeling: Helping researchers discuss more sophisticated models. *Industrial Management & Data Systems, 116*(9), 1849-1864.

Nunnally, J. C., & Bernstein, I. H. (1994). *Psychometric theory* (3 ed.). New York: McGraw-Hill.

O'Connell, D., Hickerson, K., & Pillutla, A. (2011). Organizational visioning: An integrative review. *Group & Organization Management, 36*(1), 103-125.

OECD. (1995). *Promoting cleaner production in developing countries: The role of development co-operation*. Paris, France: OECD Publishing.

OECD. (2005). *Oslo manual: Guidelines for collecting and interpreting innovation data*. Paris: OECD Publishing Retrieved from http://www.forskningsdatabasen.dk/en/catalog/2389305016.

Ongondo, F. O., Williams, I. D., & Cherrett, T. J. (2011). How are WEEE doing? A global review of the management of electrical and electronic wastes. *Waste Management, 31*(4), 714-730.

Orlitzky, M., Schmidt, F. L., & Rynes, S. L. (2003). Corporate social and financial performance : A Meta-analysis. *Organization Studies, 24*(3), 403-441.

Orsato, R. J. (2006). Competitive environmental strategies: When does it pay to be green? *California Management Review, 48*(2), 127-143.

Palmer, K., Oates, W. E., & Portney, P. R. (1995). Tightening environmental standards: The benefit-cost or the no-cost paradigm? *The Journal of Economic Perspectives, 9*(4), 119-132.

Parmigiani, A., & Rivera-Santos, M. (2011). Clearing a path through the forest: A meta-review of interorganizational relationships. *Journal of Management, 37*(4), 1108-1136.

Pearce, C. L., & Ensley, M. D. (2004). A reciprocal and longitudinal investigation of the innovation process: The central role of shared vision in product and process innovation teams (PPITs). *Journal of Organizational Behavior, 25*(2), 259-278.

Peattie, K. (2001). Golden goose or wild goose? The hunt for the green consumer. *Business Strategy and the Environment, 10*(4), 187-199.

Percival, D., Shelton, R., & Andrews, H. (2013). Unleashing the power of innovation. from PWC https://docplayer.net/1639662-Unleashing-the-power-of-innovation.html.

Peteraf, M. A. (1993). The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal, 14*(3), 179-191.

Peteraf, M. A., & Barney, J. B. (2003). Unraveling the resource-based tangle. *Managerial & Decison Economics, 24*(4), 309-323.

Pfitzer, M., Bockstette, V., & Stamp, M. (2013). Innovating for shared value. *Harvard Business Review, 91*(9), 100-107.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology, 88*(5), 879-903.

Podsakoff, P. M., & Organ, D. W. (1986). Self-reports in organisational research: problems and prospects. *Journal of Management, 12*(4), 531-544.

Porter, M. E. (1996). What is strategy? *Harvard Business Review, 74*(6), 61-78.

Porter, M. E., Hills, G., Pfitzer, M., Patscheke, S., & Hawkins, E. (2012). *Measuring shared value: How to unlock value by linking social and business results*. Retrieved from http://scholar.google.com/scholar?hl=en&btnG=Search&q=intitle:Measuring+Shared+Value:+How+to+Unlock+Value+by+Linking+Social+and+Business+Results#0.

Porter, M. E., & Kramer, M. R. (2006). Strategy and society: The link between competitive advantage and corporate social responsibility. *Harvard Business Review, 84*(12), 78-92.

Porter, M. E., & Kramer, M. R. (2011). Creating shared value. *Harvard Business Review, 89*(12), 62-77.

Porter, M. E., & Van der Linde, C. (1995). Green and competitive: Ending the stalemate. *Harvard Business Review, 73*(5), 120-134.

Powell, W. W., Koput, K. W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly, 41*(1), 116-145.

Prahalad, C. K., & Ramaswamy, V. (2000). Co-opting customer competence. *Harvard Business Review, 78*(1), 79-90.

Prahalad, C. K., & Ramaswamy, V. (2003). The new frontier of experience innovation. *MIT Sloan Management Review, 44*(4), 12-18.

Prahalad, C. K., & Ramaswamy, V. (2004). Co-creating unique value with customers. *Strategy & Leadership, 32*(3), 4-9.

Preston, M. (2014). Business success beyond the short term: CEO perspectives on sustainability. *PWC 17th annual global CEO survey*, 1-16.

Pujari, D., Peattie, K., & Wright, G. (2004). Organizational antecedents of environmental responsiveness in industrial new product development. *Industrial Marketing Management, 33*(5), 381-391.

Punch, K. F. (2003). *Survey research: The basics*. London: Sage Publications.

Randolph, W. A. (1995). Navigating the journey to empowerment. *Organizational Dynamics, 24*(4), 19-32.

Rao, P. (2002). Greening the supply chain: A new initiative in South East Asia. *International Journal of Operations & Production Management, 22*(6), 632-655.

Rao, P., & Holt, D. (2005). Do green supply chains lead to competitiveness and economic performance? *International Journal of Operations & Production Management, 25*(9), 898-916.

Rassier, D. G., & Earnhart, D. (2010). Does the porter hypothesis explain expected future financial performance? The effect of clean water regulation on chemical manufacturing firms. *Environmental and Resource Economics, 45*(3), 353-377.

Reinhardt, F. L. (1998). Environmental product differentiation: Implications for corporate strategy. *California Management Review, 40*(4), 43-73.

Rennings, K., Ziegler, A., Ankele, K., & Hoffmann, E. (2006). The influence of different characteristics of the EU environmental management and auditing scheme on technical environmental innovations and economic performance. *Ecological Economics, 57*(1), 45-59.

Ries, A., & Trout, J. (2001). *Positioning: the battle for your mind*. New York: McGraw-Hill.

Ringle, C. M., Wende, S., & Becker, J. M. (2015). *SmartPLS 3. Boenningstedt: SmartPLS* Retrieved from http://www.smartpls.com.

Rohani, M., Marini, N., M., & Ramayah, T. (2017). Supply chain integration: level of existence in green supply chain management practices among Malaysian ISO 14001 manufacturing firms. *International Journal of Supply Chain Management, 6*(2), 243-249.

Roldán, J. L., & Sánchez-Franco, M. J. (2012). Variance-based structural equation modeling: Guidelines for using partial least squares in information systems research. In M. Mora, O. Gelman, A. L. Steenkamp & M. Raisinghani (Eds.), *Research methodologies, innovations and philosophies in software systems engineering and information systems* (pp. 193-221). Hershey,IGI Global.

Rondinelli, D. A., & Berry, M. A. (2000). Environmental citizenship in multinational corporations: social responsibility and sustainable development. *European Management Journal, 18*(1), 70-84.

Rondinelli, D. A., & Vastag, G. (2000). Panacea, common sense, or just a label?: The value of ISO 14001 environmental management systems. *European Management Journal, 18*(5), 499-510.

Rothenberg, S., Pil, F. K., & Maxwell, J. (2001). Lean, green, and the quest for superior environmental performance. *Production and Operations Management, 10*(3), 228-243.

Rumelt, R. P. (2005). Theory, strategy, and entrepreneurship. In S. A. Alvarez, R. Agarwal & O. Sorenson (Eds.), *Handbook of entrepreneurship research* (pp. 11-32). Boston, MA: Springer.

Russo, M., & Fouts, P. A. (1997). A resource-based perspective on corporate environmental performance and profitability. *Academy of Management Journal, 40*(3), 534-559.

Russo, M., & Harrison, N. S. (2005). Organizational design and environmental performance: Clues from the electronics industry. *Academy of Management Journal, 48*(4), 582-593.

Saeidi, S. P., Sofian, S., Saeidi, P., Saeidi, S. P., & Saaeidi, S. A. (2015). How does corporate social responsibility contribute to firm financial performance? The mediating role of competitive advantage, reputation, and customer satisfaction. *Journal of Business Research, 68*(2), 341-350.

Salzmann, O., Ionescu-Somers, A., & Steger, U. (2005). The business case for corporate sustainability : Literature review and research options. *European Management Journal, 23*(1), 27-36.

Sanders, E. B. N., & Stappers, P. J. (2008). Co-creation and the new landscapes of design. *CoDesign, 4*(1), 5-18.

Sarkis, J., & Cordeiro, J. J. (2001). An empirical evaluation of environmental efficiencies and firm performance: Pollution prevention versus end-of-pipe practice. *European Journal of Operational Research, 135*(1), 102-113.

Sarstedt, M., Ringle, C. M., Smith, D., Reams, R., & Hair, J. F. (2014). Partial least squares structural equation modeling (PLS-SEM): A useful tool for family business researchers. *Journal of Family Business Strategy, 5*(1), 105-115.

Schaltegger, S., & Figge, F. (2000). Environmental shareholder value : Economic success with corporate environmental management. *Eco-Management and Auditing, 7*(1), 29-42.

Schaltegger, S., & Synnestvedt, T. (2002). The link between 'green' and economic success: Environmental management as the crucial trigger between environmental and economic performance. *Journal of Environmental Management, 65*, 339-346.

Schiederig, T., Tietze, F., & Herstatt, C. (2012). Green innovation in technology and innovation management - an exploratory literature review. *R&D Management, 42*(2), 180-192.

Schreck, P. (2011). Reviewing the business case for corporate social responsibility: New evidence and Analysis. *Journal of Business Ethics, 103*(2), 167-188.

Schrettle, S., Hinz, A., Scherrer-Rathje, M., & Friedli, T. (2014). Turning sustainability into action: Explaining firms' sustainability efforts and their impact on firm performance. *International Journal of Production Economics, 147*, 73-84.

Seibert, S. E., Wang, G., & Courtright, S. H. (2011). Antecedents and consequences of psychological and team empowerment in organizations: A meta-analytic review. *Journal of Applied Psychology, 96*(5), 981.

Sekaran, U. (2000). *Research methods for business: A skill-building approach* (4 ed.). India: John Wiley & Sons.

Sekaran, U., & Bougie, R. (2010). *Research methods for business: A skill building approach* (5 ed.): Willey.

Sezen, B., & Çankaya, S. Y. (2013). Effects of green manufacturing and eco-innovation on sustainability performance. *Procedia - Social and Behavioral Sciences, 99*, 154-163.

Sharma, S., & Vredenburg, H. (1998). Proactive corporate environmental strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal, 19*(8), 729-753.

Shrivastava, P. (1995). Environmental technologies and competitive advantage. *Strategic Management Journal, 16*(S1), 183-200.

Si, S., & Wei, F. (2012). Transformational and transactional leaderships, empowerment climate, and innovation performance: A multilevel analysis in the Chinese context. *European Journal of Work and Organizational Psychology, 21*(2), 299-320.

Sigalas, C., & Economou, V. P. (2013). Revisiting the concept of competitive advantage: Problems and fallacies arising from its conceptualization. *Journal of Strategy and Management, 6*(1), 61-80.

Sigalas, C., Economou, V. P., & Georgopoulos, N. B. (2013). Developing a measure of competitive advantage. *Journal of Strategy and Management, 6*(4), 320-342.

Simons, R. (1994). How new top managers use control systems as levers of strategic renewal. *Strategic Management Journal, 15*(3), 169-189.

Simons, R. (2000). *Performance measurement and control systems for implementing strategy*. Upper Saddle River, NJ: Prentice Hall.

Simpson, R. D., & Bradford III, R. L. (1996). Taxing variable cost: environmental regulation as industrial policy. *Journal of Environmental Economics and Management, 30*(3), 282-300.

Singh, S., Darwish, T. K., & Potočnik, K. (2016). Measuring organizational performance: A case for subjective measures. *British Journal of Management, 27*(1), 214-224.

Sinkula, J. M., Baker, W. E., & Noordewier, T. (1997). A framework for market-based organizational learning: Linking values, knowledge, and behavior. *Journal of the Academy of Marketing Science, 25*(4), 305-318.

Slater, S. F., & Narver, J. C. (1995). Market orientation and the learning organization. *Journal of Marketing, 59*(3), 63-74.

Sloan, P. (2009). Redefining stakeholder engagement: from control to collaboration. *The Journal of Corporate Citizenship, 36*, 25-40.

SME Corporation Malaysia. SME definition. Retrieved 19 May 2018, from http://www.smecorp.gov.my/index.php/en/policies/2015-12-21-09-09-49/sme-definition

Spreitzer, G. M. (2008). Taking stock: A review of more than twenty years of research on empowerment at work. In J. Barling & C. L. Cooper (Eds.), *Handbook of organizational behavior* (pp. 54-72). Thousand Oaks: Sage.

Sullivan, G. M., & Feinn, R. (2012). Using effect size—or why the P value is not enough. *Journal of Graduate Medical Education, 4*(3), 279-282.

Svendsen, A. C., & Laberge, M. (2005). Convening stakeholder networks. *Journal of Corporate Citizenship, 19*, 91-104.

Taoketao, E., Feng, T., Song, Y., & Nie, Y. (2018). Does sustainability marketing strategy achieve payback profits? A signaling theory perspective. *Corporate Social Responsibility and Environmental Management*. https://onlinelibrary.wiley.com/doi/abs/10.1002/csr.1518

Teece, D. J. (1986). Profiting from technological innovation: Implications for integration, collaboration, licensing and public policy. *Research Policy, 15*(6), 285-305.

Teece, D. J. (2007). Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance. *Strategic Management Journal, 28*(13), 1319-1350.

Teece, D. J., Pisano, G., & Shuen, A. (1997). Dynamic capabilities and strategic management. *Strategic Management Journal*, *18*(7), 509-533.

Teece, D. J., Rumelt, R., Dosi, G., & Winter, S. (1994). Understanding corporate coherence: Theory and evidence. *Journal of Economic Behavior and Organization, 23*(1), 1-30.

Telle, K. (2006). It pays to be green - a premature conclusion? *Environmental and Resource Economics, 35*, 195-220.

Theyel, G. (2000). Management practices for environmental innovation and performance. *International Journal of Operations & Production Management, 20*(2), 249-266.

Tsai, K.-H. (2004). The impact of technological capability on firm performance in Taiwan's electronics industry. *The Journal of High Technology Management Research, 15*(2), 183-195.

Tsai, W., & Ghoshal, S. (1998). Social capital and value creation: The role of intrafirm networks. *Academy of Management Journal, 41*(4), 464-476.

UNCED. (1992). Agenda 21. Geneva, Switzerland: United Nations Conference on Environment and Development. Retrieved 2 May 2018, from https://sustainabledevelopment.un.org/content/documents/Agenda21.pdf

Vachon, S., & Klassen, R. D. (2006). Extending green practices across the supply chain: The impact of upstream and downstream integration. *International Journal of Operations & Production Management, 26*(7), 795-821.

Vachon, S., & Klassen, R. D. (2008). Environmental management and manufacturing performance: The role of collaboration in the supply chain. *International Journal of Production Economics, 111*(2), 299-315.

Venkatraman, N., & Ramanujam, V. (1987). Measurement of business economic performance: An examination of method convergence. *Journal of Management, 13*(1), 109-122.

Wagner, M. (2007). Integration of environmental management with other managerial functions of the firm: Empirical effects on drivers of economic performance. *Long Range Planning, 40*(6), 611-628.

Wagner, M. (2009). Innovation and competitive advantages from the integration of strategic aspects with social and environmental management in European firms. *Business Strategy and the Environment, 18*(5), 291-306.

Wagner, M., & Schaltegger, S. (2004). The effect of corporate environmental strategy choice and environmental performance on competitiveness and economic performance: An empirical study of EU manufacturing. *European Management Journal, 22*(5), 557-572.

Wagner, M., Van Phu, N., Azomahou, T., & Wehrmeyer, W. (2002). The relationship between the environmental and economic performance of firms: An empirical analysis of the European paper industry. *Corporate Social Responsibility and Environmental Management, 9*(3), 133-146.

Wall, T. D., Michie, J., Patterson, M., Wood, S. J., Sheehan, M., Clegg, C. W., & West, M. (2004). On the validity of subjective measures of company performance. *Personnel psychology, 57*(1), 95-118.

Walley, N., & Whitehead, B. (1994). It's not easy being green. *Harvard Business Review, 72*(3), 46-51.

Walls, J. L., Phan, P. H., & Berrone, P. (2011). Measuring environmental strategy: Construct development, reliability, and validity. *Business & Society, 50*(1), 71-115.

Wassmer, U., Paquin, R., & Sharma, S. (2014). The engagement of firms in environmental collaborations: Existing contributions and future directions. *Business & Society, 53*(6), 754-786.

Widener, S. K. (2007). An empirical analysis of the levers of control framework. *Accounting, Organizations and Society, 32*(7-8), 757-788.

Wijethilake, C. (2017). Proactive sustainability strategy and corporate sustainability performance: The mediating effect of sustainability control systems. *Journal of Environmental Management, 196*, 569-582.

Wijethilake, C., Munir, R., & Appuhami, R. (2016). Environmental innovation strategy and organizational performance: Enabling and controlling uses of management control systems. *Journal of Business Ethics, 1*, 1-22.

Wilden, R., & Gudergan, S. P. (2015). The impact of dynamic capabilities on operational marketing and technological capabilities: Investigating the role of environmental turbulence. *Journal of the Academy of Marketing Science, 43*(2), 181-199.

Winter, S. G. (1995). Four Rs of profitability: Rents, resources, routines, and replication. In C. A. Montgomery (Ed.), (pp. 147-178). Boston: Kluwer Academic Publishers.

Witell, L., Kristensson, P., Gustafsson, A., & Löfgren, M. (2011). Idea generation: customer co‐creation versus traditional market research techniques. *Journal of Service Management, 22*(2), 140-159.

Yang, M. G., Hong, P., & Modi, S. B. (2011). Impact of lean manufacturing and environmental management on business performance: An empirical study of manufacturing firms. *International Journal of Production Economics, 129*(2), 251-261.

Zaccaro, S. J., & Banks, D. J. (2001). Leadership, vision, and organizational effectiveness. In S. J. Zaccaro & R. J. Klimoski (Eds.), *The nature of organizational leadership* (pp. 181-218). San Francisco: Jossey-Bass.

Zhao, X., Lynch Jr, John G., & Chen, Q. (2010). Reconsidering Baron and Kenny: Myths and truths about mediation analysis. *Journal of Consumer Research, 37*(2), 197-206.

Zhou, K. Z., & Wu, F. (2010). Technological capability, strategic flexibility, and product innovation. *Strategic Management Journal, 31*(5), 547-561.

Zhu, Q., & Sarkis, J. (2004). Relationships between operational practices and performance among early adopters of green supply chain management practices in Chinese manufacturing enterprises. *Journal of Operations Management, 22*(3), 265-289.

Zhu, Q., Sarkis, J., & Lai, K.-h. (2008). Green supply chain management implications for "closing the loop". *Transportation Research Part E: Logistics and Transportation Review, 44*(1), 1-18.