GREEN PRACTICES AND CORPORATE SUSTAINABILITY PERFORMANCE OF CHEMICAL MANUFACTURING ORGANISATIONS IN MALAYSIA: THE MODERATING ROLE OF ISLAMIC WORK ETHICS, ORGANISATION SIZE, AND ORGANISATION AGE

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DECLARATION

I hereby declare that the thesis is my original work except for quotations and citations which have been duly acknowledged. I also declare that it has not been previously, and is not concurrently submitted for any other degree at Universiti Tenaga Nasional or at any other institutions. This thesis may be made available within the university library and may be photocopied and loaned to other libraries for the purpose of consultation.

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MARYAM JAMILAH ASHA'ARI

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ABSTRACT

Sustainability is a crucial issue for many sectors in Malaysia, including the manufacturing sector. Many businesses, especially the chemical manufacturing industry, aim to achieve a sustainable business through the implementation of green practices. Green practices provide guidelines for the employees to simultaneously sustain the organisation in a sustainable manner and carry out the required manufacturing activities. Focusing on that, this study aimed to examine the effects of green practices on corporate sustainability performance through Islamic work ethics, organisation size, and organisation age as moderators. Using the stratified random sampling technique, 344 chemical manufacturing organisations in Malaysia were invited to participate in a survey. Data from 130 completed questionnaire sets were subjected to partial least square (PLS) analysis. The results demonstrated significant effects of green practices on corporate sustainability performance via Islamic work ethics and organisation size. However, organisation age was found to exhibit no moderation effect on the relationship between green practices and corporate sustainability performance. Conclusively, as part of the organisational strategies, the sustainability of chemical manufacturing organisations must involve successful implementation of green practices, Islamic work ethics, and organisation size. This study offered several theoretical and practical contributions on green practices, Islamic work ethics, organisation size, and organisation age, and corporate sustainability performance. Theoretically, this study extended literature on the resource-based view theory, natural-resource-based view theory, and stakeholder theory. Al-Quran and hadith were used to support this study to link the relationships of the variables under study, particularly in the context of chemical manufacturing organisations in Malaysia. Practically, this study was expected to assist chemical manufacturers in selecting the appropriate green practices to achieve corporate sustainability performance and good implementation of Islamic work ethics. Additionally, it is recommended for future research to explore other types of industries in the manufacturing sector given the focus of this study on the chemical manufacturing industry only.

Keywords: Green practices; Corporate sustainability performance; Islamic work ethics; Organisation size; Organisation age; Chemical manufacturing organisations; PLS.

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LIST OF ABBREVIATIONS

4Rs	Recovery, Reduction, Reuse, and Recycle
AVE	Average Variance Extracted
CB-SEM	Covariance-Based Sem
CR	Composite Reliability
CSP	Corporate Sustainability Performance
DOE	Department of Environment
DOSH	Department of Occupational Safety and Health
DOSM	Department of Statistics Malaysia
EL	Eco-Labelling
ENP	Environment Sustainability Performance
EP	Economic Sustainability Performance
FMM	Federation of Malaysia Manufacturers
GDP	Gross Domestic Product
GHG	Greenhouse Gases
GP	Green Practices
GTM	GreenTech Malaysia
HTMT	Heterotrait-Monotrait
IEA	International Energy Agency
ISO	International Organisation for Standardisation
IWE	Islamic Work Ethics
KeTTHA	Kementerian Tenaga, Teknologi Hijau dan Air
KRIVET	Korea Research Institute for Vocational Education and Training
LEO	Low Energy Office
MGBC	Malaysian Green Building Confederation
MPC	Malaysia Productivity Corporation
NRE	Ministry of Natural Resources and Environment
OA	Organisation Age
OECD	Organisation for Economic Co-operation and Development
OS	Organisation Size
PCA	Principle Component Analysis
PEMANDU	Performance Management and Management Unit
PLS	Partial Least Square
PLS-SEM	Partial Least Square-Structural Equation Modelling
RO	Research Objective
S.A.W	Sallallahu Alayhi Wasallam
S.W.T	Subhaanahu Wa Ta'aala
SD	Sustainable Design
SDGs	Sustainable Development Goals
SEM	Structural Equation Modeling
SL	Sustainable Lifestyles

SM	Sustainable Marketing
Smart-PLS	Smart Partial Least Square
SOP	Social Sustainability Performance
SP	Sustainable Procurement
UCIL	Union Carbide India Limited
UN	United Nations
UNEP	United Nations Environment Program
UNFCC	United Nations Framework Convention on Climate Change
VIF	Variance Inflation Factor
WCED	World Commission on Environment and Development
WHO	World Health Organisation
WM	Waste Management

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CHAPTER 1

INTRODUCTION

1.1 Introduction

The economic, social, and ecological hazards, which are attributed to climate change, extreme weather changes, and energy, food, and water uncertainties, have caused development problems for many developing countries (Hynes & Wang, 2012). Similar to other developing countries, Malaysia is in a dilemma between focusing on economic growth and preserving the environment (Eleventh Malaysia Plan, 2015; Puan et al., 2016). The effects of climate change due to mankind create serious risks for the economies and the quality of life of the communities (Hart et al., 2010). For instance, excessive carbon in the atmosphere contributes to a steady rise in the global temperature (Ibrahim, 2010). The unbalance of unsustainable future and consumption rate of natural resources are harmful to the environment (Fayers, 1999; Mittal, 2017; Mohammad Ghozali et al., 2016; Salwa Hanim et al., 2017). Global warming, which causes extreme weather, such as high temperature and heavy rainfalls, as well as catastrophic disasters like severe droughts, flash floods, and landslides, have caused deaths and highlighted the need for emergency assistance or humanitarian aid—and Malaysia is of no exception (Centre of Research on the Epidemiology of Disasters, 2019).

Sustainability has turned into a critical issue over the recent years, with the organisational need to achieve competitive advantage (Kim & Lee, 2018; Svensson et al., 2018). According to Bodhanwala and Bodhanwala (2018), organisations with strategies that focus on the sustainability aspects have the ability to attain competitive advantage and create long-term value for the organisation. Organisations that do not make an effort to adopt a business sustainability strategy may be driven out of the market (Svensson et al., 2018). Furthermore, sustainable businesses can be seen as practices that would make positive contributions to long-term sustainability as well as generate both new opportunities and responsibilities for businesses in the 21st century (DesJardins, 2007). Realising the importance of going green, organisations have to develop a powerful green sense of responsibility and social

conscience (Sheopuri & Sheopuri, 2015). From the business perspectives, the decision-making process involves the need to carefully analyse the environmental impact on society (Azlan & Roszaini, 2011). Many businesses appear to respond to the call of societies and governments throughout the world to sustain their businesses in terms of economic, environmental, and social sustainability performance (Lubin & Esty, 2010; Mani et al., 2016; Nooraslinda et al., 2016).

The global concern over carbon emission through government legislation has enforced various manufacturing organisations to regulate and reduce their carbon emission throughout the supply chain (Kaur & Singh, 2018). The manufacturing sector in Malaysia faces sustainability issues in terms of the economy, environment, and social (Mohammad Ghozali et al., 2016). The operations of the manufacturing sector create toxic waste that endangers the welfare and health of living species and harm their natural environment if they are not properly considered (Maliza Delima, 2012). The dynamic state that arises when an organisation develops continuous shareholders' and stakeholders' values of maintaining the well-being of the economy, environment, and society as a long-term goal describes the term "corporate sustainability" (Elkafi et al., 2012; Mohammad Ghozali et al., 2016). Corporate sustainability performance has received great attention from many industries, especially the chemical manufacturing industry, as different chemicals contribute different environmental effects (Wee & Choo, 2018).

According to the Federation of Malaysia Manufacturers (FMM), the chemical manufacturing industry is one of the most important industries in Malaysia given its substantial contribution to the Malaysian economy (Federation of Malaysia Manufacturers [FMM], 2017). However, effective incorporation of sustainability into the management, research and development, supply chain, and operations remains a challenge for this industry (Hutt et al., 2016; Lozano et al., 2016), which demands efficient and environmentally friendly chemical processes and products (Ganasen & Velaichamy, 2016). Chemical waste continues to be a major policy driver for many countries, including Malaysia (Hutt et al., 2016). The sustainability of the industry may be affected if proper strategies to handle this issue are not implemented.

Under the Eleventh Malaysia Plan (2015), the successful implementation of green practices can enhance the economic, environmental, and social sustainability performance. Green practices are some of the strategies that mainly aim to improve the Malaysian economy by 2020 through resource efficiency and lower carbon emission in a socially inclusive manner (Eleventh Malaysia Plan, 2015). Accordingly, green practices refer to the organisational practices to save the environment by minimising or eliminating the environmental effects of their operations (Linas et al., 2014). Furthermore, prior studies empirically proved the importance of successful implementation of green practices to achieve corporate sustainability performance.

Apart from the importance of green practices to achieve corporate sustainability performance, there are other important factors that may also contribute to corporate sustainability performance. For instance, the inculcation of ethics and values in the organisational culture to achieve sustainable business performance given its importance as the global economic crisis remedy (Abdus Sattar, Kashif, et al., 2012; Nooraslinda et al., 2016). Organisations that seek to embrace sustainability must follow specific policies and standards, from ethical performance to environmental protection (Wales, 2013). The solution for the global economic crisis lies in the inculcation of work ethics in the organisational culture to achieve sustainable business performance (Abdus Sattar et al., 2011).

In addition, the ethical standards that have caught the public and media attention have raised certain questions on the practicality of ethical standards in the business context (Salih et al., 2012). Stakeholder pressure is one of the reasons that drive businesses to focus on the sustainability issues (Hansen et al., 2015), which has led to the development of the concept of business ethics and sustainability (Nooraslinda et al., 2016). According to Salih et al. (2012), being unethical results in negative organisational outcomes whereas being ethical pays off for the organisations. Showing good ethics contributes to the organisation's best financial interest, as business and ethics are related (Berrone et al., 2007). In fact, ethical standards contribute to organisational success, promote the well-being of society as a whole, and create wealth for stakeholders (Barutcugil, 2004; Berrone et al., 2007; Donker et al., 2008; Mead, 1998; Mohd Abdul et al., 2010).

Religion plays an important role in influencing ethical values (Farzana & Jihad, 2013) and assisting employees in handling difficult situations and challenges at the workplace (Bell & Taylor, 2004). With that, the position and impact of religious beliefs and values in shaping sustainability should be considered (Otmane, 2013). In today's challenging world, success measured by short-term profit maximisation is no longer seen as sustainable whereas the integration of Islamic work ethics into the decision-making process and strategy to achieve sustainability is considered necessary (Dina et al., 2019; Nooraslinda et al., 2016). The Islamic work ethics is defined as good characters, which are shaped as successful practising of Al-Quran and practices and sayings of Prophet Muhammad (S.A.W) (Abbas & Abdullah, 2008). In Islam, the Al-Quran and prophetic accounts establish the laws and ethics for environmental practices (Abd, 1997; Mawil, 1992; Muhammad Hafiz & Nabsiah, 2012; Safei El-Deen, 1993).

Being one of the key assets of an organisation (Uzma et al., 2017), Islamic work ethics can lead to sustainability (Aly & Athmar, 2017) at the organisational level. Islam describes humans as caliphs or specifically, of those who are obliged to manage and administer the environment and have the ethical responsibility to address any harm that is committed on environmental entities (Mohd Noor et al., 2012). The protection of the natural environment and social environment is one of the significant goals in Islam for the sake of human survival; simultaneously, its concern is connected with the well-being of the life system on earth (Ichhimuddin, 2015). Djamel (2017) agreed that the Islamic principles inherent in the concept and application of protecting the environment. Islam as a religion emphasises the well-being and coexistence of man and his surroundings by protecting one's health and environment (Ichhimuddin, 2015).

Besides that, organisation size and organisation age are significant attributes to achieve corporate sustainability performance for an organisation. In particular, organisation size refers to the number of employees in an organisation (Dangelico & Pontrandolfo, 2015), while organisation age refers to the number of operating years for an organisation since its establishment (Dangelico & Pontrandolfo, 2015). Organisation size and organisation age potentially foster the corporate sustainability performance, where organisations that operate at a larger scale and longer history are

said to have more resources to launch environmental management activities (Zhang & Yang, 2016). Organisation size and organisation age can influence the development of environmental innovations (larger and more experienced organisations are supposed to have more resources and capabilities to implement these kinds of innovations) (Amores-Salvadó et al., 2015). On a similar note, Benitez-Amado and Walczuch (2012) highlighted that larger organisations can execute more developed environmental processes and demonstrate a better environmental performance due to the extra resources at their command. In view of the above, this study aimed to examine the effects of green practices on the corporate sustainability performance as well as the moderating role of Islamic work ethics, organisation size, and organisation age on the effects of green practices on the corporate sustainability performance.

1.2 Background of Study

Globalisation has led business strategists of various organisations to face two main challenges that simultaneously highlight the need to expand economic opportunities for a growing global population and to address environmental pressures. According to Jamet and Corfee-Morlot (2009), the effects of economic activities on the environment cause imbalance that increases risks in the development and growth of the economy. On a similar note, Organisation for Economic Co-operation and Development [OECD] (2009) reported the absence of sound strategies in dealing with the environmental problems that cause insecurity and hinder investment and innovation that potentially impede the development and growth of the economy. The report also highlighted how natural capital is often mismanaged and undervalued, which costs the economy and well-being of society (OECD, 2009). Thus, it is crucial to intensify efforts to address climate change and biodiversity loss.

As mentioned in the United Nations Framework Convention on Climate Change (UNFCC) in 2009, Malaysia has fully committed to stimulate and develop green growth (Puan et al., 2016). In 2013, Malaysia successfully reduced 33% of the greenhouse gases (GHG) emission (Eleventh Malaysia Plan, 2015). The Malaysian government has taken various mitigation measures to achieve a new target of 40% reduction of the GHG emission by 2020 (Eleventh Malaysia Plan, 2015).

Sustainability is one of the defining issues nowadays and in the coming decades, as it is increasingly seen as a potential source of competitive advantage (Salmah & Norfaridatul Akmaliah, 2016). Similar to other countries, Malaysia also encounters sustainability issues, particularly with the cases of severe pollution. Table 1.1 shows the pollution index of over 184 countries in 2020, which listed Malaysia at the 111th ranking; thus, clearly affecting the country's sustainability efforts. In order to cope with sustainability issues, sustainability engagement has become a vital plan.

Table 1.1 Pollution Index (2020)

Rank	Country	Pollution Index
1	Macedonia	97.44
111	Malaysia	67.65
184	Indonesia	54.73

Source: Pollution Index (2020)

The sustainability of economic, environmental, and social aspects, as well as efficient utilisation and energy interdependence, can guarantee sustainable energy growth (GreenTech Malaysia, 2016). The Malaysian government has recognised the increasingly important need to invest in environmental protection (Salmah & Norfaridatul Akmaliah, 2016). The government continuously promotes green practices, as these practices potentially enhance the building construction, transportation system, and products and services, resulting in lower carbon emission and effective energy consumption (Eleventh Malaysia Plan, 2015). The establishment of the Ministry of Energy, Green Technology and Water on 9th April 2009 proved that Malaysia firmly believes the importance of national efforts to achieve sustainable development (Puan et al., 2016). In the long-term development plans, sustainable economic development is deemed crucial and green technologies are viewed as the catalyst of economic growth for the country (GreenTech Malaysia, 2016). Clearly, in these recent years, Malaysia has emphasised sustainable development, which has subsequently encouraged various organisations to embrace green policies and technologies (Hanim et al., 2016).

Moreover, the increase in the public concern on sustainability issues has also prompted various businesses to take actions to fulfil the requirements of stakeholders

(Sharifah, 2010; Zainab et al., 2015). Numerous organisations that are known to contribute to the advancement of technology and economic progress have been criticised for the creation of social problems. There have been increasing concerns on various issues such as product quality and safety, pollution, waste, resource depletion, and power and status of workers in an organisation (Khaled & Walker, 2009). With the growing attention on corporate sustainability performance among regulators, governments, and practitioners globally (Muhammad et al., 2018), the Malaysian government has also recently shifted its focus to corporate sustainability and reporting quality. Sustainability activities are important and need to be considered given their contribution to corporate sustainability performance (Eleventh Malaysia Plan, 2015). Thus, the Malaysian government has encouraged organisations to disclose their sustainability activities in their annual reports; however, the nature of corporate sustainability and its reporting has remained voluntary (Muhammad et al., 2018).

According to Hart and Dowell (2011), an organisation plays an important role in fostering green practices, as a business should mitigate both environmental and social risks. Under the National Transformational Policy (2011–2020), the Malaysian government aims to retain people-centric focus through the New Economic Model that sets out the objective of becoming inclusive and sustainable high-income economy (Eleventh Malaysia Plan, 2015). All sectors, especially the manufacturing sector, are to be involved in the green processes in order to shift sustainability paradigm on the natural assets by focusing on the green growth (Eleventh Malaysia Plan, 2015). As an important sector in Malaysia, it is a must for the manufacturing sector to embark on green practices in its daily operations in order to sustain their businesses.

In order to achieve sustainability, the manufacturing sector is one of the important elements, as the sector is required to produce goods that meet the needs of society (Mittal, 2017). The Eleventh Malaysia Plan promotes the implementation of sustainable consumption and production in the manufacturing processes through the optimisation of raw material usage in life cycle assessment (Eleventh Malaysia Plan, 2015). The international environmental standards and environmental commitment must be aligned and rationalised for the development of the manufacturing sector.

Basically, economic value is no longer the sole factor in the assessment of manufacturing performance, as the effects of manufacturing practices and their social and environmental aspects should be taken into consideration (Salwa Hanim et al., 2017).

Despite the numerous types of industries under the manufacturing sector in Malaysia, this study focused on the chemical manufacturing industry. The chemical industry has become one of the strongest and largest fields (Nur Khairlida et al., 2018) and among the important sectors in the world (Nur Khairlida et al., 2017). The rapid development of the chemical industry in Malaysia has triggered the need to strengthen the management of chemicals in order to prevent incidents involving chemicals that can threaten the safety and health of mankind and environment given the harmful effects of certain chemicals and toxic waste (Elliott et al., 2004; Hutt et al., 2016; Lee, Mazlin, Goh, & Marlia, 2015; Nur Khairlida et al., 2017; Nur Khairlida et al., 2018; Salmah & Norfaridatul Akmaliah, 2016). The chemical industry, which benefits many communities and contributes to the country's economic development (Nur Khairlida et al., 2018), has grown to become one of the leading industries in the Malaysian manufacturing sector (Ta et al., 2016). Being the second-largest contributor to the total manufactured exports, amounting to about 6% of the total Malaysian exports annually (Lee, Mazlin, Goh, & Marlia, 2015; Lee, Mazlin, Goh, Singh, et al., 2015), the chemical industry is one of the major contributors to the country's gross domestic product (GDP) (Noor Syazwani et al., 2018).

The chemical manufacturing industry generates a high amount of waste (Salihoglu, 2019; Tijjani & Salem Salah, 2015) and GHG emissions (Fauré et al., 2019; Huisingh et al., 2015; Klemeš et al., 2016). Chemical waste continues to be a major policy driver for many countries, including Malaysia (Hutt et al., 2016). Hutt et al. (2016) highlighted the importance of managing chemicals and sustainable chemical manufacturing with respect to the SDGs. Although products of industrial chemicals, such as cosmetics, pesticides, and pharmaceuticals, are regulated by competent authorities, the control and management of industrial chemicals remain a challenge in Malaysia (Ta et al., 2016). For example, a specific industrial chemical that is a prohibited import may not be necessarily prohibited from being manufactured in

Malaysia; thus, a systematic approach is needed to control, monitor, and, if necessary, prohibit the use of certain industrial chemicals that are of public concern in Malaysia (Ta et al., 2016).

In short, it remains a challenge for the chemical manufacturing industry to effectively incorporate sustainability into the supply chain, research and development, management, and operations (Hutt et al., 2016; Lozano et al., 2016), which highlights the demand for efficient and environmentally chemical processes and products (Ganasen & Velaichamy, 2016). There is a critical need to conduct research that focuses on the chemical manufacturing industry, as such organisations are prompted to enhance their sustainability performance through the incorporation of green practices (Lozano et al., 2016).

Apart from the importance of green practices, Islamic work ethics must also be inculcated to achieve corporate sustainability (Abul, 2016). Studies have posited that an organisation plays a significant and decisive role in establishing ethical conduct of an individual employee (Uzma et al., 2017). According to Mitra (2014), Islam is one of the major religions in the world. In Malaysia, a sizeable proportion (60.4%) of the population (27.73 million in 2008) are Muslims (approximately 16,748,920) (Kalthom & Mohd Ismail, 2010). In the Malaysian context, the work ethics is seen as a guideline to carry out tasks for all employees (Aspalaila & Fatimah Wati, 2016). However, many businesses in Malaysia do not comply with the regulations and practices of Islamic principles (Kalthom & Mohd Ismail, 2010). Furthermore, although there are many opportunities for the employees to contribute to an organisation, there are also situations that require them to engage in behaviours that can cause harm and prevent the organisation from achieving its goal (Aspalaila & Fatimah Wati, 2016). Abul (2016) stated that the Islamic approach is more agreeable to environmental protection; since the environmental and sustainability issues are related to ethical business, a business should have a serious commitment to Islamic ethics.

Besides that, organisation size and organisation age are also important factors for an organisation to achieve corporate sustainability performance. Prior studies measured organisation size by the number of employees (Dangelico et al., 2013; Kim &

Atuahene-Gima, 2010), which was considered in this study given its significance in explaining the environmental behaviour of organisations (Baylis et al., 1998). Meanwhile, organisation age can be measured by the number of years since the foundation of the organisation (Dangelico & Pontrandolfo, 2015). According to FMM, there are small, medium, and large manufacturing organisations (FMM, 2017). The number of employees in a small manufacturing organisation is lower than 75 employees. The number of employees in a medium manufacturing organisation ranges from 75 to 250 employees. Meanwhile, the number of employees in a large manufacturing organisation is more than 250 employees.

1.3 Problem Statement

Malaysia was part of the development of the Sustainable Development Goals (SDGs) that began in late 2014 (Department of Statistics Malaysia [DOSM], 2019). There are several SDGs highlighted by the Malaysian government for all industries in the country to achieve, specifically in terms of economic, environmental, and social sustainability performance, by 2030. The highlighted goals include the increase in the retention of the health workforce; improved water quality by minimising the release of hazardous chemicals; increase in water-use efficiency across all sectors; enhanced access to clean energy research and technology; improved global resource efficiency in consumption and production; achieve environmentally sound management of chemicals and all forms of waste throughout the life cycle that significantly reduces their release to air, water, and soil for minimal adverse impacts on human health and the environment; and reduction in waste generation by encouraging companies to adopt sustainable practices and integrate sustainability information into their reporting cycle (DOSM, 2019).

With respect to these SDGs, it is important for every industry in Malaysia, especially the chemical manufacturing industry, to have a proper implementation of green practices to achieve corporate sustainability performance. Considering the rapid development of the chemical industry in Malaysia that has triggered the need to strengthen the management of chemicals in order to prevent incidents that threaten the safety and health of mankind and environment (Nur Khairlida et al., 2017), this study focused on the chemical manufacturing organisations (DOSM, 2019; FMM,

2017). Despite its industrial significance, chemical manufacturing organisations encounter various sustainability problems (Hutt et al., 2016; Lozano et al., 2016; Samuel et al., 2013; Ta et al., 2016). Various factors affect the sustainability of the chemical manufacturing industry in Malaysia; their operations affect the social and environmental sustainability of the industry, which, in turn, affect the economic sustainability of the industry.

Firstly, the manufacturing workers in Malaysia appear to be more subjected to occupational accidents than their counterparts in other industrial sectors (Ali et al., 2019). With the increasing number of chemical organisations in Malaysia over the years, the risk from this chemical industry also increases (Azizan et al., 2018; Nur Khairlida et al., 2017; Phneah et al., 2017). According to Azizan et al. (2018), the chemical industry encounters unpredictable occurrence of a major fire, explosion, and even accidental dispersion of hazardous chemicals, as most of the industrial chemicals are flammable, explosive, toxic, and corrosive. Moreover, the unexpected release of these materials can cause deadly effects and damage the surrounding areas. Besides that, the occupational hazard caused by the exposure to chemicals is rather difficult to detect because certain chemicals are odourless and exist in a form that cannot be visually detected; thus, the workers who are involved in the chemical processes tend to have higher risk exposure to hazardous chemicals (Phneah et al., 2017). Phneah et al. (2017) stated that the reported cases of work-related diseases continue to increase yearly, which indicates the urgent need to consider the occupational health impact on the workers' health during the development, design, and operation of a chemical process.

Apart from affecting the workers, the negative effects of improper management of the chemical industry in Malaysia also involve other stakeholders, such as consumers, local residents, and the environment. For instance, Malaysia was recently shocked by the news of major river pollution, specifically the illegal dumping of hazardous chemical wastes into Kim Kim River (Yap et al., 2019). Effective measures to address the illegal dumping of chemical wastes have not been critically taken despite its occurrence over the years (Tasnim, 2019). Since 7th March 2019, 2,000 cases of health problems (e.g. breathing difficulties, dizziness, nausea, and vomiting) among the school children in 111 schools were reportedly ordered to be

closed due to the illegal dumping of toxic waste into Kim Kim River (Borneo Post Online, 2019; Yap et al., 2019).

Besides that, the frequent usage of chemical products, such as pharmaceutical products and pesticides, contribute negative effects to the product users. The chemicals present in many products potentially contribute negative effects on sustainability, such as the public health and the environment (Mahmoud, 2017; Makarova et al., 2019; Moses, 2019; Nur Khairlida et al., 2018; Persson et al., 2019; Ta et al., 2016). Certain chemical ingredients in a product may enter a human body during the application, storage, or in the event of any unintentional incident (Raslan et al., 2019). Meanwhile, the frequent overuse of chemicals, such as pesticides, negatively affects human health and the environment, which leads to greater expenditure on healthcare (Jamal et al., 2018). Although the Department of Agriculture and Department of Health have conducted various programmes to overcome this problem, many injuries and deaths, particularly among rice farmers in Malaysia, continue to take place (Jamal et al., 2018).

On the other hand, the Malaysian National Poisons Centre reported that the majority of the poisoning exposure calls were due to the usage of chemical products, specifically pharmaceutical products (36.0%) and pesticides (28.4%) (Tangiisuran et al., 2018). According to Tangiisuran et al. (2018), the number of intentional poisoning cases (53.8%) outweighed unintentional poisonings (44.0%), with only 1.0% of the cases were due to the adverse reactions—children are more susceptible to toxic chemicals due to the immaturity of their organ systems in detoxifying poison and a greater body surface that also contributes to the fast rate of absorption through skin (Tangiisuran et al., 2018). This shows that the chemical products produced by the chemical manufacturing industry in Malaysia contribute negative effects on the health of many stakeholders, resulting in negative effects on the sustainability performance of the industry.

Adding to that, the chemical manufacturing industry in Malaysia also negatively affects the environmental sustainability performance of the industry, as the chemical industry generated the highest amount of waste in 2009 (30.6%), followed by water treatment plants and power stations (13.8%), and electronics (11.5%) (Salmah &

Norfaridatul Akmaliah, 2016). Although the scheduled waste management in Malaysia is considered well-established after more than 35 years, the problems associated with scheduled waste management and pollution, such as the lack of awareness on sustainability, enforcement, periodical monitoring, and illegal dumping, still exist, which necessitate urgent intervention from relevant stakeholders (Salmah & Norfaridatul Akmaliah, 2016).

Taking the case of the concept of environmental ethics, it is evident that the operations of manufacturing activities in Malaysia substantially affect the natural environment (Maliza Delima, 2012; Mohammad Ghozali et al., 2016) due to the absence of green practices (Salwa Hanim et al., 2017). The organisations do not consider corporate sustainability performance in their daily operations because they are still in the process of learning how to incorporate green practices (Mohammad Ghozali et al., 2016). Many organisations do not have sufficient knowledge of the environmental management systems; thus, they do not assess their environmental performance (Silva & Medeiros, 2004).

Accordingly, there are six dimensions of green practices for the chemical manufacturing organisations, which are (1) waste management, (2) sustainable lifestyles, (3) sustainable procurement, (4) eco-labelling, (5) sustainable marketing, and (6) sustainable design (Aktin & Gergin, 2016; Asmah Alia et al., 2015; Chan, 2013; Khairul Naim et al., 2013; Kirama & Mayo, 2016; Kulkarni et al., 2014; Lin et al., 2013; Majerovaa, 2015; Maletic et al., 2014; Nadanyiova et al., 2015; Wan & Toppinen, 2016). These green practices support the government plan to attain an advanced economy by 2020 through resource efficiency and lower carbon emission in a socially inclusive manner (Eleventh Malaysia Plan, 2015). According to Mohammad Ghozali et al. (2016), continuous research is necessary to obtain updated information and fully understand the green issues in Malaysia, as this field is still new and continuously developing. Moreover, there has not been much information on the implementation of green practices to achieve corporate sustainability performance in the Malaysian context (Mohammad Ghozali et al., 2016; Salwa Hanim et al., 2017).

Furthermore, there have been limited studies that simultaneously consider the triple bottom line dimensions (i.e. economic, environmental, and social dimensions) to assess the effects of green practices on the sustainability performance in the industry (Mani et al., 2016; Muhammad et al., 2018; Salwa Hanim et al., 2017; Zabihollah, 2017). Hence, this study was deemed important given its focus on all three dimensions of the corporate sustainability performance, as most prior studies focused on the dimensions separately (Muhammad et al., 2018). Moreover, only a few studies focused on the relationship between green manufacturing practices and sustainability performance (Salwa Hanim et al., 2017), especially in the Malaysian context (Font et al., 2008).

Additionally, only a few studies assessed the Islamic work ethics in the developing countries, which highlights the need for more similar studies (Kumar & Raduan, 2010; Muhammad Shakil, 2011; Wahibur, 2010). It is important to understand the possible linkage of ethics and sustainable performance but studies on the relationship between the Islamic work ethics and the corporate sustainability performance has been rather limited (Nooraslinda et al., 2016; Salih et al., 2012). Past studies on ethics and sustainability mainly focused on public listed organisations in developing countries like Malaysia (Nooraslinda et al., 2016) but studies on ethics and sustainability that involved the manufacturing organisations have been lacking. The limited number of studies on the Islamic work ethics in developing countries constituted the foundation of the current study to assess the moderating role of the Islamic work ethics in the relationship between the implementation of green practices and the corporate sustainability performance. Islamic work ethic is considered to be the moderating variable in this study as the proper implementation of work ethics lead to the sustainability of the organisation as according to Rice (1999), Islam enhances the protection of environment, economic, and social. As many previous studies that have proven the significant role of Islamic work ethics on performance of organisation, this study aims to study the moderating role of Islamic work ethics on the relationship between green practices on corporate sustainability performance.

Similarly, only a few studies assessed the moderating role of organisation size in the relationship between green practices and corporate sustainability performance. Studies on the relationships of organisation size, green practices, and corporate

sustainable performance remain in its infancy (Gupta & Nagpal, 2020), particularly on the green practices in the developing countries (Mohd Yazid et al., 2015). Mohd Yazid et al. (2015) proposed a conceptual study on the relationship between green design and technology towards business sustainability in Malaysian manufacturing industry. Literature also revealed limited empirical studies on the moderating role of organisation size in the relationship between green practices and the performance of an organisation (Wang et al., 2018), which was addressed in the current study.

According to Balasubramanian (2020), the previous literature is unclear whether small and medium firms (SMEs) and large firms differ in their extents of implementation of green practice, where it was greater, and the rationale for the difference, with all of this understanding needing to be at an individual practice level of organisation (as it could be different for each) as some studies highlight large firms, given their greater resources, doing more implementation (Grant et al., 2002), while others disagree (Rao, 2002). Despite the contrasting viewpoints, going with the larger body of findings, green practices implementation overall, and for each practice individually can be argued to be greater at large firms (Balasubramnian, 2020). As there is limited study of organisation size on the relationship between green practices and sustainability performance, this study aims to fill this research gap by studying the moderating role of organisation size on the relationship between green practices and corporate sustainability performance in chemical manufacturing organisations in Malaysia. Prior research has highlighted the importance of organisation size in improving the performance of organisation and thus, organisation size has been considered as the moderating role in this study.

Likewise, only a few studies assessed the effect of organisation age on corporate sustainability performance. Li et al. (2011) highlighted the lack of studies on the effect of organisation age on the performance of an organisation. Moreover, the existing studies on the relationship between organisation age and organisational performance focused on the individual group levels only (Williams & O'Reilly III, 1998), which demonstrated the limited number of studies on organisation age and organisational performance (Caves, 1998; Coad et al., 2013; Li et al., 2011). Coad et al. (2013) further added that only little is known about how organisational performance changes with organisational age, especially the scarcity of findings on

the relationship between financial structure and organisation age. Several researchers such as Gupta and Nagpal (2020) and Balasubramanian (2020) have suggested that the study on the moderating role of organisation age should be done on the relationship between green practices and corporate sustainability performance as it has been indentified as one of the potential moderating variable besides organisation size. As stated by Kipesha (2013), organisation age positively affects the sustainability of organisation. Thus organisation age has been chosen as the moderating variable in this study on the relationship between green practices and corporate sustainability performance.

Hence, all the above factors in relation to the sustainability issues and the limited number of studies that involve the chemical manufacturing organisations in Malaysia were expected to provide a better understanding on the effects of green practices through the following dimensions of green practices, namely (1) waste management, (2) sustainable lifestyles, (3) sustainable procurement, (4) eco-labelling, (5) sustainable marketing, and (6) sustainable design, on the corporate sustainability performance in terms of economic, environmental, and social sustainability performance in the Malaysian chemical manufacturing industry. This study also aimed to test the moderating role of Islamic work ethics, organisation size, and organisation age on the effects of green practices on the corporate sustainability performance of chemical manufacturing organisations. In short, all these factors established the motivation of this study that involved the chemical manufacturing organisations in Malaysia.

1.4 Research Questions

Based on the above problem statement, the following research questions were formulated:

1. What is the relationship between green practices and the corporate sustainability performance?
2. What is the relationship between the Islamic work ethics and the corporate sustainability performance?
3. Does the Islamic work ethics moderate the relationship between green practices and corporate sustainability performance?

4. What is the relationship between the organisation size and the corporate sustainability performance?
5. Does organisation size moderate the relationship between green practices and corporate sustainability performance?
6. What is the relationship between the organisation age and the corporate sustainability performance?
7. Does organisation age moderate the relationship between green practices and corporate sustainability performance?

1.5 Research Objectives

Overall, this study aimed to examine the effects of green practices on the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance. The specific objectives of this study are as follows:

1. To determine the effects of green practices on the corporate sustainability performance.
2. To determine the effect of the Islamic work ethics on the corporate sustainability performance.
3. To assess the moderation effect of the Islamic work ethics on the relationship between green practices and corporate sustainability performance.
4. To determine the effect of the organisation size on the corporate sustainability performance.
5. To assess the moderation effect of the organisation size on the relationship between green practices and corporate sustainability performance.
6. To determine the effect of the organisation age on the corporate sustainability performance.
7. To assess the moderation effect of the organisation age on the relationship between green practices and corporate sustainability performance.

1.6 Scope of Study

This study exclusively focused on the effects of green practices on the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance of chemical manufacturing organisations in Malaysia. In particular, this study simultaneously assessed all three dimensions of corporate sustainability performance, specifically economic, environmental, and social sustainability performance. Besides that, this study also covered six dimensions of green practices, namely (1) waste management, (2) sustainable lifestyles, (3) sustainable procurement, (4) eco-labelling, (5) sustainable marketing, and (6) sustainable design. For this study, chemical manufacturing organisations were selected due to their importance and influence on the future stakeholders, their vital role in the development of society and the country, and their involvement in sustainability issues (Hutt et al., 2016; Lozano et al., 2016). Referring to the FMM directory, 366 chemical manufacturing organisations in Malaysia established the target population of this study. A total of 344 chemical manufacturing organisations across different states were selected as the sample of this study: (1) Selangor (185 organisations); (2) Johor (48 organisations); (3) Pulau Pinang (38 organisations); (4) Kuala Lumpur (37 organisations); (5) Perak (24 organisations); (6) Negeri Sembilan (12 organisations). These organisations represented the unit of analysis of this study.

1.7 Significance of Study

This study was expected to provide significant theoretical and practical contributions, which are discussed in the following subsections.

1.7.1 Theoretical Contributions

The results and findings of this study provided significant theoretical contributions, specifically on the concepts of green practices, Islamic work ethics, organisation age, organisation size, and corporate sustainability performance. Theoretically, this study enhanced the existing body of knowledge on green practices, Islamic work ethics, organisation age, organisation size, and corporate sustainability performance among

chemical manufacturing organisations. The sustainability topic has been a great concern for scholars and practitioners globally, especially on the significance of green practices in the development of sustainable business (Luthra et al., 2016). Despite its significance in the business context, literature has revealed limited studies on the relationship between green practices and the corporate sustainability performance (Salwa Hanim et al., 2017; Vachon & Klassen, 2006). This study provided empirical evidence on sustainability in the context of the chemical manufacturing industry.

Additionally, this study contributed to the knowledge and practices of controlling environmental pollution with respect to the following theories: (1) resource-based view theory; (2) natural-resource-based view theory; and (3) stakeholder theory. Al-Quran and hadith were also have been used in this study as the main foundation of this study to connect the variable of Islamic work ethics on the relationship between green practices and corporate sustainability performance. The resource-based view theory and natural-resource-based view theory were used in this study to assess the relationship between green practices and the corporate sustainability performance. Meanwhile, Al-Quran and hadith were used in this study to assess the relationship between green practices and the corporate sustainability performance and the relationship between the Islamic work ethics and the corporate sustainability performance. The moderating role of organisation size in the relationship between green practices and the corporate sustainability performance was assessed with respect to the resource-based view theory. Apart from that, the stakeholder theory was used in this study to assess the relationship between green practices and the corporate sustainability performance and the relationship between the Islamic work ethics and the corporate sustainability performance.

In particular, the resource-based view theory in this study was related to the green practices in the chemical manufacturing organisations to achieve superior competitive advantage or specifically, the corporate sustainability performance in terms of economic, environmental, and social sustainability performance. In this case, green practices were deemed valuable, rare, non-substitutable, and inimitable, which were expected to contribute to the competitive performance of these organisations. The resource-based view theory was also considered in this study to

support the relationship between organisation size and the corporate sustainability performance. Theoretically, as an organisation grows in size, the organisation can leverage their existing resources to achieve greater economies of scale, resulting in better corporate sustainability performance over time.

Secondly, the natural-resource-based view theory was used in this study given the focus of this on the green practices at the organisational level that involved an interaction with the environment to achieve corporate sustainability performance in terms of improved productivity and lower operational cost. The successful implementation of green practices leads to better environmental protection and subsequently, improves the financial performance, resulting in better competitive advantage.

Meanwhile, the stakeholder theory in this study was related to the relationship between green practices and corporate sustainability performance and the relationship between the Islamic work ethics and the corporate sustainability performance. Theoretically, organisations with high stakeholder engagement are more likely to adopt corporate sustainability, which means that the organisations support the sustainable development of their business and their neighbouring communities. The stakeholder theory advocated the importance of treating all stakeholders with fairness, honesty, and even generosity. It is the role of all stakeholders to follow the organisational ethical codes during the business operations.

Last but not least, Al-Quran and hadith were used in this study to assess the relationship between green practices and the corporate sustainability performance and the relationship between the Islamic work ethics and the corporate sustainability performance. In every aspect of life, Islam established a sound and complete ethical system, where the sayings and practices of the Prophet Muhammad (S.A.W) and Al-Quran serve as the main sources of Islamic work ethics. The Islamic work ethics is deemed important in practising green practices and achieving corporate sustainability performance, as Islam enhances the economy, environmental, and social attributes.

Besides that, this study extended the literature on sustainability, specifically on the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance. Besides that, there are many lessons that can be learned beyond the context of chemical manufacturing. Other industry of the manufacturing could be studied using a related methodology to find the elements of green practices in achieving corporate sustainability performance. This study benefitted the chemical manufacturing organisations in their implementation of green practices and Islamic work ethics to achieve corporate sustainability performance, resulting in enhanced competitive advantage.

1.7.2 Practical Contributions

The results and findings of this study also provided some practical contributions, particularly on the concepts of green practices, Islamic work ethics, organisation size, organisation age, and corporate sustainability performance. The comprehensive understanding of the relationships of green practices, corporate sustainability performance, Islamic work ethics, organisation size, and organisation age presented in this study were expected to benefit the chemical manufacturing industry in Malaysia. The implementation of green practices for environmental protection is advantageous for the chemical manufacturing industry in Malaysia. In particular, this study provided essential insights on the advantages of environmental strategies and the direction required, particularly for the managers of the chemical manufacturing organisations, to sustain the organisation through the implementation of green practices and Islamic work ethics. The influence of environmental initiatives on the sustainable global supply chain management is necessary for the organisations to remain competitive (Pedersen, 2009). The obtained results and findings of this study were also expected to drive employees in the chemical manufacturing organisations to favourably view green operations as an important task.

Moreover, this study promoted the incorporation of green practices and the Islamic work ethics among the employees, especially in their working attitude, to achieve corporate sustainability performance, which largely benefitted the managers of the chemical manufacturing organisations. Good ethical code emphasises ethics and

values, such as honesty, truthfulness, hard work, and patience, which can help an organisation to succeed (Jihad et al., 2015). Besides that, the managers of the chemical manufacturing organisations can conduct training programmes to enhance the Islamic work ethics to positively influence the employees and subsequently, the overall manufacturing sustainability performance. Organisations that follow ethical principles demonstrate enhanced organisational performance, which ensures the prosperity of the stakeholders and improves the well-being and welfare of employees (Barutcugil, 2004; Berrone et al., 2007; Donker et al., 2008; Mead, 1998; Mohd Abdul et al., 2010). Thus, this study benefitted the chemical manufacturing organisations in Malaysia in their efforts of implementing green practices, developing new profit opportunities towards corporate sustainable performance, and setting themselves apart from their competitors by practising the Islamic work ethics.

Besides that, the managers of chemical manufacturing organisations can benefit from the fact that the organisation size plays an important role in achieving corporate sustainability performance. Wang et al. (2018) stated that the performance of an organisation is not only determined by the business strategy but also the organisation size. Hence, an organisation should properly assess its environment before formulating the necessary strategies. Even with a suitable strategy, an organisation would not be able to implement the formulated strategy without adequate resources (Wang et al., 2018). Therefore, it is imperative to consider organisation size as one of the most important contingency variables given its significant influence on the relationship between strategy and performance (Hofer, 1975).

Apart from that, this study also benefitted the managers of the chemical manufacturing organisations through the evidence on the influence of organisation age towards achieving corporate sustainability performance; organisation age is an important attribute that influences the performance of an organisation, as this attribute reflects the experience possessed by the organisation in its operations (Kipesha, 2013). Assessing the relationship between organisation age and performance reveals whether the organisations are able to implement proper strategies to stay relevant and identify strategies to constantly renew themselves (Noor Azina & Hashem Salarzadeh, 2014). With that, the managers are able to

implement appropriate strategies in relation to the organisation age for the sustainability of the organisations.

Basically, the manufacturing organisations in Malaysia with better opportunities to develop and implement green practices effectively and efficiently would be able to stay ahead of their competitors and improve their sustainability performance. This study was deemed significant for the manufacturing industry in Malaysia in the adoption of green practices as well as among stakeholders who encourage green practices, specifically of those in the developing countries, through the introduction of an integrated framework in this study that combined green practices, Islamic work ethics, organisation size, organisation age, and the corporate sustainability performance. This study was expected to facilitate the efforts of the chemical manufacturing industry to simultaneously sustain the organisations and protect the environment ethically.

1.8 Definition of Key Terms

Green Practices: Green practices refer to the organisations' practices to save the environment by minimising or eliminating the environmental impact of their operations (Linas et al., 2014).

Waste Management: Waste management is defined as actions and activities that are required to manage waste from its inception to its final disposal (United Nations [UN], 1997).

Sustainable Design: Sustainable design refers to sustainable product design with a globally recognised method for an organisation to improve profit margin, social benefits, environmental performance, market opportunities, and product quality (United Nations Environment Programme [UNEP], 2016).

Eco-Labelling: Eco-labelling is defined as the label of products that have a long-term goal of natural preservation with low detrimental environmental impact at all stages of their life cycle (OECD, 2009).

Sustainable Procurement: Sustainable procurement is a process whereby organisations meet their needs for goods, services, works, and utilities in a way that achieves value for money on a whole life basis in terms of generating benefits, not only for the organisations, but also to the society and economy, whilst minimising damage to the environment (UNEP, 2015).

Sustainable Marketing: Sustainable marketing is defined as a process of planning, implementing, and controlling the development, pricing, promotion, and product distribution that satisfy the consumers' needs and organisational goals and assure the ecosystem compatibility (Fuller, 1999).

Sustainable Lifestyles: Sustainable lifestyles refer to the patterns of action and consumption by people to affiliate and differentiate themselves from others, which meet the basic needs, provide a better quality of life, minimise the use of natural resources and emission of waste and pollutants over the life cycle, and do not jeopardise the needs of the future generations (Thidell, 2015).

Sustainable Consumption and Production: Sustainable consumption and production is basically a concept that does not compromise the necessity of future generations and the environment while promoting economic growth (Eleventh Malaysia Plan, 2015).

Islamic Work Ethics: The Islamic work ethics is defined as "good character", which is shaped as a successful practising of Al-Quran and practices and sayings of Prophet Muhammad (S.A.W) (Abbas & Abdullah, 2008).

Organisation Size: Organisation size refers to the number of employees in an organisation (Dangelico & Pontrandolfo, 2015).

Organisation Age: Organisation age refers to the number of operating years for an organisation since its establishment (Dangelico & Pontrandolfo, 2015).

Corporate Sustainability Performance: Corporate sustainability performance refers to the dynamic state that arises when an organisation develops continuous shareholders' and stakeholders' values of maintaining the well-being of the economy, environment, and society as a long-term goal (Elkafi et al., 2012; Mohammd Ghozali et al., 2016).

Economic Sustainability Performance: Economic sustainability performance is defined as the measures on the basis of economic growth while protecting the environment and improving the quality of life (Salwa Hanim et al., 2017).

Environmental Sustainability Performance: Environmental sustainability performance is defined as how the environment is affected by the management of an organisation (International Organisation for Standardisation, 1999).

Social Sustainability Performance: Social sustainability performance is defined as making an organisation's social mission a reality, aligned with the interests of society by adding accepted social values and fulfilling social responsibility (Brockett & Zabihollah, 2012).

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter presents the background of the study in further details and reviews the past studies on green practices, Islamic work ethics, organisation size, organisation age, and corporate sustainability performance. Besides that, this chapter reviews the underpinning theories of this study, specifically the resource-based view theory, natural-resource-based view theory, stakeholder theory; and also Al Quran and hadith have been used in this study which established the explanatory grounds for this study. These theories and Al-Quran and hadith were used in this study to examine effects of green practices on the corporate sustainability performance of various chemical manufacturing organisations in Malaysia as well as the moderating role of Islamic work ethics, organisation size, and organisation age.

2.2 Manufacturing Sector

The manufacturing sector is a significant sector in Malaysia given its high GDP contribution and sales that strengthen the country's economy (Hameed et al., 2013; Salwa Hanim et al., 2017). The manufacturing sector in Malaysia contributed 22.7% of the total GDP in 2019, with the gross output of RM 1,275.8 billion in 2017 (DOSM, 2019). Meanwhile, the total number of employees in the manufacturing sector back in 2017 was 2,214,883 (DOSM, 2019). Figure 2.1 illustrates the contribution of GDP by sector in Malaysia.

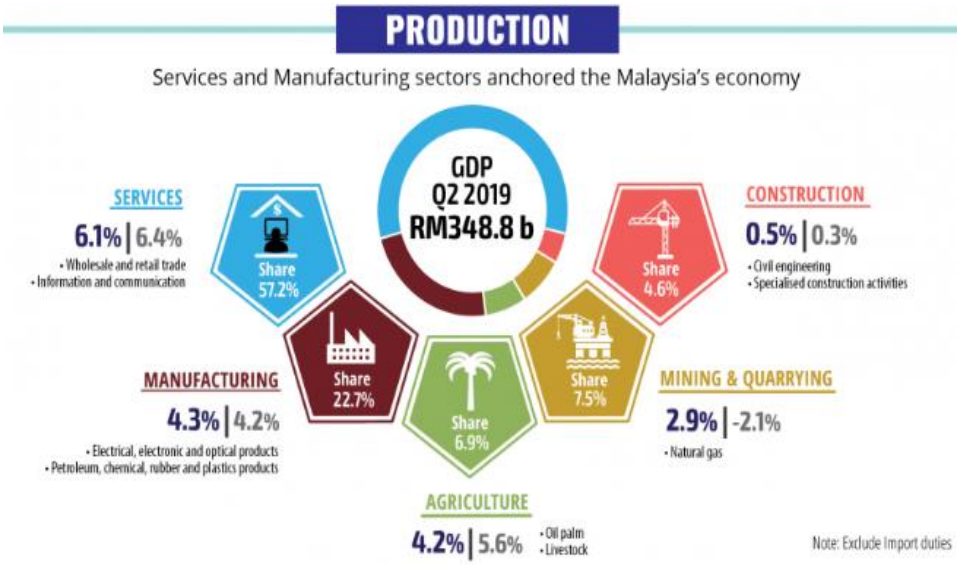


Figure 2.1 Contribution of GDP by Sector in Malaysia

Source: DOSM (2019)

Besides that, the manufacturing sector in Malaysia also contributed 19% of the total GHG emission with the increase of annual growth at 3.6% (International Energy Agency [IEA], 2014). The driving forces such as the increase in awareness and environmental concern, have propelled manufacturers globally to practice green manufacturing (Raja Ariffin et al., 2015). In order to improve the quality of life and preserve the environment while carrying out these manufacturing activities, green practices are one of the important environmental initiatives taken by the manufacturing sector (Salwa Hanim et al., 2017). The Malaysian government has spent a total of RM 2,592.6 million on environmental protection initiatives for the manufacturing sector in 2017 (DOSM, 2019). The manufacturing sector was the highest contributor when it comes to the environmental protection expenditure, which amounted to a total of RM 1.88 billion (73.6%) (DOSM, 2019). Table 2.1 presents the environmental protection expenditure by sector in 2017 whereas Table 2.2 presents the environmental protection expenditure by type of expenditure.

Table 2.1 Environmental Protection Expenditure by Sector in 2017

No.	Sector	Expenditure (Million)
1	Manufacturing	RM 1,734.9
2	Services	RM 289.3
3	Mining and quarrying	RM 313.2
4	Construction	RM 224.0
5	Agriculture, forestry, and fishing	RM 45.5
Total		RM 2,592.6

Source: DOSM (2019)

Table 2.2 Environmental Protection Expenditure by Type of Expenditure in 2017

No.	Type of Expenditure	Expenditure (Million)
1	Expenditure for environmental media	RM 1,659.7
2	Waste management	RM 789.0
3	Other environmental protection expenditure	RM 71.7
4	Environmental assessment and audit and environmental charges	RM 62.5
5	Protection and conservation of wildlife and habitat	RM 9.7
Total		RM2,592.6

Source: DOSM (2019)

The operations of the manufacturing sector in Malaysia contribute significant implications to environmental and social sustainability (workers). According to Maliza Delima (2012), industrialisation, which slowly releases poisonous chemicals, dust, extreme heat, gases, noise, and vibrations that are occasionally unrecognisable, is the cause of reported death cases that involved 300 to 400 Malaysian industrial workers (from a total of 200,000 reported death cases for Malaysian industrial workers) and another 13,000 reported disability cases every year. These figures were further supported by the Department of Occupational Safety and Health (DOSH), which stated that the manufacturing sector recorded the highest number of occupational accidents occurred (Department of Occupational Safety and Health

[DOSH], 2019). Table 2.3 presents the number of occupational accidents by sector from January 2019 to June 2019. The manufacturing sector recorded the highest number of occupational accidents, which clearly affects the social sustainability performance.

Table 2.3 Statistics of Occupational Accidents by Sector from January 2019 to June 2019

No.	Sector	Total Accidents (Death, non-permanent disability, and permanent disability)
1	Manufacturing	2469
2	Mining and quarrying	10
3	Construction	118
4	Agriculture, forestry, logging, and fishery	466
5	Utility	155
6	Transport, storage, and communication	161
7	Wholesale and retail trade	31
8	Hotel and restaurant	91
9	Financial, insurance, real estate, and business services	211
10	Public services and statutory bodies	37
Total		3749

Source: DOSH (2019)

2.2.1 Chemical Manufacturing Industry

The chemical manufacturing industry is one of the major contributors to Malaysia's GDP (Noor Syazwani et al., 2018) and the second-largest contributor to the total manufactured exports, which amounted to about 6% of the total exports annually (Lee, Mazlin, Goh, & Marlia, 2015; Lee, Mazlin, Goh, Singh, et al., 2015). The development of the chemical manufacturing industry has triggered the economic growth of a country and created hundreds of thousands of job opportunities (Nur Khairlida et al., 2018). The number of employees in the chemical manufacturing industry was 391,763 (DOSM, 2019). In Malaysia, there are numerous chemical

manufacturing organisations that provide multiple products and services (FMM, 2017; Noor Syazwani et al., 2018). The manufacturing of chemicals, specifically the manufacturing of refined petroleum products, vegetable and animal oils and fats contributed 13.5% of the country's GDP, followed by the GDP contribution of 12.4% from basic chemicals, except fertilisers, including nitrogen compounds and 6.8% from plastics and synthetic rubber in its primary forms (FMM, 2017).

However, with the increasing number of chemical organisations in Malaysia over the years, the risk from this chemical industry also increases (Nur Khairlida et al., 2017). Numerous chemical-related incidents were reported globally, including Malaysia. Table 2.4 summarises chemical-related incidents that affected the corporate sustainability performance of various chemical manufacturing organisations globally, including in Malaysia.

Table 2.4 Examples of Chemical Related Incidents

Country	Incidents	Year	Sources
Bhopal, India	In the Bhopal catastrophe, an explosion of toxic methyl isocyanate in the Union Carbide India Limited (UCIL) pesticide plant resulted in over 500,000 deaths.	1984	Dou et al. (2019); Tong et al. (2019)
Chongqing, China	The release of hydrogen sulfide (H2S) gas occurred at the Northeast Sichuan Gas Field in Gaoqiao Town of Kaixian County, Chongqing, China. At 9:55 p.m. on 23 December 2003, the release of H2S from well No.16 during the mining process of natural gas led to a forced-evacuation for 65,632 people and caused 243 deaths and 2,142 injuries.	2003	Dou et al. (2019)
Chongqing, China	The explosion of liquid chlorine tanks occurred at the Tianyuan chemical plant, Chongqing, China. At 5:57 p.m. on 16 April 2004, two adjacent liquid chlorine tanks were successively exploded, causing nine deaths, three injuries of on-site disposal personnel, and a serious release of	2004	Dou et al. (2019)

Country	Incidents	Year	Sources
	chlorine that required emergency evacuation of 150,000 people.		
Texas, United States	Owing to the improper safety management of hazardous chemicals, the devastating explosion at a fertilizer plant in Texas, America killed 35 people and 60 missing people; about 200 were also injured.	2013	Jennings & Matthiessen (2015)
Tianjin, China	An explosion occurred at a container storage station at the Port of Tianjin, Binhai New Area of Tianjin, China. On 12 August 2015, a series of explosions occurred around that night. The first two explosions at the facility occurred within 30 seconds of each other. The second explosion was far larger and involved the detonation of about 800 tons of ammonium nitrate. Fires caused by the initial explosions continued to burn uncontrollably throughout the weekend, resulting in eight additional explosions on 15 August, 2015. An investigation report concluded, in February 2016, that an overheated container of dry nitrocellulose was the cause of the initial explosion. The casualty in that report was 165 deaths (110 deaths of on-site rescue-disposal personnel and 55 deaths of enterprise staff and surrounding residents), eight missing cases (five missing on-site rescue-disposal personnel and three missing enterprise staff and surrounding residents), and 798 injuries.	2015	Dou et al. (2019)
Jingjiang, China	A fire occurred at the No. 2 switching station of Jiangsu Deqiao Storage Co. in Jingjiang, China. On 22 April 2016, a fire that began around 9:40 a.m. caused a large area of flowing fire, which destroyed three tanks. It was finally put out at 1:50 a.m. the next day after overnight work by more than 1,000 firefighters with one firefighter death and emergency evacuation of over 70,000 people.	2016	Dou et al. (2019)

Country	Incidents	Year	Sources
Klang, Selangor, Malaysia.	Fire and explosion Choon Hong III Ship, Tiram Kimia, Klang, Selangor in June 20, 1992. The incident causes 13 fatalities and the ship sank into the river and damaged the jetty.	1992	Ibrahim & Fakhru'l-Razi (2006)
East Malaysia	Fire of pertrochemical complex East Malaysia in April 28, 1999. The incident causes 12 injuries and the facilities were badly damaged.	1999	Ibrahim & Fakhru'l-Razi (2006)
Lorong Perusahaan Baru 6, Malaysia	Fire and explosion at the chemical warehouse in Lorong Perusahaan Baru 6 in November 17, 2004. The incident causes losses that were estimated RM500, 000.	2004	Ibrahim & Fakhru'l-Razi (2006)
Taman Nagasari, Pari, Malaysia	Fire at a chemical factory, Taman Nagasari in Pari in November 21, 2004. The incident causes 300 residents to be evacuated.	2004	Ibrahim & Fakhru'l-Razi (2006)
Sungai Kim Kim, Johor, Malaysia	Beginning 7 March 2019, cases of health problems (breathing difficulties, dizziness, nausea, and vomiting), especially among the school children, in Malaysia shockingly took place due to the river pollution, specifically the case of illegal dumping of hazardous chemical wastes into Kim Kim River in Pasir Gudang, Johor. Chemical pollution affected more than 2,000 people and caused the closure of 111 schools in Pasir Gudang.	2019	Yap et al. (2019)

When an environmental crisis takes place, the cooperation and relationships between stakeholders are important for the operations of chemical manufacturing organisations in Malaysia (Noor Syazwani et al., 2018). Such chemical-related incidents would negatively affect the stakeholders of the chemical manufacturing organisations. Table 2.5 presents the list of stakeholders of the chemical manufacturing organisations in Malaysia.

Table 2.5 List of Stakeholders of Chemical Manufacturing Organisations in Malaysia

Primary	Secondary
- Employees - Consumers - Retail consumers - Suppliers - Shareholders - Debt holders (Stockholders) - Contractors	- NGOs - Government - Academia - Journalists - Scientific organisations (Universities and institutes) - Industry association - Consortia - Labour associations - Non-profit organisations - Sustainability organisations - Media - Politicians - Intergovernmental organisations - Community - Public (Neighbours and local residents)

Source: Noor Syazwani et al. (2018)

Accordingly, Malaysia is a signatory to the Basel Convention, Rotterdam Convention, and Stockholm Convention (Hutt et al., 2016). Malaysia is also involved in several international participations in handling the chemical management as shown in Table 2.6 below.

Table 2.6 International Participation

Participation	Description
Basel Convention	• Ratified on 8th October 1993. • DOE Malaysia is designated as the competent authority. • Export/import through Customs shall be accompanied by a permit issued by DOE.
Rotterdam Convention	• Ratified on 4th September 2002.

	• DOE Malaysia and Pesticides Board Malaysia are the two Designated National Authorities (DNAs). • Convention on the prohibition of the development, production, stockpiling and use of chemical weapons on their destruction (Chemical weapon convention).
Stockholm Convention	• Signatory since 16th May 2002. • Malaysia has restricted the usage of most persistent organic pollutants that are listed in the convention.
The Minamata Convention on Mercury	• Designed to protect human health and the environment from anthropogenic emisssions and releases of mercury and mercury compounds.

The control of chemical wastes in Malaysia is under the Environmental Quality Act 1974 and Environmental Quality (Scheduled Wastes) Regulations 2005 (Noor Artika et al., 2019). Table 2.7 below shows the chemical legislation and enforcement agencies involve for chemical management in Malaysia.

Table 2.7 Chemical Legislation and Enforcement Agencies

Stages	Agencies	Relevant Legislation
Import		
Pesticide	Pesticide Board	Pesticide Act 1974
Industrial Chemicals	Royal Malaysia Customs	Customs Act 1967
Drugs	Ministry of Health	Poison Act 1952
Production		
Emission to air and water	Department of Environment	Environmental Quality Act 1974
Workers health and safety	Department of Occupational Safety and Health	Occupational Safety and Healt Act 1994
Transport of Hazardous Goods		
By air, road, marine and rail	Ministry of Transport	Civil Aviation Act 1969; Transport Act 1987
Use/Handling		
Pesticide	Pesticide Board	Pesticide Act 1974

Cosmetics	Ministry of Health	Control of Drugs and Cosmetics Regulation 1984
Workers health and safety	Department of Occupational Safety and Health	Occupational Safety and Health 1994
Consumer chemical	Ministry of Domestics Trade and Consumer Affairs	Consumer Protection Act 1999
Disposal		
Schedule Wastes	Department of Environment	Environmental Quality Act 1974; Environmental Quality (Schedule Wastes) Regulations 2005

New approaches to sustainable chemical manufacturing have rapidly gained momentum and are driven by the principles of green chemistry, such as addressing the unacceptably high inefficiency and waste production of the current processes and issues of safety and energy efficiency (Hutt et al., 2016). As outlined in Table 2.8, the importance of sustainability for the chemical manufacturing organisations is consistent with the 17 UN SDGs.

Table 2.8 Alignment of Sustainable Chemical Manufacturing with the UN Sustainable Development Goals (SDGs)

SDGs	Focus	Relevance of Chemistry to SDGs
Goal 1	Poverty	Sustainable chemical manufacture of medicines and quality job creation.
Goal 2	Food and Agriculture	Sustainable chemical manufacture of fertilisers and pesticides to ensure the widespread accessibility of efficient agricultural practices and food production.
Goal 3	Health	Sustainable chemical manufacture of medicines, insecticides, repellents, and larvacides.
Goal 6	Water	Sustainable chemical manufacture to reduce pollution and also to develop new chemistries and processes for wastewater treatment.
Goal 9	Industrialisation and Innovation	Sustainable chemical manufacture for greening industry through cleaner production approaches.

SDGs	Focus	Relevance of Chemistry to SDGs
Goal 11	Cities	Sustainable chemical manufacture to make cities cleaner and safer.
Goal 12	Sustainable Production and Consumption	Sustainable chemical manufacture that delivers the chemicals required to meet human needs that reduce the consumption of natural resources.
Goal 13	Climate Change	Sustainable chemical manufacture that reduces emissions through more efficient chemical reaction processes.
Goal 14	Conserve the Ocean	Sustainable chemical manufacture that reduces the production of hazardous wastes that negatively affect the marine ecology.
Goal 15	Conserve the Land	Sustainable chemical manufacture that reduces the production of hazardous wastes that negatively affect the terrestrial ecology.

Sources: DOSM (2019); Hutt et al. (2016)

The Department of Environment (DOE) is concerned about the potential release of chemicals into the environment. There are numerous existing laws and regulations that regulate the release of chemicals into the environment in Malaysia. For examples, the revised Environmental Quality (Clean Air) Regulations 2014 and Environmental Quality (Industrial Effluent) Regulations 2009 regulate the release and emission of pollutants (Ta et al., 2016). Besides that, the Chemical Industries Council of Malaysia was also established to form a stronger and more cohesive representation for other industrial sub-sectors, such as oleochemicals, industrial gases, petrochemicals, paints, coating resins, fertilisers, biodiesel and pesticides, and their respective chemical traders, distributors and other service providers (Lee, Mazlin, Goh, & Marlia, 2015; Nur Khairlida et al., 2018; Salmah & Norfaridatul Akmaliah, 2016).

One of its initiatives was the Responsible Care programme that was first launched in 1994, which proved to be a very useful tool in promoting responsible practices among signatory organisations to protect the environment, human health, and safety (Lee, Mazlin, Goh, & Marlia, 2015; Nur Khairlida et al., 2017; Nur Khairlida et al., 2018; Salmah & Norfaridatul Akmaliah, 2016). However, the participation of chemical manufacturing organisations has remained low (Lee, Mazlin, Goh, &

Marlia, 2015; Nur Khairlida et al., 2017). Although this self-regulation programme was initiated to improve the performance of the chemical manufacturing industry, the effectiveness of this programme has been in question, as to whether the sustainable practices are being practised or not (Nur Khairlida et al., 2018).

2.3 Sustainability

The history of sustainability revealed its first emergence in the global arena at the UN Conference on the Human Environment back in 1972 (Parvin & Shumi, 2011). The UN Conference on the Human Environment in Stockholm recognised the importance of environmental management and the use of environmental assessment as a management tool that represented a major step forward in the development of sustainability (DuBose et al., 1995). The concept of sustainability became globally known through the report of "Our Common Future" by the World Commission on Environment and Development [WCED] (1987), an entity of the UN that is also known as the Brundtland Commission (Linnenluecke & Griffiths, 2010). WCED described sustainability as an approach that meets the needs of the present without compromising the ability of future generations to meet their needs (WCED, 1987). Following in 1992, the Earth Summit in Rio de Janeiro contributed to the widespread acceptance of this particular definition of sustainability among business leaders, politicians, and non-government organisations (Dyllick & Hockerts, 2002).

The simplest way to introduce sustainability is to first denote the meaning of the term "sustain" (Parvin & Shumi, 2011). "To sustain" means to maintain, keep in existence, keep going, and prolong (Rajyalakshmi, 2004). Sustainability is a dynamic term that can be applied to various purposes and in a variety of settings (Brockett & Zabihollah, 2012). Mann et al. (2009) viewed sustainability as the ability of any process to remain in a continued state of adapting to or withstanding the changes, both negative and positive, within its environment. Sustainability can also be referred to as the economic development that generates wealth and meets the needs of the current generations while saving the environment and ensuring that the needs of the future generations are met as well (Daft, 2008).

Basically, the key component of sustainability is related to the process of establishing appropriate strategies, policies, and procedures that satisfy the present needs without jeopardising the future (Brockett & Zabihollah, 2012). The goal of sustainability involves various organisations to take responsibility for their economic, environmental, and social impacts (Mensah & Casadevall, 2019). The concept of sustainability is considered as a unifying factor in a comprehensive approach for sustainable development because sustainability in a dynamic system like human society is fundamentally a question of maintaining balance over time (Dahl, 1996).

2.3.1 Sustainability in Malaysia

Malaysia has received criticism for poor development planning, weak environmental regulations, and violations of human rights in palm production and timber logging (Amanda, 2015). These activities may have contributed huge foreign exchange for Malaysia but with heavy costs in terms of excessive health risks and environmental degradation and pollution. Hence, Malaysia encounters critical challenges in identifying the path of growth that does not compromise the welfare and health of the environment and individuals in this era of SDGs (Amanda, 2015). Malaysia also encounters health-related challenges of combating diseases like dengue and Zika (Sharafa & Nik Norma, 2018). The World Health Organisation (WHO) lauded Malaysia's efforts at combating dengue fever that is transmitted by the same vector of the deadly Zika virus. Nonetheless, Malaysia has yet to contain one of the biggest health threats, specifically the Aedes aegypti mosquitoes with the spread of the Zika virus (The Star Online, 2016).

Sustainability has gained growing attention of the government, practitioners, corporations, research communities, and regulatory bodies worldwide, including Malaysia (Muhammad Kashif et al., 2019). In order to achieve sustainability, the Ministry of Natural Resources and Environment (NRE) was established on 27 March 2004; one of its responsibilities covered the conservation and management of the environment and shelters (Ezani et al., 2018). Moreover, Malaysia is very active in various sustainability activities at the international level—its participation with 193 other countries to support and implement the 2030 Agenda and Sustainable Development Goals (SDGs) at the United Nations General Assembly in New York

which has clearly demonstrated the country‘s commitment towards achieving sustainability (DOSM, 2019). Agenda 21 was also incorporated as one of the important sustainable development documents for the planning process in Malaysia (Omidreza et al., 2011). Under the surveillance of NRE, DOE was assigned to enforce the Environmental Quality Act 1974 whereas the Division of Environmental Management and Climate Change was assigned to be accountable for policies relating to the environment and climate changes, such as the National Environmental Policy and National Climate Change Policy (Ezani et al., 2018).

Overall, the green movement in Malaysia has significantly developed over the past years, such as the implementation of the Waste Management and Renewable Energy Act in 2007 and the registration of the Malaysian Green Building Confederation (MGBC) in 2009 (Ezani et al., 2018). The Malaysian government has seriously considered environmental conservation through various initiatives, such as the target of becoming a developed nation through the Malaysia Development Plan and Vision 2020 with the focus on environmental sustainability (Norhayati & Rao, 2003) and promoting and financing high-impact research on green technologies under the Ministry of Energy, Green Technology, and Water (KeTTHA) in 2009 (Department of Environment [DOE], 2010). Besides that, a Low Energy Office (LEO) building with energy-efficient features through an integrated building design process and computer simulation, which served as the first government LEO building, saving up to 50% of total energy (as compared to buildings without energy-efficient features), was among the green initiatives on energy saving in Malaysia (Nor Azah et al., 2018).

Evidently, recognising the concept of sustainable development, the Malaysian government has embedded the concept of corporate sustainability in its policies, vision, and mission in several chapters of its current developmental plan from 2016 to 2020 (Eleventh Malaysia Plan, 2015; Muhammad Kashif et al., 2019). The recent Eleventh Malaysia Plan (2016-2020) outlined six strategic thrusts with respect to SDGs, such as to enhance inclusiveness towards an equitable society, improve wellbeing for all, accelerate human capital development for an advanced nation, pursue green growth for sustainability and resilience, strengthen infrastructure to

support economic expansion, and re-engineer economic growth for greater prosperity (Eleventh Malaysia Plan, 2015).

Back in 2015, all UN member countries adopted SDGs to end poverty, protect the planet, and ensure prosperity for all as part of a new global sustainable development agenda with specific goals and targets for the next 15 years (Sharafa & Nik Norma, 2018). The Malaysian government also highlighted its commitment to support and implement these SDGs, where the Eleventh Malaysia Plan was introduced to reinforce the government‘s commitment to enriching the wellbeing of Malaysians (Sharafa & Nik Norma, 2018). The Eleventh Malaysia Plan recognised the importance of conserving the natural resources for the future generations and the threats posed by the increasing intensity and frequency of extreme weather events; hence, the fourth thrust of the Eleventh Malaysia Plan was introduced to emphasise green growth development strategies (Sharafa & Nik Norma, 2018).

The Malaysian government seriously gives its commitment to creating a healthy environment and long-term sustainability (Joseph, 2016). Malaysia has achieved some of the SDGs like eradicating extreme poverty, according to the United Nations and World Bank studies as well as the Eleventh Malaysia Plan (Eleventh Malaysia Plan, 2015; Hanis, 2016). These preceding development achievements fall in the following chronological order: (1) SDG 1 (No Poverty); (2) SDG 2 (Zero Hunger); (3) SDG 3 (Good Health and Well-Being); (4) SDG 6 (Clean Water and Sanitation); (5) SDG 7 (Affordable and Clean Energy); (6) SDG 10 (Reduced Inequalities). Malaysia has equally transformed itself from a raw-material-producing economy to a diversified economy and a leading exporter of high-tech products.

Malaysia is categorised as a highly open, upper-middle-income economy with inclusive economic growth (Eleventh Malaysia Plan, 2015). However, the country‘s economic transformation has created development challenges of environmental sustainability (SDG 13: Climate Action). The need for climate action has become more urgent with the growing carbon footprint, global warming, and disastrous climate change at the global scale (Hanis, 2016). Malaysia also encounters multifaceted environmental challenges, such as the occurrence of the worst floods back in 2014. Some of the identified factors that contribute to the rising sea levels

that erode the coast include deforestation and climate change. Forest fires also contribute haze annually that cause breathing problem, affecting millions of people across the region (Sohail, 2016). Besides that, Malaysia has also experienced urban heat island phenomenon and its associated implications due to the rapid urbanisation and industrial developments (Ramakreshnan et al., 2018). Clearly, environmental sustainability is a critical challenge with multidimensional consequences to the country‘s attainment of SDG13 (Climate Action). There is a direct link between climate action and the current reality in Malaysia considering the substantial amount of investments on agriculture in Malaysia and Southesast Asia.

In terms of the corporate sustainability performance, Malaysia has experienced rapid urbanisation and industrial developments over 50 years, which have caused unprecedented changes and raised sustainability issues relating to the natural environment and the socio-economic landscape (Hezri & Mohd Nordin, 2006). In Malaysia, the concept of corporate sustainability is still implemented on a voluntary basis (Mdolo et al., 2018; Zahid & Ghazali, 2017). Considering its importance, numerous organisations in Malaysia, through various plans, toolkits, guidelines, programmes, and policies, did actively promote sustainability (Muhammad Kashif et al., 2019). Although the organisations in Malaysia demonstrate improvements in corporate sustainability practices, the progress has remained stagnant (Zahid & Ghazali, 2017). According to Aini et al. (2001), Mohamad Mohsin (2003), and Rafia et al. (2003) untreated and hazardous industrial toxic chemicals like heavy metals, improper waste management, and air pollution from industrial manufacturing processes contribute considerable environmental, socio-economic, and health challenges among Malaysians, including episodes of water crises in the Klang Valley (Rahmah & Mazlin, 2018).

At this point, the sustainable practices at the organisational level in Malaysia would enhance their organisational performance, which encourages these organisations to engage in sustainability practices for superior financial performance and emphasise both non-financial and financial performance towards attaining long-term success (Chong et al., 2018). Undoubtedly, moving towards sustainability is a must for all organisations (Chong et al., 2018). However, the sustainability reporting practices among the Malaysian organisations has remained very low, as compared to the

increasing number of businesses in the country (Nur Fatin et al., 2016). There are various reasons for the lack of sustainability reporting practices, such as high reporting cost, lack of resources, inconsistency in the disclosure practices, difficulty in measuring performance, and difficulty in rousing the organisations to be proactive in sustainability reporting (Muhammad Kashif et al., 2019). As an emerging market, organisational performance tends to be emphasised, resulting in a lack of sustainability efforts (Chong et al., 2018).

2.4 Corporate Sustainability Performance

It is significant to measure organisational performance to acquire essential information on the organisational objectives and how well the organisations achieve these objectives (Muhammad Kashif et al., 2019). Well-performing organisations can attract investors who typically monitor the overall performance of organisations before they make any investment-related decisions, specifically on whether to initiate, stay, or quit the investment (Muhammad Kashif et al., 2019).

There is no definite definition for the term "corporate sustainability" (Koc & Durmaz, 2015; Roca & Searcy, 2012). UN General Assembly (1987) defined corporate sustainability as an investment and business strategy that uses business practices to meet and balance the needs of current and future stakeholders. On a similar note, Wu (2017) described corporate sustainability as satisfying the needs of an organisation's stakeholders while maintaining its ability to meet the needs of future stakeholders. Meanwhile, Amin et al. (2019) defined sustainability in the business field as the process by which the organisations manage their economic, environmental, and social business risks as well as their obligations and opportunities. United Nations Global Compact (2015) broadly and similarly described business sustainability as conducting operations in a manner that meets the existing needs without comprising the needs of the future generations and considers the effects of business operations on the well-being of the communities. Basically, business sustainability refers to the ability to conduct business with a long-term goal of maintaining the well-being of the economy, environment, and society (Elkafi et al., 2012).

Corporate sustainability is essential to achieve the organisation's vision without losing the competitive advantage while ensuring its economic growth, environmental stewardship, and social responsibilities without contradicting from its mission and goals (Koc & Durmaz, 2015). Executives, stakeholders, and employees must take the initiatives and responsibilities towards realising the transition of the organisation towards a sustainable future (DesJardins, 2007). In this case, corporate sustainability performance reflects the ability of an organisation in using its limited resources efficiently and effectively over time, such as waste minimisation and consideration for economic, environmental, and social sustainability performance (Muhammad Kashif et al., 2019). In simple terms, corporate sustainability performance is identified as the triple bottom line that includes economic, environmental, and social sustainability performance (Albertini, 2013; Alireza et al., 2014; Amin et al., 2019; Annunziata et al., 2018; Bodhanwala & Bodhanwala, 2018; Dyllick & Hockerts, 2002; Elkington, 1998; Gomes et al., 2015; Mdolo et al., 2018; Muhammad Kashif et al., 2019; Nguyen et al., 2018).

Past studies advocated that corporate sustainability lies at the intersection of economic, environmental, and social performance (Carter & Rogers, 2008; Seth et al., 2016) with respect to the concept of the triple bottom line (Elkington, 1998). As explained by Artiach et al. (2010), corporate sustainability performance measures the extent to which an organisation embraces governance, social, environmental, and economic factors into its operations and their impact on the organisation and society ultimately. Corporate sustainability entails cooperation concerning the current and upcoming economic, social, and environmental needs of an organisation's stakeholders (Liern & Pérez-Gladish, 2018). Through the corporate sustainability performance, an organisation gains competitive advantages to increase its efficiency, revenues, and savings, which place the position of the organisation better than its competitors (DesJardins, 2007). For the organisations, it is a challenge to simultaneously improve the social and human welfare while reducing the environmental impact and ensuring effective achievement of the organisational objectives (Sharma, 2003). Figure 2.2 illustrates the three components of corporate sustainability performance.

Figure 2.2 Corporate Sustainability Performance

Corporate sustainability performance can also be seen as a survival strategy for an organisation (Hu & Yusuf, 2015; Lloret, 2016). In its simplest form, the corporate sustainability performance entails business continuity but overlook other constituents in play at times, such as the environment and society (Mdolo et al., 2018). In practice, sustainability can be implemented by managing economic, natural, and social capital (Dyllick & Hockerts, 2002). Firstly, economic capital refers to the amount of financial, tangible, and intangible capital that an organisation needs to stay solvent (Stewart, 1999). Natural capital consists of natural resources and ecosystem services (Hawken et al., 1999; Heal, 2007). Meanwhile, social capital consists of human capital, such as employees and business partners as well as societal capital (e.g. public services) (Putnam, 2001). Ideally, a sustainable organisation maintains and increases all forms of capital. Table 2.9 presents the definition of each dimension of corporate sustainability performance.

Table 2.9 Definitions of the Triple Bottom Line of Corporate Sustainability Performance

Dimension	Definition
Economic Sustainability Performance	Refers to achieving economic prosperity, profit-making, attaining competitive advantage, and sustaining the overall economic value of the business.
Environmental Sustainability	Includes factors relating to the environmental quality such as climate change, global warming, pollution, and depletion of the

Dimension	Definition
Performance	ozone layer.
Social Sustainability Performance	Includes issues related to social progress such as health and safety, community well-being, employment opportunities, charity, and organisational behaviour.

Source: Aras et al. (2018)

2.4.1 Economic Sustainability Performance

The main function of any business is to create shareholder value through economic sustainability performance (Brockett & Zabihollah, 2012). The ways the goods and services are produced and distributed with respect to the needs and desires (DesJardins, 2007) as well as how the organisations deal with their financial flow (Amin et al., 2019) are the main focus from an economic viewpoint. According to Orlitzky (2008), economic performance reflects the effects an organisation exhibits on its stakeholders' economic condition and the economic system at the domestic, national, or international levels. At the organisational level, economic performance reflects the impact of business on the stakeholders' economic condition and the economic system at the domestic level up to the international levels (Orlitzky, 2008). Aktin and Gergin (2016) highlighted the importance for an organisation to pay significant attention on economic sustainability in order to sustain in the market, as economic sustainability contributes to the satisfaction of stakeholders and the organisation itself.

The economic sustainability provides solutions and methods to protect the environment, conserve the natural resources, and sustain the society (Bae & Smardon, 2011). Through economic sustainability, the organisations are required to manage different types of economic capital, namely financial capital (e.g. equity and debt), tangible capital (e.g. machinery, land, and stocks), and intangible capital (e.g. reputation, invention, know-how, and organisational routine) (Dyllick & Hockerts, 2002). Economic performance reflects the ability of an organisation to cut down on costs at various points of consumption, including in the procurement of resources, energy consumption, proper waste management, and the fines incurred due to environmental accidents, apart from measuring the perceived growth in sales,

business volume, market share, and ability to earn the required profits (Chowdhury, 2014; Green Jr et al., 2012; Zhu et al., 2008).

2.4.2 Environmental Sustainability Performance

As one of the key components of sustainability, environmental issues, such as climate change, global warming, and energy issues, have been the leading focus of research over the past two decades and have become the main concern of numerous organisations today (Amin et al., 2019). The integration of environmental sustainability into the organisations' business strategies and models is necessary in order to effectively compete in the global market (Brockett & Zabihollah, 2012). Similar to other forms of capital, the environment delivers essential inputs into consumption and production, which can be viewed as natural capital (Hallegatte et al., 2011).

The International Organisation for Standardisation (ISO) defined environmental performance as how the environment is affected by the management of an organisation (The International Organisation for Standardisation [ISO], 1999) in terms of the quality of the living and non-living systems, including, land, air, and water. Pero et al. (2017) indicated the link between environmental sustainability and the quality of the environment on a long term-basis. Examples of green practices at the organisational level include recycling programmes, reduction of carbon emission programmes and waste management programmes (Nor Azah et al., 2018).

The environmental dimension of corporate sustainability is often achieved through green supply chain management by managing the energy consumption and non-renewable resources, minimising the production of manufacturing waste, and applying safe and legal disposal practices (Aktin & Gergin, 2016). Environmental performance reflects the ability of the organisations to reduce water pollution, air pollution, and soil pollution; the capability of the organisations to execute proper waste management and avoid or reduce the use of hazardous and/or toxic materials; the capacity to implement any improvements in terms of reduction in the frequency of environmental accidents and achievement in energy savings (Chowdhury, 2014; Rao, 2002; Zhu et al., 2008; Zhu et al., 2012).

There are four key segments of environmental performance, which are energy use, non-product output, pollutant release, and material use (Ranganathan, 1998). Environmental policies should improve socio-economic efficiency and social welfare, especially when it comes to environmental pollution (Pye et al., 2008). It is a challenge for sustainable business management to pursue profits in ways that contribute to environmental sustainability (DesJardins, 2007). Thus, in order to effectively compete in the global market, organisations worldwide should respond to the environmental challenges and transform these challenges into opportunities to change their environmental management, policies, and practices in order to safeguard the global environment and improve related organisational performance (Brockett & Zabihollah, 2012).

2.4.3 Social Sustainability Performance

The social dimension of corporate sustainability is related to the idea of maintaining or improving the current social welfare for future generations (Aktin & Gergin, 2016). Basically, social performance or the social bottom line is realising an organisation's social mission with respect to the interests of society by adding accepted social values and fulfilling social responsibility (Brockett & Zabihollah, 2012). The social performance involves measuring the impact of business behaviour on society (Clarkson, 1995; Tsoi, 2010).

Socially responsible organisations would integrate their operational activities and social, ethical, and environmental concerns beyond those required by laws, which potentially result in improved life quality for most of the stakeholders (Amin et al., 2019). Social performance generally measures the well-being of employees in terms of whether they, at least, enjoy the minimum wages and work benefits (e.g. medical benefits, annual leave, clean drinking water, and safe workplace) under the Labour Laws and whether they are subjected to any ill-treatment, harassment, or abuse at the workplace (Bansal, 2005; Chowdhury, 2014; Tsoi, 2010). In terms of human capital, good practices such as providing and maintaining a safe working environment, welfare of employees, benefits and compensation, and training and development represent social sustainability (Aktin & Gergin, 2016).

The social performance involves three components, which are the identification of an organisation's social responsibility domains, development of processes to evaluate the demands of stakeholders, and implementation of programmes to manage social issues (Carroll, 1979). Social performance measures how well an organisation translates its social goals into practice in terms of the principles, actions, and corrective measures implemented (Brockett & Zabihollah, 2012). Cooper (2004) highlighted the link between the corporate performance and social performance in terms of the operation of an organisation. The social effects of products, occupation, moral sourcing, and community relations are the four key segments in social performance (Ranganathan, 1998).

The obligations to respond effectively to the social issues and other issues of the stakeholders in social obligations are through the integration of social considerations in strategic decisions, activities, and operations that go beyond the regulatory requirements and philanthropic activities (Brockett & Zabihollah, 2012). Some of the examples of social issues that can be taken into consideration include working conditions, non-discrimination, freedom of association and collective bargaining, and health and safety at the workplace (Javillier, 2003).

Social capital development, community engagement, and engaging communication that aims to be inclusive are some of the suggested core ingredients for the sustainability of the organisations (Joy & Shields, 2013). According to Nicolăescu et al. (2015), as a foundation for sustainable business patterns, the organisations can establish long-term trust with the employees, consumers, and relevant individuals by focusing on their social responsibility. The development of social capital is critical for the sustainability of the business of the organisations. This includes the connections, network, and relationships that the organisations cultivate, which are important to their internal and external operations (Joy & Shields, 2013).

2.5 Differences between Corporate Sustainability Performance and Firm Performance

Firm performance is defined as the results achieved by the firm in relation to its internal and external set goals (Njeri, 2017). This is basically measured in terms of

both the financial and non-financial aspects of the business (Zehir et al., 2015). Financial measures comprise of economic and profitability aspects such as return on investment (ROI), working capital ratio, gross profit margin, and net profit after tax whilst non-financial measures include operational factors such as productivity, growth, market share, and customer satisfaction (Njeri, 2017).

Meanwhile, corporate sustainability performance is identified as the triple bottom line that includes economic, environmental, and social sustainability performance (Albertini, 2013; Alireza et al., 2014; Amin et al., 2019; Annunziata et al., 2018; Bodhanwala & Bodhanwala, 2018; Dyllick & Hockerts, 2002; Elkington, 1998; Gomes et al., 2015; Mdolo et al., 2018; Muhammad Kashif et al., 2019; Nguyen et al., 2018). Amin et al. (2019) defined sustainability in the business field as the process by which the organisations manage their economic, environmental, and social business risks as well as their obligations and opportunities. Thus, differences between firm performance and corporate sustainability performance is corporate sustainability performance covers the performance of the triple bottom line which are social sustainability performance, economic sustainability performance, and environmental sustainability performance holistically.

2.6 Green Practices

At the end of the 20th century, the notion of "green business" emerged in the wake of the increasing public concern on the sustainability of economic development (Linas et al., 2014). There is a growing awareness of environmental issues, such as the deterioration of environmental quality and the rapid depletion of natural resources. In fact, the origin of the "green movement" can be traced back to the mid-1960s; it took more than two decades for businesses today to adapt and adopt the trends of greening into practice (Linas et al., 2014). In most cases, organisations that engage in green practices aim to acquire an improved image, attain enhanced financial performance, or achieve ease of doing business (Mdolo et al., 2018). Furthermore, studies have reached a consensus that green practices lead to improved performance (Singh & Trivedi, 2016; Wu et al., 2014).

Green business functions in a capacity where there is no negative impact made on the global or local environment as well as the economy and community (Ponzi, 2019). Brown and Ratledge (2011) defined green business as an establishment that produces green output. According to Linas et al. (2014), an organisation that is committed to the principles of environmental sustainability in its operations is known as a green business, where the organisation tries to minimise the negative environmental impact of its activities and strive to use renewable resources. Green businesses are leaner and more resilient than other equivalent businesses that are built on the over-consumption of scarce resources, lax attitude to waste, and excess use of energy (Ponzi, 2019). The organisations today can no longer overlook the significance of green practices, as "green" is the new lean with the gradual paradigm shift towards green and sustainability (Dües et al., 2013). Hilmola (2018) identified green and sustainability as the leading fields, even in the case of supply chain management.

Being an economically sustainable business brings huge challenges, but there are also valuable opportunities (Mikušová, 2017). There are many highly successful businesses that find a niche for themselves in the new markets, from energy efficiency to rethinking traditional building materials. These organisations have invested heavily in green products or initiatives. They are typically more efficient and cost-effective than carbon-intensive alternatives. The challenge for a business to be economically sustainable is to identify those opportunities, which can be a personal challenge. It needs to be an intrinsic part of the day-to-day practices for the business to achieve economic sustainability (Mikušová, 2017). The issues of climate change are taken seriously by innovative and motivated organisations.

The substance of the concept of "green business" is rather ambiguous due to the various definitions of green business across different sources (Linas et al., 2014). Green practices are still far from being universally embraced and implemented due to the perception of being green gives extra burden in terms of the loss of revenue or increase in cost (Linas et al., 2014). It is a multifaceted process of becoming green, as there are many different practices for the organisations can implement when they shift to green behaviours (Linas et al., 2014). The green guide for business practices includes considering the carbon footprint, energy use in buildings, larger-scale changes to buildings, travel and transport, and reduce, reuse, and recycling (Goodall,

2010). Organisations should also consider the application of recovery, reduction, reuse, and recycle (4Rs) (Kassaye, 2001). Through several practices, these "Rs" can be achieved; some might serve the purpose of more than one "R".

Organisations can incorporate green concepts into their processes and products to improve its resource efficiency, minimise waste, and increase resource recovery for enhanced performance and sustainability (Lin et al., 2019). Examples of the commonly employed non-exhaustive green business practices are green packaging, the use of natural ingredients or products, reduction of power waste, eco-labelling, green buildings, eco-cleaning, less printing, the use of public transportation, switching off the electronic applications when not in use, waste sorting, no smoking, and "green business" seminars (Linas et al., 2014). As revealed in the book "Green to Gold" by Dan Esty and Andrew Winston, some of the largest businesses, such as DuPont and 3M, managed to save billions of dollars by making themselves more resource-efficient; those savings were deemed large enough that their businesses can be profitable (Esty & Winston, 2009). Evidently, the integration of green practices at the workplace is beneficial for various organisations.

Various internal and external stakeholders have called for more green products and practices (Muhammed Ali & Hsuan, 2017). In order to address the pressing concerns and to mitigate the environmental and socio-economic issues, the organisations in the manufacturing sector have taken the initiatives to integrate and implement green practices in their supply chains (Foo et al., 2018). Green practices act as a resounding response to provide reasonable assurance to the environmentally-conscious stakeholders (Adebanjo et al., 2016; Scur & Barbosa, 2017). An organisation that actively incorporate sound green practices in the supply chain and as part of the organisational culture (through environmentally friendly products, processes, systems, and technologies) can project and enjoy a positive image (Vachon & Klassen, 2006; Vanalle et al., 2017). Table 2.10 presents the attributes of green practices.

Table 2.10 Attributes of Green Practices

Attributes	Explanation
Valuable	Green practices contribute to competitive performance.
Rare	Green practices are relatively new, as most organisations have just started to implement green practices.
Inimitable	Green practices are difficult to imitate because it requires fundamental rethinking within the organisation based on tacit knowledge for the effective implementation of products, product design, investment in manufacturing assets, processes, materials, sourcing, life cycle cost management, total cost of ownership, and supplier management.
Non-substitutable	Green practices are non-substitutable since the same effect, such as recyclability, cannot be gained from other resources.

Source: Schoenherr (2012)

The Malaysian government is committed to developing a clean and efficient economy, specifically a "green" economy, by encouraging the development of green businesses and green products, resulting in the creation of green jobs (Hussin et al., 2017). According to Hussin et al. (2017), the high level of awareness of green practices (98%) found among the Malaysian organisations in the study demonstrated a promising state of this country towards attaining a green economy. In particular, the majority of the respondents in the study defined green economy as energy conservation or renewable sources of energy; 35% of them viewed green economy as the economy that reduces environmental impacts; 26% of them defined green economy as an economy based on sustainable activities (Hussin et al., 2017).

The Malaysian government aims to achieve efficient waste management through guidelines on effective enforcement and use of resources. For instance, initiatives of transforming wastes to resources through 3Rs to generate power (Eleventh Malaysia Plan, 2015). Through waste minimisation, achieving Vision 2020 of attaining a low carbon economy can be realised. Under the Eleventh Malaysia Plan (2015), green practices promote economic growth without compromising the environment or jeopardising the needs of the future generations, which means efficient use of natural resources, minimising the use of hazardous substances, and reducing pollution and waste throughout the life cycle of products and services. Through the six dimensions

of green practices (i.e. waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles), manufacturers are prompted to adopt green practices to reduce their environmental impact and ensure resource efficiency at both production and consumption phases (Eleventh Malaysia Plan, 2015).

In the context of manufacturing in Malaysia, Yacob et al. (2018) defined green practices as practices throughout the manufacturing process that do not negatively affect the environment. Some of the green practices in business include considering the suppliers and those who are involved with the business, the use of materials, waste stream, and the need to minimise the negative impact on the consumers and other businesses in regards to the environmental impacts, challenges, and successes (Bocken et al., 2014). Sustainable green practices embrace the use of eco-friendly design, raw materials, packaging, distribution, and reuse or retreatment after the useful life of a product (Yacob et al., 2018).

The adoption of green practices, especially in the manufacturing sector in Malaysia, is very important as these practices integrate the economic, environmental, and social sustainability aspects (Khairul, 2017). Studies have also highlighted the importance of green practices towards corporate sustainability performance. For instance, Yacob et al. (2018) highlighted the contribution of implementing green practices towards the economic and environmental sustainability of an organisation. Broadly, sustainable green practices and their outcomes have been addressed from various perspectives, ranging from the application of green technologies as a means to gain competitive advantage (Leonidou et al., 2013) to the perception of environmental regulations as a driver for innovation (Hillary, 2000), improvement of the competitive position (e.g. in competing with the competitors by being ahead of the competitors) (Marchi et al., 2013; Porter & van der Linde, 1995), cost reduction and quality improvement in the long run (Cordano et al., 2010), lower carbon footprint and delivery time in supply chain distribution network (Bortolini et al., 2016), and build respectable international reputation (Yacob et al., 2018).

However, economically, the implementation of green practices in the manufacturing sector in Malaysia is implemented only at certain levels considering that many

industries in Malaysia were found to have yet implemented certain practices because these practices were deemed irrelevant (Mohamad Ghozali et al., 2015). Roaimah and Samuel (2011) reported that the implementation of green practices in the manufacturing sector in Malaysia was mainly based on ethical obligations with respect to the requirements of the regulations. According to the study by Hussin et al. (2017), most of the sampled organisations invested in improving energy use because they believed in the significance of doing so whereas other organisations invested only because they were required by the law.

However, certain organisations in Malaysia successfully implemented green practices to achieve corporate sustainability performance. According to Malaysia Productivity Corporation [MPC] (2010), there were four organisations in Malaysia that participated in the sustainable development and green practices, specifically Panasonic Malaysia, GE Malaysia, GreenTech Malaysia (GTM), and Toyota Malaysia. The initiative research of sustainable development in Malaysia was found to enhance the awareness and knowledge on the green practices that can reduce the negative impact of the manufacturing operations on the environment (Khairul, 2017). Khairul (2017) further highlighted that the manufacturing operations are energy-demanding and responsible for creating pollutants; thus, it is inevitable that the Malaysian government has emphasised the importance of this manufacturing sector to implement green practices towards achieving corporate sustainability performance under the Eleventh Malaysia Plan (2016-2020).

As previously described, there are six dimensions of green practices, which are waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles (Aktin & Gergin, 2016; Chan, 2013; Khairul Naim et al., 2013; Kirama & Mayo, 2016; Kulkarni et al., 2014; Lin et al., 2013; Majerovaa, 2015; Maletic et al., 2014; Nadanyiova et al., 2015; Wan & Toppinen, 2016). These six dimensions of green practices are discussed in the following subsections.

2.6.1 Waste Management

Waste refers to any substance or product that has no value or further use for an individual or organisation that owns it or being discarded. Waste excludes substances or products that are sold or reused by the organisations that own it (Australian Government Productivity Commission, 2006). Meanwhile, the term "waste management" usually relates to all types of waste. According to the United Nations (1997), waste management refers to actions and activities that are required to manage waste from its inception to its final disposal. Waste management can be linked to the products generated during the processing of raw materials into final products and intermediate products, the consumption of final products, the extraction of raw materials, or other human activities (United Nations, 1997).

Governments should emphasise refining regulations, strengthening supervision and controlling illegal dumping, and improving stakeholders' awareness (Ding et al., 2016). High productivity indicates high income but excessive production of waste due to the increase in consumption aggravates waste management issues (Ropke, 1999). In Malaysia, the generation of waste occurs at an alarming rate, faster than the natural degradation process, while the consumption of resources exceeds the rate of these materials being replaced (Ramayah et al., 2010).

2.6.2 Sustainable Design

Sustainable design refers to the environmentally-conscious design, environmentally sustainable design, and green design (McLennan, 2004). Design for sustainability can be referred to as sustainable product design, which is a globally recognised method for various organisations to improve profit margins, social benefits, performance of the environment, market opportunities, and product quality. Improving the efficiency in the services and products designed and produced can create a win-win situation for the organisations, consumers, stakeholders, and the public (UNEP, 2016).

The philosophy of designing physical objects, the services to comply with the principles of economic, environmental, and social sustainability, and the built

environment is defined as sustainable design (McLennan, 2004). The first step to sustainable design for an organisation that designs a particular product with respect to the sustainability principles involves considering its life cycle and eco-design impact (Donato, 2020). Besides that, the organisation needs to minimise the most significant environmental impact identified from the analysis. For example, buildings that are designed to be energy efficient, with bright, airy, and well-ventilated space, would decrease costs and improve efficiency in the long term (DesJardins, 2007). Being part of the environmental management measures, eco-design focuses on green themes and at the same time, designing and developing prototypes of products such as restricting or banning the use of hazardous or banned chemicals or materials during the initial design stage (Pigosso et al., 2013). For example, Kyocera, which is one of the Japanese manufacturers for printers, designs printers with fewer components for replacement, resulting in relatively lower costs (Gordon, 2001). Organisations can gain superior financial performance when they make use of their strengths in green practices, such as by improving the green product design (Ong et al., 2019). Thus, organisations are driven to be in a better position in the scale of sustainability by cooperating and collaborating closely with consumers for eco-design (Ali et al., 2013; Green Jr et al., 2012).

2.6.3 Eco-Labelling

Green labels are guides to green products (Nik Ramli, 2009). The term "environmentally friendly" is a classification of eco-friendly and environmentally friendly capacities of a product (Nik Ramli, 2009). Vitalis (2002) stated that these are the products that have the long-term goal of natural preservation with low detrimental environmental impact at all stages of their life cycle. Vitalis (2002) described green products or environmentally friendly products as products that have green labels. Certified green labels are primarily called eco-labels (Nik Ramli, 2009). The purpose of such label is to guide consumers to purchase green, non-allergenic, or healthier products (Vitalis, 2002). The green label guides consumers to the greenest products in a given category. It is more difficult for consumers to recognise these green products without this specific label. Therefore, the easiest way to go green in purchasing is to search for these green labels (Nik Ramli, 2009). These green products are biodegradable; contain non-toxic chemicals; and recyclable and

reusable. According to the Performance Management and Management Unit [PEMANDU] (2010), the Malaysian government targeted for 50% of goods and services to acquire a green label across ministries by 2020 (PEMANDU, 2010).

2.6.4 Sustainable Procurement

UNEP (2015) defined sustainable procurement as a process whereby organisations meet their needs for goods, services, works, and utilities in a way that achieves value for money based on the whole life cycle basis in terms of generating benefits, not only to the organisations, but also to the economy and society, and minimising the damage to the environment. UNEP further described sustainable procurement as sustainable procurement practices that integrate requirements, specifications, and criteria that are compatible and in favour of the protection of the environment, social progress, and economic development through resource efficiency, improved quality of products and services, and ultimately, cost optimisation (UNEP, 2011). Basically, sustainable procurement is based on the belief that organisations can simultaneously benefit from all three elements of sustainability, specifically economics, environment, and society (Bobis & Staniszewski, 2009).

Sustainable procurement must be seen as an essential strategic dimension that provides value and environmental benefits, improves the brand images, achieves better economics for the organisations, and should be treated as a vehicle for cutting cost (Bobis & Staniszewski, 2009). Sustainable procurement collectively benefits the economics, environment, and economics of the organisations (Bobis & Stanizewski, 2009). The solutions of innovative procurement also benefit the society and the private and public sectors (Caloghirou et al., 2016). Such benefits include improved public services, an organisation's competitiveness in the future market, addressing the current societal challenges, and stimulation of knowledge-intensive entrepreneurship (Lember et al., 2010; Timmermans & Zabala-Iturriagagoitia, 2013). The economic, environmental, and social elements in every procurement decision can be addressed using a holistic approach that benefits the whole organisation (Bobis & Staniszewski, 2009).

2.6.5 Sustainable Marketing

There are numerous ways to define green marketing that has been widely recognised as a broad concept in the scientific community (Abdullah et al., 2016). Fuller (1999) defined sustainable marketing as a process of planning, implementing, and controlling the development, pricing, promotion, and product distribution that satisfy the consumers' needs and organisational goals and assure ecosystem compatibility. The marketing of green products is defined as green marketing (Banerjee, 2013). Being green and pro-environment and the adoption of eco-marketing are part of the approaches that constitute the ecological and social aspects of marketing in a wide marketing environment (Belz & Peattie, 2009).

With the support of the relevant agencies and ministries, the Ministry of Energy, Green Technology and Water (Kementerian Tenaga, Teknologi Hijau dan Air [KeTTHA]) in Malaysia promoted the development of a domestic market for green products and services (Eleventh Malaysia Plan, 2015). According to Saxena and Khandewal (2012), organisations that practice the philosophy of green marketing would experience sustainable development and gain sustainable consumption and competitive advantage at the marketplace. Responsible marketing, environmental marketing, and ecological marketing are some of the different terms of green marketing defined by scholars (Polonsky, 2011). The integration of environmental issues into strategic marketing process is important for the organisations to achieve competitive advantage (Handelman & Arnold, 1999; Sharma et al., 2010) and enhance their reputation (Menon & Menon, 1997; Shrivastava, 1995; Sisodia et al., 2007). With the continuous development of the global market, the pillars of sustainability, which are economic, environmental, and social justice, have become increasingly important as part of the decision-making process (Drumwright, 1994; Hart, 1995; Huang & Rust, 2011; Shrivastava, 1995).

According to Taylor et al. (2013), various types of organisations, such as those in the manufacturing sector, reportedly experienced higher profitability after adopting green philosophies. Most of the developed countries express concern about the deterioration of the environment (Ramayah et al., 2010). However, studies on the strategy of sustainability marketing have remained scarce (Kumar et al., 2013; Tiwari

et al., 2011). The involvement of green marketing is crucial (Zuhairah & Noor Azman, 2015) given the important role of marketing in improving the performance of an organisation (Chabowski et al., 2011; Muhammad Usman et al., 2014). Marketing can have significant implications on the allocation of resources within an organisation and the decision-making process that creates value for the organisation (Nath et al., 2010).

2.6.6 Sustainable Lifestyles

Backhaus et al. (2012) defined lifestyle as what we do and have when it comes to all related material objects or systems, social conversations, actions (behaviours), and non-deliberative and deliberate choices, which distinguish or associate from others. According to Ropke (2009), lifestyles are related to one's behaviour and all the related infrastructures, objects, and products and one's ways of doing, having, displaying, and using. Lifestyles are linked to the consumption of goods and services, which influences the resources and material flows. In other words, lifestyles drive the pattern and level of consumption.

There is no commonly agreed definition of sustainable lifestyles (Backhaus et al., 2012). Thidell (2015) defined sustainable lifestyles as patterns of action and consumption used by people to affiliate and differentiate themselves from others, which meet the basic needs, provide a better quality of life, minimise the use of natural resources and emission of waste and pollutants throughout the life cycle, and do not jeopardise the needs of future generations—this particular definition is arguably the most widely cited definition of sustainable lifestyles (Backhaus et al., 2012). Sustainable lifestyles are basically ways of living that allow the society to meet their aspirations and personal needs while allowing the future and current generations to do the same (Backhaus et al., 2012). In other words, sustainable lifestyles simultaneously minimise the emission of wastes and pollutants, reduce the consumption of natural resources, and ensure equal access to health, education, and other services. According to Mont (2007), the desires and personal needs of the society as well as their specific environment influence the availability of sustainable options since lifestyles reflect the social heritage, nature, culture, and economy of the society. It is necessary to drive effective stimulation of more sustainable (resource-

efficient) lifestyles and sustainable production and consumption needs (Caiado et al., 2017).

2.7 Islamic Work Ethics

The beliefs and background of religion can affect the ethical understanding of people and ethics (Munir et al., 2009), which explain the practice of ethics and reflection of one's religious beliefs and thoughts in business and daily life (Salih et al., 2012). Since the 1980s, the concept of ethics has received significant attention in research (Abbas, 1988; Cherrington, 1980; Seyyed Hossein, 1984). The work ethics was previously defined as a dispositional variable that differs among individuals (Mohamed et al., 2014). Work ethics are important for any organisation to make profit, sustain, and function accordingly (Obaid, 2005).

Accordingly, the Islamic work ethics is deeply rooted in the sharia principles towards a specific work orientation (Mohamed et al., 2014; Rizk, 2008). Al-Quran and the sayings and practices of the Prophet Muhammad (S.A.W) are the main sources of Islamic work ethics (Abbas & Abdullah, 2008; Rice, 1999). From the Islamic perspective, ethics indicate good values in terms of feelings, behaviour, thoughts, or actions (Sharifah Hayaati, 2007). The outcomes of Iman (belief) in the Islamic context are noted as ethics (Md Zabid & Saadiatul, 2005). Most studies argued that, in the Islamic work ethics, the work itself is a desirable quality with respect to one's needs and represents an obligatory activity that strengthens the social and individual life (Abbas & Abdullah, 2008).

As explained by Abbas and Abdullah (2008), the Islamic work ethics is an orientation that shapes and influences the involvement and participation of believers at the workplace. The internalisation of the Islamic ethical practices strengthens qualities such as trust, loyalty, honesty, flexibility, and solidarity (Mohd Abdul et al., 2010). Besides that, Kumar and Raduan (2010) stated the implementation of Islamic work ethics generate positive attitude in terms of commitment, cooperation, dedication to work, hard work, and fair compositeness at the workplace. Some of the Islamic values that are directly highlighted in the Prophet's traditions include accountability, benevolence, capability, cleanliness, competence, cooperation,

consultation, honesty, fairness, perfectionism, piety, promise-keeping, punctuality, responsibility, timeliness, trustworthiness, and transparency (Abbas & Weir, 2005; Kalsom & Ahmad, 2014).

Islam provides a sound and complete ethical system for every aspect of life (Hafiz Muhammad et al., 2015). Islam, as a complete way of life, provides efficient ethical solutions to mitigate the environmental crisis (Mohd Yaseen, 2014). The Islamic work ethics focuses on the relations between mankind and their Creator and the environment (Nor 'Azzah et al., 2014). The Islamic view of nature is based on the belief that everything in the universe is created by God (Mohd Yaseen, 2014). As declared in the Al-Quran, nature is created by Allah (S.W.T). *There is no God but He, the Creator of all things* (Al-Quran, 6:102). In Islam, mankind should practice sustainable use of resources, such as water, land, forests, and minerals, which are the rights and privileges of all people and species (Mohd Yaseen, 2014). Therefore, in Islam, mankind should not abuse, misuse, or distort the natural resources, as each generation is entitled to benefit from these resources (Ali Mohamed, 2008; Bagader, 1994).

As stated by Hafiz Muhammad et al. (2015), Islam explicitly eliminates unfairness, misuse, inequity, and oppression. When it comes to the implementation of green practices, the Islamic work ethics must be applied to achieve corporate sustainability using the right measures and other positive attitudes. Fraud was highlighted in the Al-Quran (26:181-183). *"Give full measures, and don't be one of those who less (in weight and measure). And weight with a true and straight balance. Don't reduce the credit of the people and don't go around spreading mischief in the land".* As a caliph on earth, one must fulfil the trust placed on him by Allah (S.W.T) by acting justly in accordance with the Islamic laws (Lubis, 1998).

The Al-Quran further stated that, "*For He it is Who has made you Khalifa on earth, and has raised some of you by degrees above others, so that He might try you by means of what He has bestowed on you. And thereupon We made you their Khalifah on earth, so that We might behold how you act"* (Al-Quran, 6:165) and that, "*mischief has appeared on land and sea because of what the hands of men have done, that Allah (S.W.T) may give them a taste of some of their deeds, in order that*

they may turn back" (Al-Quran, 30:41). As indicated by Azila et al. (2016), "the taste of their deeds" is often in the form of environmental disasters and calamities.

Thus, we need to use our foresight, wisdom, and knowledge to guide how natural resources are used (Najma, 2012). In Islam, the available natural resources have to be used in a balanced manner with the consideration for the social and economic welfare of society, especially when it comes to conducting business activities (Azila et al., 2016; Hafiz Muhammad et al., 2015). Islam discourages the wastage of resources and luxurious ways of life (Hafiz Muhammad et al., 2015) and does not tolerate conspicuous consumption (Muhammad Umer, 1992).

As Lubis (1998) stated, this is further confirmed based on a part of a hadith, reported by Abu Sa'id Khudri, that Allah's messenger (S.A.W): "*The world is sweet and green (alluring) and verily Allah (S.W.T) has installed as caliphs in it in order to see how you act".* Allah (S.W.T) gives trusteeship to mankind for a limited span of time to examine whether the way of life is adopted according to Allah's instructions and the way of life of Prophet Muhammad (S.A.W) for every single moment in life (Hafiz Muhammad et al., 2015). The concepts of caliphs and trusteeship summarise the Islamic rationale for ecological ethics, since the environment, as an estate that belongs to Allah (S.W.T), is trusted to mankind (Atiya & Irshaad, 2004; Azila et al., 2016; Ziauddin, 2006). Table 2.11 shows the examples of the Islamic ethical principles in the business context according to the sources of Al-Quran and the sayings of Prophet Muhammad (S.A.W).

Table 2.11 Examples of Islamic Ethical Principles Relating to Business Practices

Islam Ethical Principles	Relevant Business Practices
"*No Arab has superiority over an Arab; no dark person has superiority over a white person and no white person has superiority over a dark person. The criterion of honour in the sight of God is righteousness and honest living*". Saying of Muhammad (S.A.W) (Sallam & Hanafy, 1998).	Equal opportunity and non-discriminatory behaviour in hiring, buying, and selling.

Islam Ethical Principles	Relevant Business Practices
"*O mankind! We created from you from a single (pair) of a male and female and made you into nations and tribes, that you may know each other…*" (Al-Quran, 49:13).	Teamwork and international business.
"*… man can have nothing but what he strives for…*" (Al-Quran, 53:39).	Rewards should be received only after expending efforts.
"*God likes that when someone does anything, it must be done perfectly well*". Saying of Muhammad (S.A.W) (Sallam & Hanafy, 1988).	Excellence and quality of work.
"*… say, 'O my Lord! Increase me in knowledge*" (Al-Quran, 20:111). "*The acquisition of knowledge is a duty incumbent on every Muslim, male and female*". Saying of Muhammad (S.A.W) (Sallam & Hanafy, 1988)	Importance of knowledge seeking, research and development, scientific activity, training programme, executive training, and technology transfer.
"*God does command you to render back your trusts to those to whom they are due…*" (Al-Quran, 4:58).	Fulfilling obligations and trust in business relationships at the workplace.
"*…wear your beautiful apparel at every time and place of prayer: eat and drink: but waste not by excess…*" (Al-Quran, 3:129).	It is acceptable to have wealth and to consume, but not to waste resources. Care for the environment.
"*…give just measure and weight, nor withhold from the people the things that are their due…*" (Al-Quran, 11:85).	Give full measure and weight.
"*… nor shall We (God) deprive them (of the fruit) of aught of their works: (yet) is each individual in pledge for his deeds*" (Al-Quran, 52:21).	Importance of individual responsibility.

Source: Rice (1999)

In today's competitive world, it is widely known that sustainability issues have become increasingly challenging due to the fast-paced globalisation, industrialisation (Fornasiero et al., 2016), and various environmental and socio-economic problems

that are caused by illegal, unethical, or irresponsible business operations in acquiring and sourcing for materials, manufacturing and logistics, disposal of products at the end of their life cycle, and waste management (Foo et al., 2018). According to Hohensee (2013), 3,000 of the world's largest corporations were estimated to contribute over USD 2 trillion of negative social and environmental externalities per year. The organisations in the manufacturing sector are of no exception (Sutherland et al., 2016).

Islam, as addin (way of life), outlines the value system established by Al-Quran and hadith in every aspect of life (Ahmad & Kalsom, 2013). The underlying principles of the Islamic values involve the well beings of human life and the environment (Ahmad & Kalsom, 2013). In Islam, the economic activities of an organisation are not only to achieve internal profit but also for the common welfare or in other words, social and economic justice (Asyraf Wajdi, 2011). From the Islamic perspective, socio-economic activities should be based on the principle of justice (Sayd et al., 2011; Zakaria Ali & Gao, 2011). Mankind serves as khalifah or representative of Allah (S.W.T); as caliph or leader in an organisation, all men are responsible to utilise all things that belong to Allah (S.W.T) and to utilise all facilities provided by Allah (S.W.T) to their best of ability for the creation of maximum added values for the organisation itself and for the entire community (Nur et al., 2019). In order to fulfil their role as a representative, they must cooperate and support one another, keep their promise, and be sincere and honest in their business affairs, creating a harmonious life at all levels in the society (Nur et al., 2019).

Therefore, ethics and morals are principles that serve as a better guide for the organisations to apply simultaneously in their business and social responsibilities (Muhammad Adnan et al., 2014). Islam forbids destroying or damaging the physical environment, as the act is considered harmful to the individuals and society (Nur et al., 2019). Therefore, organisations are not expected to finance activities that cause harm to the environment and organisations must provide funds to support environmental conservation projects (Nur et al., 2019) without affecting the welfare of the community (Abul & Sofyan Syafri, 2010). For examples, to improve environmental protection and promote energy-efficient projects or be active in

donating and other activities that aim to protect the environment (Abul & Sofyan Syafri, 2010).

Islamic economics aims to achieve the overall good deeds of maslahah (welfare) for everyone, including non-Muslims (Ahmad & Kalsom, 2013). The absence of Islamic practices at the organisational level leads to the poor organisational performance (Ahmad & Kalsom, 2013). Islamic business operations and management aim to achieve better performance and success, as ethical behaviours, such as honesty and justice, in all business processes must be strictly observed (Darwish, 2001). Most Muslims are aware of the benefits of Islamic concept and practices, but to what extent those practices influence their performance have not been widely explained (Ahmad & Kalsom, 2013).

The Islamic values in business management functions also contribute to the performance of an organisation (Ahmad & Kalsom, 2013). For every business, it is a need to understand the concept of Islamic entrepreneurship (to please the Almighty Allah (S.W.T) with a religious dimension along with its economic dimension, where Muslim entrepreneurs meet their economic needs, serve their communities, fulfil religious duties, and attain a state of well-being (falah). The activities of entrepreneurship by Prophet Muhammad (S.A.W), as a role model, should be followed by all individuals—good individuals can be shaped and consequently, raise the economic prosperity of society (Ahmad & Kalsom, 2013). The trading and business activities that follow the Islamic ways of life are far from fraud actions or any unethical transaction which harm the individual and its institution (Jawed Akhtar, 2013). Table 2.12 presents the example of the Islamic perspective on sustainability.

Table 2.12 Examples of Islamic Perspectives on Sustainability

Dimensions of Sustainability	**Al-Quran Verses and Hadith**
Social Sustainability	"*I have made oppression unlawful for myself and for you, so do not commit oppression against one another*" Sahih Muslim, vol. 3, hadith no. 6254.

Dimensions of Sustainability	Al-Quran Verses and Hadith
	"*Help your brother whether he is the oppressor or the oppressed. If he is an oppressor, prevent him from doing it, for that will be helping him, and if he is oppressed he should be helped (against the oppressor)*" Sahih Muslim, vol. 3, hadith no. 6246. "*Your employees are your brethren over whom Allah (S.W.T) has given you authority. So if one of you has his brother under his control, you should feed him with the like of what you eat and clothe him with the like of what you wear. You should not overburden him with the like of what you eat and clothe him with the like what you wear. You should not overburden him with what he cannot bear, and if you do so, help him in his job*" Sahih Muslim vol. 3, hadith no. 4093. "*Every Muslim must pay sadaqah (charity)*". *A companion asked,* "*What about someone who has nothing to give?*" *The Prophet replied,* "*Then let him do something with his two hands and benefit himself. That will be charity.*" *A companion asked,* "*But what if he cannot do that?*" *The Prophet replied,* "*Then he can help someone who is needy*". *They asked,* "*What if he cannot do even that?*" *The Prophet replied,* "*Then he should enjoin the doing of good*". *Still again they asked,* "*But what if he cannot do that?*" *The Prophet replied,* "*Then he should refrain from evil, for that is a form of charity*". Al-Bukhari's al-Adab al-Mufrad, hadith no. 225.
Environmental Sustainability	"*And when he turns away, he strives throughout the land to cause destruction therein and destroy crops and animals. And Allah (S.W.T) does not like mischievous acts"* (Al-Quran 2:205). "*And do no mischief on the earth after it has been set in order, but call on Him with fear and aspiration. Indeed the mercy of Allah (S.W.T) is near to the doers of good*" (Al-Quran 7:56).

Source: Nur et al. (2019)

Thus, the Islamic work ethics can be summarised as good characters applied in work life, which was eventually shaped as a successful practising of the teachings of Al-Quran and the sayings and practices of Prophet Muhammad (S.A.W). The Islamic

work ethics is important for the implementation of green practices towards achieving corporate sustainability performance, as Islam enhances the protection of the environment, social, and economy (Rice, 1999).

2.7.1 Islamic Work Ethics as Organisational Ethics

Studies on business ethics and organisational justice have advocated the critical role of morality-based motives in the actions taken by the supply chain organisations (Aguilera et al., 2007; Carroll, 1991) and that a deeply human institution is embedded in every aspect of value creation with moral complexity (Fernando & Almeida, 2012). Moral motives for corporate sustainability are anchored based on the theoretical notion that a business has an ethical duty to make positive contribution to the society and create a better world for the future accordingly (Bronn & Vidaver-Cohen, 2009; Hahn & Scheermesser, 2006). When organisations learn good habits of character (e.g. responsible for the environment), they are likely to incorporate such virtues into their practices (Paulraj et al., 2017).

Studies have proposed different kinds of virtues for an organisation (Kaptein, 2017). A business should display the virtues of community, excellence, holism, integrity, judgment, and role identity (Solomon, 1992). Moore (2015) proposed eight corporate virtues, which include temperance, courage, and zeal. A longer list of virtuous business organisations includes courage, truthfulness (MacIntyre, 1985), integrity, and constancy (MacIntyre, 1999), which refers to their consistent application across practices over time (Moore & Beadle, 2006). According to MacIntyre (1985), the ability to retain its integrity in practice depends on the way in which the virtues can be and are exercised to sustain the institutional forms that reflect the social bearers of the practice.

The Islamic work ethics particularly emphasises the importance of one's involvement in the community and society and the obligations of an organisation towards its employees (Ismael, 2003). Studies on work ethics and its link with individual and organisational factors have received significant attention in the literature (Abbas & Abdullah, 2008; Abbas & Weir, 2005; Darwish 2001). The effect of work ethics that highlighted the attitude and behaviour of individuals in working

for the success of the organisation has been widely acknowledged (Olanrewaju et al., 2018). Various studies have emphasised the importance of the Islamic work ethics in designing, formulating, and implementing any change programme in an organisation (Darwish, 2000), which has highlighted the possible linkage between the Islamic work ethics and organisational performance (Abdus Sattar, Ghulam Mustafa, et al., 2012; Muhammad Yousuf et al., 2013).

Past studies reported evidence that proved the significant relationship between the Islamic work ethics and organisational outcomes (Adeel Sabir & Farrukh, 2015; Siti Khadijah et al., 2013; Usman et al., 2015). The growing interest in this field may be attributed to the belief that the work ethics facilitate the employees' behaviour and their job. Studies have specified that both individual and organisation can benefit immensely when the former exhibits a positive attitude by truthfully adhering to the Islamic work ethics (Abbas & Weir, 2005). Muhammad Yousof et al. (2012) further suggested that the Islamic work ethics can be examined through the organisational performance.

In addition, studies have also highlighted the various issues of ethics faced by numerous organisations that operate in the current business milieu, which affect their performance and threaten the sustainability of their business (Muhammad Yousuf et al., 2012; Siti Khadijah et al., 2013). This has propelled the organisations to be more concerned and focused on establishing viable corporate code of ethics in order to accomplish their goals more effectively (Muhammad Yousuf et al., 2012). Hence, the incorporation of the Islamic work ethics into organisational practices is suggested with the emphasis on its vital role as an organisational guideline for improved management practices towards achieving sustainable success and quality (Saeed Hameed, 2016). Thus, instilling the values of Islamic ethics is deemed crucial for organisational efficiency and quality (Olanrewaju et al., 2018).

Hence, the Islamic work ethics in the current study was viewed as organisational ethics. It is deemed plausible for organisations to act ethically (Duchon & Drake, 2009). As a part of corporate life, ethics can be obscured or marginalised (Roberts, 2001) by the character of the organisation itself (Duchon & Drake, 2009). Organisations have identities to be distinguishable with names, occupy physical

space, and are accorded with legal rights (Duchon & Drake, 2009). Whetten (2006) defined organisational identity as the key and enduring attributes of an organisation that distinguish it from other organisations. Thus, incorporating Islamic work ethics as organisational ethics would distinguish an organisation from other organisations, resulting in competitive advantage.

2.7.2 Differences between Islamic Work Ethics and Conventional Work Ethics

Conventional work ethics (CWE) derived from the values practice in the business, organisation, workplace and the society as a whole (Khatijah, 2016). Beckett and Maynard (2013) described values on the notion of preference or choice over something important. They further opined that no value is better than another, but different culture uses different sets of criteria due to different circumstances and different traditions (Khadijah, 2016). Islamic work ethics is different from what conventional meant and it is found that workplace quality can be built with the essence of Islamic ethics which contain the spirits, understandings and practices of struggle and responsibility, knowledge development, excellence at work, justice, truthfulness, and trustworthiness (Khatijah, 2016). Ethics according to western sociologists is relatively dependent on individual perspective in order to determine what is good or bad and right or wrong (Shukri & Musa Yusuf, 2012). Meanwhile, Muhammad (2007) further elaborated that the concept of right and wrong in Islam, do not change from case to case or from time to time but retain their validity for all times in all conditions. Contrariwise, the concept of right and wrong established by human thoughts that being practiced in conventional work ethics is essentially subjective and strongly influence by time and environment (Khatijah, 2016).

In this regards many Muslim scholars are aware of the current state of work ethics and this realization has been postulated amongst those are by Abbas (1988), Rafik Issa (1997), Rice (1999), Abbas and Abdullah (2008) and others that most studies on business ethics in general and the work ethic in particular, have been based on the experiences of Western concept and understanding. Within an Islamic context, the term most closely related to ethics in the Quran is khuluq. At the same time there are many other Arabic (Islamic) terminology that are interchangeably used in the Quran, to describe the concepts of morals or positive values that are directly and indirectly

related to the ethics or khuluq: such as khayr (goodness), birr (righteousness), qist (equity), ‘adl (equilibrium and justice), haqq (truth and right), ma’ruf (known, approved), and taqwa (piety) (Rafik Issa, 1997). Islam therefore has its own concept of work ethics that is derived from the Quran and sunnah and hadith of the prophet Muhammad (S.A.W) (Abbas, 1988; Rafik Issa, 1997; Rice, 1999; Rafik Issa & Jamal, 2005; Muhammad, 2007; Wahibur, 2010). In actual fact, many verses of the Quran speak about justice and honesty in trade, courtesy and fairness in employment relationships, and also encourage humans to learn new skills and to strive to do good work that benefits both the individual and the community (Mohamed & Pollard, 2010).

It has been beautifully summarized by Abbas and Abdullah (2008) that, in Islam, work is viewed not as an end itself, but as a means to foster personal growth and social relations. Unlike conventional work ethics, Islamic work ethics emphasizes more on intention rather than the result. Abbas (1988) noted that, in the opposite to Christianity or Protestant, Islam views that man’s economic activities as an obligation. The Quran forbade lying, stealing, adultery, and murder, and every act that would remove righteousness and bring evil, whether it benefits the perpetrator or not, it is forbidden in Islam (Riham Ragab, 2008). The reason is, in Islam, all economic activities and business dealing, (Rice, 1999), the goals are not primarily a materialist.

As stressed by Rafik Issa and Jamal (2005), Islam recognizes the fact that the organisation has the right to make a profit but not at the expense of the claims of various other stakeholders. The Islamic ethical characteristics at the very least must contain the principles of struggle and responsibility, knowledge development and knowhow, excellent at work, justice, trust and truthfulness, honesty, and amanah (Khatijah, 2016). Conventional work ethics emphasized that no sets of ethics is better than others, and different culture use a different set of criteria due to differences of circumstances and tradition meanwhile on contradict the Islamic work ethics fixes only one standard criteria on which that characteristic persistently obtained from the commandment of Al-Quran and hadith (Khatijah, 2016). As stated by Khatijah (2016), Islamic work ethics is applicable to all people, all races, all time, to all boundary, circumstances and traditions.

2.8 Organisation Size

This section discusses a potential moderator in the relationship between green practices and the corporate sustainability performance in this study, specifically organisation size. Organisation size refers to the number of employees in an organisation (Azimah Ainuddin et al., 2007; Ling et al., 2007; Mohd Khairuddin & Mustafa, 2007; Morgan et al., 2004; Yoon & Suh, 2018). Studies have acknowledged certain structural characteristics of organisations, such as organisation size, in assessing their performance (Yoon & Suh, 2018). Organisation size has been regarded as an important factor that affects various aspects of the structure of an organisation (Donaldson, 2001). According to Panda (2020), there are various definitions of firm size applied by organisations. Most of the common used definition of organisation size is the number of employees as the indicator of firm size while some use net asset, annual turnover and some even use the level of capital investment in plant and machinery as the determinant of firm size (Panda, 2020).

There are small (below 75 employees), medium (75 to 250 employees), and large (more than 250 employees) organisations in the Malaysian manufacturing sector (FMM, 2017). Organisations with varying sizes use different strategies, resulting in different corporate performance (Lin et al., 2019). Unlike smaller organisations, larger organisations are highlighted as more advantageous. Organisation size can be an advantage to the organisation in terms of its performance (Chandler Jr, 1962). The organisation size influences the performance of an organisation due to the advantages or disadvantages faced by the organisation with a particular level of growth (Kipesha, 2013). Thus, organisations must always consider their organisation size for their performance before implementing green practices (Lin et al., 2019).

In addition to environment orientation, a number of studies have cited firm size as one of the most influencing variables that affects the implementation of environmental practices in an organisation (e.g., Child & Tsai, 2005; Melnyk et al., 2003; Sasu et al., 2017). Large firms usually have access to both manpower and financial resources that can be devoted for undertaking environmental programmes and can also recruit trained personnel to look after the execution and review of their environmental plans. Being more prone to stakeholders' pressure (from consumers, shareholders, suppliers, regulatory authorities, non-governmental organisations and

public), large-sized firms feel bound to adopt green practices and take green initiatives on a large scale. In a recent study, Gupta and Nagpal (2020) findings reveal a positive and significant influence of firm size in affecting the linkage between green practices (green marketing practices) and firms' performance in terms of financial performance, social performance and economic performance. It is found that the increase in organisation size leads to the increase of green practices and corporate performance.

A voluminous stream of research into organisational failure found that smallness is corporate liabilities within firm populations in diverse industries (Kucher et al., 2020). Based on Balasubramanian et al. (2020) study, it is found that large organisations were found to show significantly greater levels of implementation of green supply chain parctices, greater internal drive for implementation and lower barriers to implementation of green practices than small and medium organisations. Grant et al. (2002) studies also highlighted that large firms have greater resources and does more implementation of green practices and while other study such as Vijayvargy et al. (2017) and Qi et al. (2010) reported higher environmental performance benefits for large firms.

D'Amico et al. (2014) highlighted the positive relationship between organisation size and the level of corporate sustainability commitment. Unlike smaller organisations that may face lower public pressure, larger organisations may be subjected to greater public scrutiny when they do not meet the corporate sustainability expectations (Mdolo et al., 2018). Generally, larger organisations are more visible and socially responsive whereas smaller organisations attain lesser pressure or environmental-related recognition given their lower visibility (Lin et al., 2019). Larger organisations can operate at lower costs due to its scale and scope of economies advantage (Kipesha, 2013), acquire easier access to credit finance for investment, possess a larger pool of qualified human capital, have a greater chance for strategic diversification and higher negotiation power with the clients and suppliers (Yang & Chen, 2009), and exhibit superior capabilities in development, marketing, and commercialisation (Teece, 1986).

2.9 Organisation Age

This section discusses a potential moderator in the relationship between green practices and the corporate sustainability performance in this study, specifically organisation age. Ling et al. (2007) and Yoon and Suh (2018) defined organisation age as the number of years since the legal formation of an organisation. Coad et al. (2018) defined organisation age as the number of years in operation of a firm measured from the time of commencement to date. Organisation age is an important attribute that influences the performance of an organisation, as it reflects the experience possessed by the organisation in its operations (Kipesha, 2013; Yoon & Suh, 2018). The relationship between organisation age and performance reveals whether the organisations are able to implement proper strategies to stay relevant and find ways to constantly renew themselves (Noor Azina & Hashem Salarzadeh, 2014). Organisation age can be used to measure the experience of an organisation by measuring the cumulative output or proxied by time, which was widely used in past studies that assessed learning by doing and the survival of organisations (Balasubramanian & Lee, 2008).

Organisation age is one of the frequently used controlled variables to explain the relationship between sustainability practices and organisational performance, where ageing organisations are typically larger in size and more profitable (Amin et al., 2019). Organisation age and financial performance are also seen to affect corporate sustainability commitment, as organisation age signifies a longer history of commitment and inclination of maintaining the accumulated reputation (Mdolo et al., 2018). Organisation age is also an important contextual variable in management studies, which reflects the changing features, capabilities, and challenges of an organisation as it matures, resulting in various organisational implications, such as the liability of newness and the life cycle of products (Anderson & Zeithaml, 1984; Henderson, 1999).

Both organisational age and organisational performance can also be explained through learning (Kipesha, 2013)—for instance, older firms often display better financial performance given their experience and these organisations enjoy the benefits of learning by doing (Coad et al., 2013). Basically, as an organisation

becomes mature, it is able to learn (Loderer & Waelchli, 2010). Over time, organisations continue to learn, discover their expertise, and learn how to be more efficient (Ericson & Pakes, 1995). Organisations can learn by doing or by investing in research and development, employing human capital and train their employees, or even learning from other organisations in the same or different industries (Loderer & Waelchli, 2010). Through learning, organisations specialise and find ways to standardise, coordinate, and speed up their production processes as well as reduce costs and improve the quality (Kipesha, 2013). According to Jovanovic (1982), the level of productivity increases with time. Coad, Segarra, and Teruel (2013) stated that organisations improve with age; ageing organisations appear to exhibit steadily increasing level of productivity, higher profits, larger organisation size, lower debts ratio, and higher equity ratio. Besides that, ageing organisations have better ability to convert sales growth into subsequent growth of profits and productivity (Coad et al., 2013).

Besides that, due to many years of organisational learning, older firms allow exchange of ideas, creation and enhancement of effective communication within employee teams and the occurrence of multifunctional work teams which is pertinent to innovation development (Gomes & Wojahn 2017). Kucher at al. (2020) stated that young and adolescent firms predominantly fail due to internal shortcomings. Hansen (2016) argues that older firms tend to perform better than younger firms in terms of innovation due to years of organisational learning, experience and maturity. Aziz and Samad (2016) established that the firm's age moderates the influence of innovation on the performance of firms. It is argued that, as organisation increases in age, it improves the performance of the organisation. As stated above; the increase in the age of organisation increases the knowledge and organisational learning in the organisation and higher profit which in turns leads to the competitive advantage of the organisation in sustaining the organisation.

2.10 Research Gaps

Today, green practices in business have remained far from being universally embraced and applied by business entities globally, as it is still largely perceived as a burden in terms of increase in cost or revenue loss (Linas et al., 2014; Luthra et al.,

2016; Mukhtar, 2016). Exploring the significance of green practices in the development of a sustainable business culture has been a topic of great concern for scholars and practitioners globally (Luthra et al., 2016). Despite that, studies on green practices and related initiatives in business have been relatively lacking (Lorek & Fuchs, 2013; Mdolo et al., 2018). The implementation of green practices to achieve corporate sustainability performance within the Malaysian context has been underexplored, as most studies focused on the green supply chain management in the manufacturing sector (Font et al., 2008; Mdolo et al., 2018). The question on the rationale of the influences on organisations to adopt corporate sustainability has been a prevalent theme in numerous studies but most past studies focused on the Western countries, such as the United States and Europe, and developing countries, such as China, but little emphasis has been given on the Southeast Asian region, such as Malaysia (Mdolo et al., 2018).

Thus, the first identified research gap was the limited number of studies on green practices and corporate sustainability performance, which was addressed in this study using a holistic model of six dimensions of green practices (i.e. waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles) towards achieving corporate sustainability performance (Aktin & Gergin, 2016; Asmah Alia et al., 2015; Chan, 2013; Khairul Naim et al., 2013; Kirama & Mayo, 2016; Kulkarni et al., 2014; Lin et al., 2013; Majerovaa, 2015; Maletic et al., 2014; Nadanyiova et al., 2015; Wan & Toppinen, 2016).

The second research gap was the lack of studies on the effect of the Islamic work ethics on the corporate sustainability performance (Aida et al., 2016; Olanrewaju et al., 2018). Literature has revealed the scarcity of empirical studies on the moderation effect of the Islamic work ethics on the relationships with organisational aspects (Aida et al., 2016). Most of the prior studies on Islamic work ethics focused on job satisfaction and job commitment; thus, studies on the relationship of the Islamic work ethics with other important variables have been scarce (Usman et al., 2015). The effect of the Islamic work ethics on the organisational performance has not gained much attention in research (Salih et al., 2012). According to Azharsyah (2015), past studies on the Islamic work ethics mainly focused on the attributes of Islamic work ethics, which have led to the scarcity of studies on the relationship

between the Islamic work ethics and corporate performance. The influences of the Islamic work ethics on the corporate performance have received inadequate attention (Azharsyah, 2015). It is important to explore the Islamic work ethics given its contribution to the corporate sustainability performance (Abdus Sattar, Kashif, et al., 2012). With that, the current study addressed this identified research gap by empirically assessing the effect of the Islamic work ethics on the corporate sustainability performance and the moderating role of the Islamic work ethics in the relationship between green practices and the corporate sustainability performance.

The third research gap involved the limited number of studies on the Islamic work ethics that focused on developing countries, especially Malaysia (Olanrewaju et al., 2018; Wahibur, 2010). Although the work ethics has gained considerable scholarly attention, studies on the religiously oriented values, particularly the Islamic work ethics, have remained relatively limited in the current literature (Mastura et al., 2016), especially in developing countries (Kumar & Raduan, 2010; Muhammad Shakil, 2011; Wahibur, 2010). The reported findings of previous studies that were based on developed countries may not be transferable or applicable to the Malaysian context (Hofstede, 1998; Mahfooz et al., 2004). Realising that almost all studies on Islamic work ethics were carried out in developed countries, the current study focused on assessing the Islamic work ethics in a developing country like Malaysia.

The fourth research gap involved the lack of studies that holistically assessed the three dimensions of corporate sustainability performance, specifically the economic, environmental, and social sustainability performance (Chang et al., 2018; Zhang et al., 2018). Only a few studies attempted to holistically explore the economic, environmental, and social dimensions of sustainability (Chang et al., 2018). Most of these prior studies focused on identifying the best practices to improve the environmental performance of sustainability without considering other dimensions of corporate sustainability (Chang et al., 2018; Zhang et al., 2018). Hence, this study aimed to address this particular research gap by holistically assessing the three dimensions of corporate sustainability performance.

The fifth research gap was the lack of studies on the effect of organisation size on the corporate sustainability performance (Chang et al., 2018; Kiesnere & Baumgartner,

2019). Most of the prior studies that explored the relationship between organisation size and corporate sustainability performance provided insufficient empirical evidence or failed to illustrate the relationship, which contributed to the limited number of studies on the relationship between organisation size and corporate sustainability performance (Chang et al., 2018). The need for more detailed studies on the organisation size and sustainability in the manufacturing context (Kiesnere & Baumgartner, 2019) was addressed in the current study, specifically on the relationship between organisation size and the corporate sustainability performance and the moderating role of organisation size in the relationship between green practices and the corporate sustainability performance.

The sixth research gap involved the limited number of studies that assessed the effect of organisation age on the corporate sustainability performance (Caves, 1998; Coad et al., 2013; Li et al., 2011). The effect of organisation size on the organisational performance was inadequately explored (Caves, 1998; Coad et al., 2013; Li et al., 2011). According to Leoncini et al. (2019), it is worth to be green for organisations in this green revolution. The existing studies on the relationship between age diversity and performance focused on the individual group levels only (Williams & O'Reilly III, 1998); thus, shedding insufficient light on the relationship between organisation age and organisational performance (Li et al., 2011). Hence, this study aimed to address this particular research gap by assessing the relationship between organisation age and the corporate sustainability performance and the moderating role of organisation age in the relationship between green practices and the corporate sustainability performance.

2.11 Al-Quran and Hadith

Al-Quran is the central religious texts of Islam or also known as the book of Divine guidance and direction for mankind, which is the last revelation to Prophet Muhammad (S.A.W) by Allah (S.W.T) through the angel Gabriel (Salih et al., 2012). Meanwhile, the hadith is an oral tradition that is related to the words and deeds of Prophet Muhammad (S.A.W) (Salih et al., 2012). Both Al-Quran and hadith are important sources of Islamic teaching (Abdus Sattar, Kashif, et al., 2012). Hafiz Muhammad et al. (2015) stated that, in every aspect of life, Islam provides a sound

and complete ethical system. Al-Quran and the sayings and practices of Prophet Muhammad (S.A.W) are the main sources of Islamic work ethics (Abbas & Abdullah, 2008; Rice, 1999). Focusing on the complete way of life, Islam provides efficient ethical solutions to mitigate environmental crises (Mohd Yaseen, 2014). The Islamic work ethics is important in practising green practices to achieve corporate sustainability performance, as Islam enhances the protection of the environment, social, and even economy (Rice, 1999).

Islam provides a complete guide for every aspect of life, including business and social justice (Nur et al., 2019). Al-Quran and sunnah, which contain strong ethics and morals, can become guidelines for various organisations to carry out their business activities that cannot be separated from the corporate social responsibility (Asyraf Wajdi, 2008). The ability to develop and manage the world, according to the principles and values of sharia, is one's truth and every employee in the organisation must play their role and responsibility as a servant of God (Hussein, 2015). Allah (S.W.T) is the One and truly the One who created the earth and the universe, which serves as the main principle in Islam (Nur et al., 2019). As stated in Al-Quran, Allah (S.W.T) is the last owner of everything on earth and in the universe (Al-Quran, 57:5) and ultimately man is accountable to Allah (S.W.T) (Al-Quran, 2:28). All economic activities (trade or commerce) must be in accordance with the principles and values of sharia because everything is accountable to Allah (S.W.T) (Nur et al., 2019). Table 2.13 shows the Islamic work ethics based on Al-Quran.

Table 2.13 Islamic Work Ethics based on Al-Quran

Al-Quran Verses	Keywords
"*Let there arise out of you a band of people inviting to all that is good, enjoining what is right, and forbidding what is wrong*" (Al-Quran 3:104).	Each member of a group starts to facilitate others to follow and practice values and ethics, which ensure the prosperity for both individual and organisation.
"*He that doeth good shall have ten times as much to his credit: He that doeth evil shall only be recompensed according to his evil: No wrong shall be done unto (any of) them*" (Al-Quran 6:160).	The Islamic work ethics enhances the value of virtue.

Al-Quran Verses	Keywords
"*O ye who believe! Why say ye that which ye do not? Grievously odious is it in the sight of Allah (S.W.T) that ye say that which ye do not*" (Al-Quran 61:2-3).	Show excellence and demand excellence.
"*Give measure and weight with (full) justice*" (Al-Quran 6:152). "*So establish weight with justice and fall not short in the balance*" (Al-Quran 55:9).	It is important to keep consumers happy by being away from fraud and deceive; no one should deprive others of their rights and it is not allowed to be unjust with others in any case. Even if someone arrogates a little right of a purchaser during weighing, he disrupts the balance of the Universe.

Source: Abdus Sattar et al. (2011)

Al-Quran and hadith were used as one of the underpinning theories of this study. For example, Abdus Sattar et al. (2011) also used Al-Quran and hadith to assess the relationship between the Islamic work ethics and business performance using the sample of 114 managers in the telecommunications industry of Pakistan. The study concluded that the Islamic work ethics significantly and positively influences the business performance of an organisation. As stated by Abdus Sattar et al. (2011), the Islamic work ethics is rooted in Al-Quran and hadith, as Al-Quran often speaks about honesty and justice in trade and fair distribution of wealth in society; encourages acquiring skills and technology; and discourages laziness. The Islamic work ethics views dedication to work as a virtue and emphasises cooperation and consultation at work (Darwish, 2000); hard work and creativity as the elements of personal accomplishment and happiness (Abdus Sattar et al., 2011); and the values of Islamic work ethics are derived from the accompanying intention and results, rather than just results (Abbas, 1988). Table 2.14 presents the hadith on the Islamic work ethics.

Table 2.14 Hadith on the Islamic Work Ethics

Hadith	Keywords
The Prophet (S.A.W) said in relation to sincerity: "Allah (S.W.T) does not look to your bodies, to your faces, but He looks to	Islam attaches great importance to the sincerity of intention and actions in every walk of life. The performance of duties

Hadith	Keywords
your hearts and your deeds". The Prophet (S.A.W) said: "Actions are but intention and every man shall have but which he intended. Thus he whose migration was for Allah (S.W.T) and His messenger, and he whose migration was to achieve some worldly benefit or take some woman in marriage, his migration was for that for which he migrated". The Prophet (S.A.W) also the mentioned that religion is sincerity! We said: To whom? He said: "To Allah (S.W.T) and His Book and His messenger and to the leaders of the Muslims and common folk".	requires that all individuals in organisations work with sincerity and fidelity.
Allah (S.W.T) says: "If ye are on a journey, and cannot find a scribe, a pledge with possession (may serve the purpose). And if one of you deposits a thing on trust with another, let the trustee (faithfully) discharge his trust, and let him fear his Lord. Conceal not evidence; for whoever conceals it, his heart is tainted with sin. And Allah (S.W.T) knoweth all that ye do" (2:283). "O ye that believe! Betray not the trust of Allah (S.W.T) and the messenger, nor misappropriate knowingly things entrusted to you" (8:27). "Allah (S.W.T) doth command you to render back your trusts to those to whom they are due; and when ye judge between man and	Islam considers human life and all resources as trust by Allah (S.W.T). Thus, every manager is responsible for the workers and other resources with whom he is entrusted. Trust is especially important for Muslim business persons in the industry due to the need to make profit and the temptation to enhance the attributes of their products or services during a sales pitch. All business resources should be treated as a divine trust by the businessman. Therefore, the businessman or manager should make the most efficient and socially desirable use of business resources. The activities should be in no case of destruction or should not damage the society or the natural environment. Indeed, Islam emphasises the role of mankind towards the natural

Hadith	Keywords
man, that ye judge with justice: verily how excellent is the teaching which He giveth you! For Allah (S.W.T) is He who heareth and seeth all things" (4:58). The Prophet (S.A.W) mentioned the importance of trust in this public administration as follows: "Any ruler who has been entrusted with the affairs of a group of Muslims and who dies as a dishonest ruler, to him, paradise is forbidden by Allah (S.W.T)". "God will bless the transaction in which the buyer and the seller are unambiguous and frank and have goodwill for each other". "Whoever appoints a person over a group of people, while among that group there is another person who's more acceptable to Allah (S.W.T) than the appointed one, indeed, he has not lived up to the trust of Allah (S.W.T), His messenger, and the believer".	environment by making him responsible of his surroundings as Allah's vicegerent.

Source: Mohd Zulkifli et al. (2008)

Thus, for this study, Al-Quran and hadith were used as the main foundation for this study in linking the relationship between green practices and corporate sustainability performance with the moderating role of Islamic work ethics as Al-Quran and hadith provide guideline for organisation in practising green practices to achieve sustainability performance along with the implementation of Islamic work ethics.

2.12 Underpinning Theories of Study

2.12.1 Resource-Based View Theory

The resource-based view provides the underlying basis of an organisation's competitive advantage (Penrose, 1959). The resource-based view can be defined as a sustainable competitive advantage of an organisation, which can be attained through the virtue of organisation-specific and unique resources that are inimitable, rare, non-substitute, valuable, and non-tradable (Barney, 1991). Through the resource-based view, when the resources are managed in a way that their outcomes cannot be imitated by the competitors, the organisation can ultimately create a competitive barrier in delivering sustainable competitive advantage (Mahoney & Pandian, 1992). On a similar note, Oliver (1997) highlighted how the resource-based view enables an organisation to achieve sustainable competitive advantage. Through the resource-based view, organisations that implement strategies by exploiting their internal resources and capabilities would perform and create value (Salina, 2012). Indeed, the resource-based view places a great deal of attention on intangible assets, such as knowledge and its potential as a value generator. There are organisational resources, physical resources, and human capital resources (Barney, 1991). With respect to the external environment, it is a must for organisations to continuously evaluate choices regarding resource employment (Collis & Montgomery, 1995).

According to Shi et al. (2012), many past studies linked green practices to the resource-based view theory. Schoenherr (2012) similarly agreed that green practices are valuable, rare, non-substitutable, and difficult to be imitated, which contribute to the competitive performance of an organisation. The resource-based view theory discussed how green practices can make resources unique and complete, which make the attempt to imitate by competitors difficult (Khanchanapong et al., 2014). The capabilities of the organisation to manage their environmental activities also contribute to their competitive advantage (Hart, 1995). The strategies used to sustain an organisation would enhance the sustainable delivery of values that can increase the competitive advantage (Dao et al., 2011; Hart, 1995; Hart & Milstein, 2013; Kramer, 2007).

Besides that, with respect to the resource-based view theory, the demographic attributes of an organisation in terms of organisation size and organisation age also potentially enhance its performance. According to the resource-based view theory, organisation age influences the organisational performance (Li et al., 2011). Li et al. (2011) found a significant relationship between organisation age and its profitability. Organisation age positively influences the creativity and capabilities of the organisation, resulting in sustained competitive advantage (Avery et al., 2007; Peterson & Spiker, 2005). It is difficult to copy organisation age because this attribute is protected by the barriers of interpersonal connections, knowledge, and experience that are highly complex socially (Beaver & Hutchings, 2005; Timmerman, 2000). Furthermore, through organisation age, an organisation can gain a better understanding on the preferences and demands of its ageing consumers (Morrison, 1992), which in turn improves the organisational performance (Li et al., 2011).

For this study, the resource-based view theory was used to support the relationships of green practices, organisation size, and organisation age with the corporate sustainability performance. This study extended support for the theory of organisational framework, where the attributes of corporate sustainability performance are embedded in the production process that leads to higher economies of scale, and the resource-based view theory, where organisations that possess valuable and inimitable resources can attain sustainable competitive advantage over their competitors. As the organisations grow in size, they can leverage their resources to achieve greater economies of scale, resulting in better corporate sustainability over time (Ho et al., 2018). The view held by Penrose (2008) is that firm size is a signal of resource capacity and capability. Thus, the larger the firm, the more organisational resources it has and better equipped it is to achieve organisational goals (Kitenga et al., 2020). As stated by Kitenga et al. (2020), small firms must aspire to grow into large firms so that their shareholders can get higher returns. Olawale et al. (2017) observes that ideally, firms seek to grow bigger in terms of revenues, profits, workforce, geographic presence, market share, or asset accumulation.

2.12.2 Natural-Resource-Based View Theory

Hart (1995) introduced the natural-resource-based view theory, as the resource-based view theory overlooked the interaction between an organisation and its natural environment (Hart & Dowell, 2011). The natural-resource-based view theory considered the relationship between an organisation and its natural environment as a source of competitive advantage (Hart, 1995). As stated by Ong et al. (2019), the natural-resource-based view theory recognised the critical impact of environmental influences on the competitive landscape of business organisations and emphasised the critical role of creating capabilities that facilitate environmentally sustainable economic activities.

In addition, Hart (1995) noted that the implemented strategies and competitive advantage in the coming years should be rooted in the capabilities to facilitate economic activities that are environmentally sustainable. As underpinned by the natural-resource-based view theory (Hart, 1995; Hart & Dowell, 2011), the implementation of green practices would help to improve the organisational productivity and lower the operational costs as a result of the innovation in environmental protection, resulting in improved financial performance (Ong et al., 2019).

Accordingly, there are three key strategic capabilities under the natural-resource-based view theory, namely pollution prevention, product stewardship, and sustainable development (Hart, 1995). Table 2.15 presents the details of the three key strategic capabilities under the natural-resource-based view theory.

Table 2.15 Key Strategic Capabilities of Natural-Resource-Based View

Key Strategic Capabilities	Explanation
Pollution prevention	Seeks to prevent waste and emission, rather than cleaning up "the end of the pipe" with lower costs. The removal of pollutants from the production process increases the efficiency in terms of: a) Lower inputs required

Key Strategic Capabilities	Explanation
	b) Simplified process involved c) Minimal compliance and liability costs
Product stewardship	Creates potential for competitive advantage through strategic pre-emption; for example, by securing exclusive access to resources (green raw materials) or by establishing standards that are advantageous to the focal community
Sustainable development	Sustainable development strategy does not merely seek to do less environmental damage but to actually produce in a way that can be maintained indefinitely into the future, in terms of economic, environmental, and social concerns.

Source: Hart and Dowell (2011)

Hart (1997) separated the corporate sustainable development strategies into two areas, namely clean technology and base of the pyramid. According to Hart (1997), pollution prevention and product stewardship allow greater environmental efficiencies, while meeting the challenges of global sustainability might require the organisations to actually reduce the consumption of materials and energy in the developed markets and build markets in the developing countries. Clean technology focuses on future technologies and markets that deal with the way the organisations build new competencies in terms of reduced material and energy consumption without straining natural resources (Hart & Dowell, 2011). However, the questions of whether the organisations are able to sustain competitive advantage through the development of clean technology and whether the domain is characterised by uncertainties and discontinued changes for sustained competitive advantage emerge (Fiol, 2001). Table 2.16 presents the natural-resource-based view after the separation of sustainable development into clean technology and base of the pyramid.

Table 2.16 Key Strategic Capabilities of Natural-Resource-Based View

Strategic Capabilities	Societal Driving Force	Key Resources	Competitive Advantage
Pollution prevention	Minimise emission, effluent, and waste	Continuous improvement	Lower costs

Product stewardship	Lower product life cycle cost	Stakeholder integration	Reputation/ Legitimacy
Clean technology	Make quantum-leap improvement	Disruptive change	Future position
Base of the pyramid	Meet the needs of the poor	Embedded innovation	Long-term growth

Source: Hart and Dowell (2011)

With respect to the strategic capabilities of natural-resource-based view, the green practices include pollution prevention, product stewardship, and clean technology. For example, the dimensions of green practices, which are waste management, sustainable marketing and sustainable lifestyles, reflect pollution prevention with its aim to minimise emission and waste. The other dimensions of green practices, which are sustainable design, eco-labelling, and sustainable procurement, reflect product stewardship with its aim to minimise the ecological impacts of products (by minimising environmentally hazardous process, redesign existing product system to reduce liability, and develop products with lower life cycle costs) (Stefano et al., 2016).

The natural-resource-based view theory was selected as one of the underpinning theories of this study given its focus on green practices at the organisational level, which involved its interaction with the natural environment. As stated by Hart (1995), the consideration for a relationship with the natural environment leads to competitive advantage for the organisation. This study aimed to examine the relationship between green practices and the corporate sustainability performance, which was expected to contribute to competitive advantage with respect to the natural-resource-based view theory.

2.12.3 Stakeholder Theory

According to Brockett and Zabihollah (2012), the stakeholder theory suggested that organisations are driven to be socially and environmentally sustainable due to the pressures from the stakeholders. Sandhu (2013) agreed that a useful starting point for anchoring an enquiry into the corporate sustainability practices can be explained

through the stakeholder theory. Stakeholders can be defined as any individual or group who is affected or can affect the achievement of the organisational objectives (Freeman, 1984). There are three points of view under the stakeholder theory, which are normative, descriptive, and instrumental (Donaldson & Preston, 1995).

The stakeholder theory has been frequently used in literature to support various organisations' commitment to economic, environmental, and social activities. The stakeholder theory posited that it is in the best interest of the organisation to maintain a positive relationship with its stakeholders (Nemetz, 2015). The reported results by Mdolo et al. (2018) showed that organisations with high stakeholder engagement were more likely to adopt corporate sustainability, which indicated their support for sustainable development in their business conducts and neighbouring communities. Additionally, the study further revealed that the adoption of corporate sustainability indicated the interest of the organisations in other activities apart from profit-oriented ones that were deemed important to the stakeholders (Mdolo et al., 2018).

Hence, when it comes to the interactions with stakeholders, mutually satisfying and reciprocal relationships among the organisations should be considered (Miles, 2012). Examples of the interactions between stakeholders and organisations include participation, consultation, cooperation, and information exchange (Grafe-Buckens & Hinton, 1998; Green & Hunton-Clarke, 2003). A proactive environmental approach involves multiple stakeholders at all levels (including employees, suppliers, shareholders, local communities, and environmental non-governmental organisations) and requires technological changes in the systems, processes, and products or services (Aragón-Correa & Sharma, 2003). Figure 2.3 illustrates the different stakeholder groups.

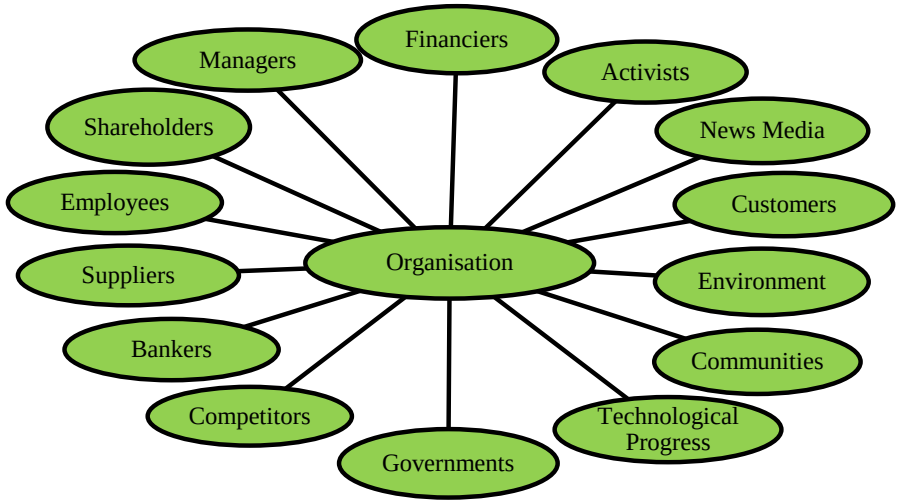


Figure 2.3 Lists of Stakeholder Groups

Source: Metcalfe (1998)

Nwanji and Howell (2004) argued that organisations cannot afford to ignore issues related to the interests of stakeholders, particularly when it concerns maximising the shareholders' wealth since all stakeholder groups contribute to the organisational success. Through the significance of the stakeholder theory in achieving corporate sustainability, the organisations conduct corporate sustainability approaches by creating value for the present shareholders and protecting the rights of future shareholders and stakeholders (Brockett & Zabihollah, 2012). In practice, environmental strategy and agenda aim to satisfy the stakeholders' needs and minimise the effects of competitive pressures (Hofer et al., 2012). Thus, this would drive the manufacturers to implement environmental management practices according to the requirements of governmental agencies, laws, regulations, and obligations towards society (Chen et al., 2015). When the interests of all stakeholders are taken into action, the organisation would be able to achieve value maximisation for stakeholders while protecting their interests and business stability (Brockett & Zabihollah, 2012). Thus, the stakeholder theory was applied in this study, which involved handling the environmental issues, as the stakeholders would drive the manufacturers to implement green practices for sustainability.

According to Hart and Dowell (2011), the voice of the environment can be effectively integrated into the product design and development process through the stakeholder engagement and the valuable stakeholder view. Effective stakeholder integration contributes to better management of waste reduction and energy conservation programmes (Sharma & Vredenburg, 1998). Proactive organisations would involve those who are affected by the decisions made in their interactions with the natural environment as part of the organisational capabilities (Hart & Dowell, 2011). The pressures from multiple stakeholders lead to new regulations and expectations for environmental performance (Prakash, 2000). Through the stakeholder theory, practical, efficient, effective, and ethical ways to manage organisations in a highly complex and turbulent environment were promoted (Freeman, 1984). Table 2.17 presents practical, efficient, and ethical ways to manage organisations in a highly complex and turbulent environment with respect to the stakeholder theory.

Table 2.17 Characteristics of Stakeholder Theory

Characteristics	Explanation
Practical theory	All organisations have to manage stakeholders; whether they are good at managing them is another issue.
Efficient	Stakeholders tend to reciprocate with positive attitude and behaviour towards the organisations if they are treated well: a) Share valuable information (stakeholders) b) Buy more products or services (consumers) c) Provide tax breaks or other incentives (communities) d) Provide better financial terms (financiers) e) Buy more stocks (shareholders) f) Work hard and remain loyal to the organisations, even during the difficult times (employees)
Effective	It harnesses the energy of stakeholders towards the fulfilment of the organisational goals.
Ethical way of managing the organisation in a highly complex and turbulent environment.	Unlike organisations that do not manage their stakeholders, organisations that manage stakeholders have better information to make decisions and are ahead of their competitors.

Source: Harrison et al. (2015)

The purpose of using the stakeholder theory in this study was also to assess the effect of the Islamic work ethics. As stated by Nwanji and Howell (2004), it is the interest of all stakeholders, including shareholders, that the management of the organisations must follow ethical codes in order to realise the organisational goals. Nwanji and Howell (2004) further added that the general ethical approach provides useful information to analyse ethical dilemmas, which was in line with the stakeholder theory. The concept of the stakeholder theory is rooted in the theories of duties and rights (Beer, 2004).

For example, the directors are obligated to acknowledge the validity of various stakeholders' interests and accommodate their rights in a supportive manner (Donaldson & Preston, 1995). Islam teaches the significance of positive attitude, aligned with the Al-Quran and Sunnah, in all conditions and places, including at the workplace. All management decisions contain an ethical component; the ethical arguments in defence of managing for stakeholders are important in both theoretical and practical sense (Harrison et al., 2015). Thus, it is a must to practice the right attitude with every stakeholder, as the stakeholder theory advocated treating all stakeholders with fairness, honesty, and generosity (Harrison et al., 2015).

Thus, stakeholder theory has been used in this study to link the variables in this study in terms of green practices in achieving corporate sustainability performance in addressing the stakeholder's needs. The stakeholder pressure enhances the successful implementation of green practices in achieving corporate sustainability performance in chemical manufacturing organisations as stakeholders need a sustainable environment produced by the organisation. Every business operation conducted by the organisation affected the stakeholder, thus in order to compete and sustain in the business well, organisations have to address the stakeholders' needs and interests. Besides that, stakeholder theory also has been used in this study in addressing the Islamic work ethics in the organisation as stakeholder theory advocates that there is a need for every organisation to perform the business ethically in sustaining the organisation. By acting ethically in the implementation of green practices in achieving corporate sustainability performance, it will increase the trust of the stakeholders and it will increase the image of ethical organisation which in turns improves the sustainability of the organisation.

Table 2.18 shows the summary for empirical study of green practices on coporate sustainability performance.

Table 2.18 Summary for Empirical Study of Green Practices on Coporate Sustainability Performance

Title	Author	Sample	Findings
1. Green Initiatives Adoption and Environmental Performance of Public Listed Companies in Malaysia	Nor Azah et al. (2018)	120 samples top management (Public listed company, Malaysia)	Green initiatives adoption positively affects the environmental performance of Malaysian PLC
2. Environmental orientation and corporate performance: The mediation mechanism of green supply chain management and moderating effect of competitive intensity	Chan et al. (2012)	194 foreign invested enterprises operating in China	Green practices activities, in turn, significantly enhances corporate performance
3. Managing green marketing: Hong Kong hotel managers' perspective	Chan (2013)	378 hotels in Hong Kong	It is clear that managers from hotels with a larger size or a formal EMS in place have a positive attitude towards the aforementioned green marketing strategies, especially the use of eco-labels.

Based on the table above, it shows that green practices study on corporate performance has been studied in various sector and different context of study. Thus, this study aims to study the effect of green practices on corporate sustainability performance in terms of environment, economic and social sustainability performance in chemical manufacturing organisation in Malaysia.

2.13 Research Framework

The development of this research framework focused on examining the effects of green practices on the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance of the Malaysian chemical manufacturing organisations. Figure 2.4 presents the proposed research framework in this study.

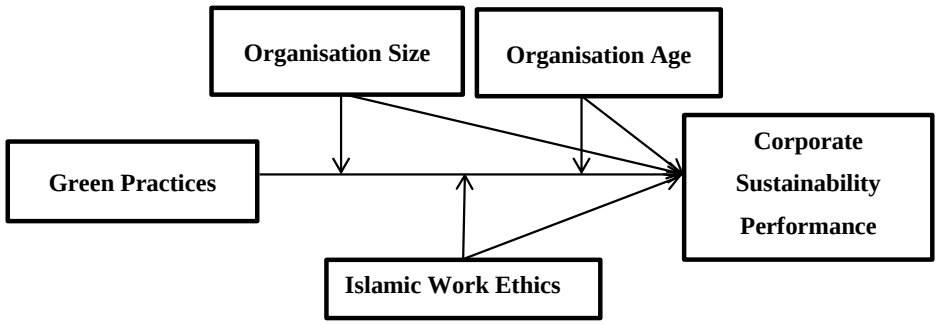


Figure 2.4 Research Framework

For this study, the resource-based view theory, natural-resource-based view theory, and stakeholder theory were used as the underpinning theories in this study and Al-Quran and hadith have been used as the main foundation that connect green practices and the corporate sustainability performance. The resource-based view theory was also used in this study to explain the relationship between organisation size and the corporate sustainability performance and the relationship between organisation age and the corporate sustainability performance. Besides that, Al-Quran and hadith were used in this study to explain the relationship between the Islamic work ethics and the corporate sustainability performance. Meanwhile, the natural-resource-based view theory and stakeholder theory were used in this study to explain the relationship

between green practices and the corporate sustainability performance. The stakeholder theory was also used to explain the relationship between the Islamic work ethics and the corporate sustainability performance.

2.14 Development of Hypotheses

2.14.1 Relationship between Green Practices and Corporate Sustainability Performance

Green practices are environmentally friendly activities and going green basically implies pursuing knowledge, activities, and lifestyles that lead to better environmental well-being (Nor Azah et al., 2018). Organisations that implement green practices can improve their competitiveness and simultaneously improve both economic and environmental performance (Ali et al., 2019). It is widely acknowledged that green practices contribute to an improved corporate image of organisations (Chan et al., 2012; Chiou et al., 2011; Mittal & Dhar, 2016; Sellitto & Hermann, 2019; Yang et al., 2019), lower business costs (Mittal & Dhar, 2016), and higher competitiveness by encompassing new markets and achieving full compliance with the current regulations (Chan et al., 2012; Chiou et al., 2011).

Basically, higher investment in environmental practices contributes positive effect on the competitive advantage of an organisation, resulting in improved operational performance (Melnyk et al., 2003; Pagell & Gobeli, 2009; Schoenherr, 2012; Yang et al., 2011). Certain studies revealed a positive relationship between environmental management or performance and business performance (Hamilton, 1995; Konar & Cohen, 2001; Molina-Azorín et al., 2009). Through green practices, organisations can gain significant savings, resulting in a cost advantage over their competitors (Hart, 1995). As such, commitment to environmental sustainability can manifest itself through the implementation of green practices (Corbett & Kirsch, 2001; King & Lenox, 2002; Klassen & Whybark, 1999; Montabon et al., 2000; Montabon et al., 2007; Shah & Ward, 2007; Sharma et al., 2007).

Hussam and Shehnaz (2018) found a significant and positive relationship between green practices and the corporate sustainability performance. Besides that, Sellitto and Hermann (2019) assessed the implementation of green practices in the context of

electrical and electronics industry in Brazil and found that green practices in terms of green strategy and green innovation influence competitiveness in the industry through the reduction of environmental impacts. Besides that, Thong and Wong (2018) successfully proved the contribution of green practices to the environmental and social sustainability performance of organisations.

Focusing on the organisations in the manufacturing sector, Ali et al. (2019) examined the effectiveness of green practices in the context of Indian manufacturing sector and found that green practices did reduce the damage to the environment and improve the business performance, such as lower emission of particulate matters and specific effluent discharge, reduced carbon dioxide intensity, and lesser water consumption. In addition, Ochieng (2019) found that green practices (e.g. green purchasing) positively and significantly affected the performance of large chemical manufacturing organisations in Kenya. These chemical manufacturing organisations in the study revealed an increase in the practice of green manufacturing system, purchase of energy-saving equipment and products that were stamped by reliable eco-labels, cooperation with suppliers to ensure standard packaging, and reverse logistics by accepting products back from consumers, which positively affected their organisational performance (Ochieng, 2019).

In another study, Santos et al. (2019) also found that green practices contributed positive effect on the operational performance of the manufacturing organisations in Brazil. The study further revealed that organisations benefit from green practices by cooperating with the upstream suppliers of environmentally responsible production technology and by exchanging environmental information with these suppliers, as well as by considering the views of green consumers in their production processes. Adding to that, Yang et al. (2019) empirically demonstrated the importance of green practices for the manufacturing organisations in China in terms of their environmental performance. When organisations commit to the environmental dimension of sustainability, they are more likely to perform better to boost their corporate sustainability responsibility image for their stakeholders (Yang et al., 2019).

Meanwhile, Amin et al. (2019) found a significant and positive relationship between sustainability practices and the financial performance of the Islamic banks in Malaysia from the perspectives of Islamic banks, including the management and shareholders. Amin et al. (2019) further explained that the improvement in sustainability practices would add financial values to the management, shareholders, and financial performance of the Islamic banking industry globally, especially on the efficiency of their sustainability management and practices towards achieving sustainability ratings. These findings on the positive relationship between sustainability practices and financial performance supported the stakeholder theory.

Focusing on the organisations in the manufacturing sector in Malaysia, a positive relationship between green practices and the corporate sustainability performance of organisations in the Malaysian manufacturing sector was reported in several prior studies. For example, Sundram et al. (2017) found that green practices such as eco-design and packaging practices positively supported their environmental performance while green practices such as green purchasing positively affected their operational activities. Salwa Hanim et al. (2017) also found that green practices contributed to corporate sustainability performance in terms of the economic, environmental, and social sustainability performance of the organisations in the manufacturing sector in Malaysia. Likewise, Yacob et al. (2018) also found that green practices such as energy management, water conservation, and waste management were related to the environmental sustainability of the manufacturing sector in Malaysia.

Adding to that, Ong et al. (2019) performed structural equation modelling on the responses from a total of 124 managers of ISO14001-certified manufacturing organisations in Malaysia using SmartPLS. The study found that environmental strategies created economic values for these environmental proactive manufacturing organisations—these benefits were transformed into enhanced financial performance. Similarly, Foo et al. (2018) gathered responses from a total of 178 large ISO14001-certified manufacturers in Malaysia through self-administered questionnaires. The study found that green practices did contribute to their corporate sustainability performance in terms of economic, environmental, and social sustainability performance.

In short, the positive relationship between green practices and the corporate sustainability performance at the organisational level was validated by a large number of empirical studies, including studies that focused on the organisations in the manufacturing sector in Malaysia. With respect to the resource-based view theory and natural-resource-based view theory, it was deemed evident that the implementation of green practices would contribute major impact on the corporate sustainability performance of the chemical manufacturing organisations in Malaysia. Hence, the following hypothesis was proposed for testing in this study:

H1: Green practices significantly affect the corporate sustainability performance.

2.14.2 Relationship between Islamic Work Ethics and Corporate Sustainability Performance

There are several positive implications of work ethics on the organisational outcomes, such as organisational performance. Ethical practices and implementation are very important for organisational functioning (Mohd Abdul et al., 2010). Creating an ethical climate and practising ethical codes are likely to create many advantages, such as the efficiency and productivity towards achieving the success of organisational performance. According to Bensaid (2013), Islam improves the overall human conditions through the practice of morality, such as extending kind treatment, acting gentleness and mercy, and comforting others. Abbas and Weir (2005) noted that the Islamic work ethics collectively inspires social contract and encourages a better focus in meeting organisational task and goals. Employees in such organisation are likely to feel more attached and responsible for the organisational success (Salih et al., 2012).

Studies have demonstrated a positive relationship between ethics and organisational outcomes (Luthans, 2002). Developing and implementing ethic codes would serve the long-term objectives of the organisations (Gooderham & Nordhaug, 2003). Berrone et al. (2007) argued that ethics and business are related; acting ethically is ultimately in the best financial interest for an organisation. Organisations that follow ethical practices contribute to the organisational success that creates wealth for the

stakeholders and promotes the well-being of the society as a whole (Barutcugil, 2004; Berrone et al., 2007; Donker et al., 2008; Mead, 1998; Mohd Abdul et al., 2010). The employment of ethical business practices can enhance the relationships with suppliers and consumers and improve organisational productivity with respect to the regulations set by the government agencies (Certo, 1992). Embracing ethics in an organisation can create value for organisations in several areas. Organisations that reflect moral leadership tend to create a positive public image and organisational culture (Mead, 1998). Ethical organisations can gain a number of advantages, such as improved communication, efficiency, and employee accountability and added competitive advantages (Barutcugil, 2004).

With that, the potential of Islamic work ethics in improving the quality and performance of organisations has been widely supported (Abbas & Abdullah, 2008; Kumar & Raduan, 2010; Mohd Abdul et al., 2010; Muhammad Shakil, 2011; Wan Norhasniah, 2012). For instance, Abdus Sattar, Kashif, et al. (2012) empirically found a positive relationship between the Islamic work ethics and organisational performance. The inculcation of Islamic work ethics in the organisational culture would contribute to sustainable business performance (Abdus Sattar, Kashif, et al., 2012). Abdus Sattar, Ghulam Mustafa, et al. (2012) also demonstrated the positive effect of the Islamic work ethics on the organisational performance. Othman et al. (2011) implied that employees who hold the values of Islamic work ethics would do their best to ensure that the organisational goals are met and consequently, better performance outcomes are achieved. Similarly, Berrone et al. (2007) claimed that acting ethically at the workplace would be reflected in the performance outcomes.

Krishna et al. (2011) revealed a significant relationship between business ethics and business success. In another recent study, Anna Marina and Sentot Imam (2017) qualitatively assessed the relationship between Islamic work ethics and sustainable business at Muhammadiyah hospital in Indonesia. The results of the study showed that the application of Islamic work ethics at the hospital ensured the sustainability of the hospital, which would benefit the hospital, related stakeholders, local community, and the government. Ahmad and Kalsom (2013) focused on the organisational performance of small organisations in Indonesia and found significant effect of Islamic values on their organisational performance in terms of sales growth. As

stated by Ahmad and Kalsom (2013), the Islamic practices can be seen as an added value to the organisational performance for the owners or managers.

When it comes to the Malaysian context, Abdullah et al. (2018) found a positive relationship between positive values such as responsibility and accountability on the sustainability performance of microenterprises in Kelantan. Abdullah et al. (2018) extended the resource-based-view theory to explain the positive values such as responsibility and accountability that are rare, valuable, non-substitutable, and inimitable, as organisation-specific internal competencies may exert a positive effect on the sustainability performance of enterprises. Therefore, this study proposed the following hypothesis:

H2: The Islamic work ethics significantly affects the corporate sustainability performance.

2.14.3 Islamic Work Ethics as a Moderator in the Relationship between Green Practices and Corporate Sustainability Performance

According to Prillwitz and Barr (2011), the attitude towards green practices and sustainability for segmentation approaches can be a fruitful attempt to improve the effectiveness of sustainability. Apart from effective systems and technologies to attain sustainability, the mindset, culture, and values of an organisation also affect green practices (Kulkarni et al., 2014). The factor of inner growth is significantly correlated to pro-environmental attitudes, sustainable lifestyles, life satisfaction, and the desire to contribute to society (Witt et al., 2014). Besides that, environmental collaboration that involves managing appropriately selected suppliers with a positive mindset serves as an essential approach that aids organisations to develop exceptionally great skills towards achieving better environmental competence (Ali et al., 2013; Caniëls et al., 2013; Yu et al., 2017).

The role of religion in protecting the natural environmental system has gained growing acknowledgement in the literature (Chappel & Tucker, 2000; Foltz et al., 2003; Hessel & Ruether, 2000; Tucker & Williams, 1997). Zeeda Fatimah et al. (2012) demonstrated the potential role of religious communities in promoting green

practices that went beyond the general idealism on the positive influence of religious values or ethics on environmental protection. Supporting the above argument, many studies have assured the potential of Islamic work ethics to improve the quality and performance of organisations (Abbas & Abdullah, 2008; Kumar & Raduan, 2010; Mohd Abdul et al., 2010; Muhammad Shakil, 2011; Wan Norhasniah, 2012). In fact, ethical organisations gain more advantages in terms of communication, efficiency, employee accountability, and competitive advantages (Barutcugil, 2004).

The moderating role of Islamic work ethics has been widely acknowledged. The performance of an organisation can be measured using various important factors, such as Islamic work ethics; the Islamic work ethics was proved to be an important factor that strengthens the significant relationship between entrepreneurial orientation and organisational performance (Olanrewaju et al., 2018). Focusing on the Nigerian SMEs, Olanwareju et al. (2018) further revealed that the Islamic work ethics did improve the managerial practices in terms of organisational efficiency and quality and create a harmonious work environment. The Islamic work ethics provides guidelines that serve as an impetus for organisations to enhance effective management practices by facilitating their accomplishment and maintenance of quality and organisational success in a sustainable way (Olanwareju et al., 2018). Managers who display Islamic work values serve as a role model and motivate their workers to exert hard work, trustworthiness, novelty, loyalty to duty and the organisation, and improve their performance (Olanwareju et al., 2018).

Darwish (2001) found that the Islamic work ethics as a moderator strengthened the positive relationship between job satisfaction and organisational commitment. Syeda Madiha et al. (2013) similarly found that the Islamic work ethics moderated the relationship between ethical leadership and job satisfaction. Muhammad Irfan and Sana (2014) also demonstrated the moderation effect of the Islamic work ethics on the relationship between job stress and job satisfaction. Arshad et al. (2013) also reported similar findings, where Islamic work ethics moderated the relationship between organisational commitment and turnover intention. Likewise, Khurram et al. (2015) also found that Islamic work ethics moderated the relationship between organisational justice and work outcomes.

In another study, the moderating role of Islamic work ethics in the relationship between information disclosure and transparency and the performance of Islamic financial institutions in Nigeria was assessed (Sa'adatu Balarabe et al., 2019). The obtained results of the study demonstrated that the Islamic work ethics moderated the relationship between information disclosure and transparency and the performance of Islamic financial institutions in Nigeria. The study further concluded that organisations need to operate according to the Islamic values and principles for improved performance. In view of the above, the following hypothesis was proposed for testing:

H3: The Islamic work ethics moderates the relationship between green practices and the corporate sustainability performance.

2.14.4 Relationship between Organisation Size and Corporate Sustainability Performance

The performance of organisations varies according to their structural characteristics; for instance, several studies found a significant relationship between organisation size and organisational performance (Ong et al., 2019; Tarig et al., 2011; Yoon & Suh, 2018). Wang et al. (2018) found a positive relationship between organisation size and organisational performance in terms of economic, environmental, and social performance. Larger organisations are more capable to obtain innovative resources (Minagawa et al., 2007). A report by the European Commission highlighted that larger organisations are more likely to improve resource efficiency, implement recycling initiatives, provide green products and services, and establish a more environmentally management system (Wang et al., 2018). Unlike smaller organisations, larger organisations tend to display better sustainability performance (Chang et al., 2018). Nazirah (2010) noted that larger organisations tend to have a higher awareness of environmental sustainability than their smaller counterparts.

Younger organisations tend to be smaller in size and less productive and profitable (Coad et al., 2013). Certain SMEs overlook the established rules and regulations and still mainly rely on high consumption of resources in the attempt to achieve the development of their organisations (Loucks et al., 2010). Smaller businesses tend to

have fewer technological options and thus, encounter greater capability barriers to adopt sustainability practices (Chang et al., 2018; Kostka et al., 2013). Unlike large organisations, SMEs lack the motivation to improve their sustainability performance due to various constraints, such as limited resources and technological capabilities and fewer opportunities to obtain benefit from the implementation of sustainability strategies (Torugsa et al., 2012). Similarly, Moore and Manring (2009) indicated that it is difficult for SMEs to adopt sustainability practices due to the high costs and resource demands. Williamson et al. (2006) also highlighted that the adoption of socially responsible behaviours among SMEs is typically not voluntary and forced by other factors such as regulations due to the various constraints they encounter. It is a challenge to motivate SMEs to be invested in sustainability (Chang et al., 2018).

Ahmad and Kalsom (2013) reported that organisation size significantly affected the performance of small organisations in Indonesia, specifically in terms of sales growth. Besides that, Ho et al. (2018) assessed the relationship between organisation size and corporate social performance using a panel of 380 public companies of various sizes across various types of industries in 19 countries (in North America, Europe, and Asia) over six years. Ho et al. (2018) further revealed that, as organisations grow in size, they can leverage their resources to achieve greater economies of scale that would lead to better corporate social performance over time. The study then concluded that organisation size serves as a key determinant of corporate sustainability performance; specifically, the larger the organisation, the better its corporate sustainability performance. Investing in corporate sustainability performance maximises profit through more efficient operational scale and provides many other non-financial benefits, such as capitalising, reacting, and managing environmentally and socially driven investment risks.

Prior empirical studies on corporate finance often considered organisation size as one of the important and fundamental characteristics for organisations. This factor was deemed noteworthy considering that business regulations or taxation policies often differ across different organisation sizes, which would affect the performance of organisations (Garicano et al., 2016; Garicano et al., 2017). For instance, McWilliams and Siegel (2001) demonstrated a positive linear effect of organisation size on the corporate social performance. Additionally, organisation size was

empirically found to positively influence the capital structure, where larger organisations may have higher leverage in external financing (Kurshev & Strebulaev, 2015).

Past studies on the relationship between organisation size and organisational performance also compared the level of competitiveness or corporate social performance of small and large organisations. For instance, Wolff and Pett (2006) noted that, unlike smaller organisations, larger organisations were found to demonstrate competitive patterns, which were consistent with their resource base, when it comes to the internationalisation of smaller organisations in the United States.

Studies have also validated the positive correlation between the corporate social performance and financial performance of large organisations (Orlitzky 2001; Schreck & Raithel 2015). Bamiatzi and Kirchmaier (2014), Lussier and Sonfield (2015) and Smith et al. (1989) reported that organisation size substantially affected the financial performance of organisations. In another recent study, Vu et al. (2019) reported a positive relationship between organisation size and organisational performance of different sectors in Vietnam, which included IT, industry, service consumption, petroleum, pharmaceuticals and health service, consumer goods, banking, materials, finance, and public utility sectors. Besides that, Yoon and Suh (2018) also reported a similar finding on the significant effect of organisation size on the performance of organisations in Korea.

Focusing on the Malaysian context, Mdolo et al. (2018) examined the influence of organisation size on the corporate sustainability performance of 49 public listed companies (listed in the Financial Times Stock Exchange Bursa Malaysia Top 100 companies) in Malaysia. The results proved the impact of organisation size on the drive towards corporate sustainability. In view of the above, this study proposed the following hypothesis for testing:

H4: Organisation size significantly affects the corporate sustainability performance.

2.14.5 Moderating Role of Organisation Size in the Relationship between Green Practices and Corporate Sustainability Performance

Environmental responsibility was found to be positively associated with organisation size, which indicates that larger organisations are more likely to follow environmental paths (Chen et al., 2017). Prior studies found that organisation size and industry in which an organisation operates can affect green innovation (Chen et al., 2006; Gil et al., 2001; Hofer et al., 2012; Kesidou & Demirel, 2012; Li, 2014).

Unlike smaller organisations, larger organisations are more likely to undertake environmental innovation. Larger organisations possess higher likelihood and extent of eco-innovations, which stems from the well-known advantages of large organisations in innovation (e.g. availability of finance and other resources for innovation and systemised research and departments) and the visibility and size of the organisations (e.g. the associated requirements that large organisations encounter to lower their environmental impact in order to satisfy green groups and governments) (Kesidou & Demirel, 2012). Large organisations also possess advanced information technology, such as consumer relationship management applications, and decision support systems, which facilitate the information flow within the supply chain, resulting in more efficient management of supply chains (Fawcett et al., 2009).

Organisation size, as a moderator, affects the relationship between the management mode and the development of organisations (Chung et al., 2003). Carr and Pearson (1999) proposed that organisation size should be identified as a moderator when it comes to assessing the sustainability performance of organisations. Organisation size was said to affect the implementation of environmental practices at the organisational level; larger organisations basically have more available resources and receive greater environmental pressure than smaller organisations (Vanpoucke et al., 2014). Therefore, managers who work at organisations of different sizes should adopt different management methods. Furthermore, different organisation sizes have different approaches to supply chain management, where large organisations pay more attention to the development of the entire supply chain (Wang et al., 2018).

Vijayvargy et al. (2017) studied the influence of organisation size on the relationship between green supply management practices and the organisational performance of automobile, electrical or electronic, food processing, paint, chemical, and manufacturing or machining tool industries in the emerging economies like India. The study found that green supply chain management practices did improve the operational performance of medium-sized and large organisations. In another recent study, Fok et al. (2019) assessed the effect of organisational size on the culture, green movement, quality management, and organisational success of the organisations in the retail, health care, and manufacturing sectors in the southern region of the United States. The study revealed that larger organisations exhibited a higher level of organisational performance. Therefore, the following hypothesis was proposed for testing:

H5: Organisation size moderates the relationship between green practices and the corporate sustainability performance.

2.14.6 Relationship between Organisation Age and Corporate Sustainability Performance

Empirical studies revealed that assessing the effect of organisation age generally means comparing younger and older organisations or comparing entrants and incumbents (Coad et al., 2018). Kipesha (2013) found that organisation age, which reflects the experience of the organisation, positively affected the sustainability of the organisation. Organisations improve with age (Coad et al., 2013). Older organisations have greater experience and knowledge in making use of the information on the economic situation to change their strategies and subsequently, react quickly and flexibly (Noor Azina & Hashem Salarzadeh, 2014). Over time, older organisations are likely to have more opportunities to internally develop their knowledge resources and to acquire knowledge from the external sources (Park et al., 2015).

Prior studies found that organisation age (in years since the establishment of an organisation) and the industry in which an organisation operates affected green innovation of the organisation (Chen et al., 2006; Gil et al., 2001; Hofer et al., 2012;

Kesidou & Demirel, 2012; Li, 2014). As experience is perceived to be a contributing factor towards improving organisational performance, older organisations are hypothesised to perform better than younger organisations (Alimin Ismadi et al., 2010). According to Noor Azina and Hashem Salarzadeh (2014), younger organisations are not able to utilise information on the economic situation to come up with specific plans and actions to improve their organisational performance due to the lack of established routines and processes that are needed to guide their strategic decision. Ahmad and Kalsom (2013) similarly found that organisation age significantly affected the performance of smaller organisations in Indonesia, particularly in terms of sales growth. Therefore, this study proposed the following hypothesis:

H6: Organisation age significantly affects the corporate sustainability performance.

2.14.7 Moderating Role of Organisation Age in the Relationship between Green Practices and Corporate Sustainability Performance

Organisation age, which is deemed to open new research opportunities in various fields, can be included as a moderator in a study at the organisational level (Coad et al., 2018). A large body of literature suggested that organisation age affects the growth of an organisation (Coad et al., 2018). Shrivastava and Tamvada (2019) demonstrated the importance of green practices for middle-aged organisations. The obtained results of the study also suggested the need to change greening strategies as the organisations mature (Shrivastava & Tamvada, 2019). Over time, green practices may result in cost-savings and efficiency gains for the organisations (Shrivastava & Tamvada, 2019). Ford et al. (2014) suggested that organisations may go beyond compliance requirements in pursuit of competitive strategy. The proactivity to go beyond compliance requirements positively affect the organisational performance in the long run (Delmas et al., 2015). According to Bayoud et al. (2012), the longevity of a business creates expertise and adequate competence for the organisation to develop green innovation and improve their organisational performance.

Azimah Ainuddin et al. (2007), Ketokivi and Schroeder (2004) and, Morgan et al. (2004) demonstrated a significant moderating role of organisation age in the relationship between competitive advantage and organisational performance, where

organisation age was defined in terms of new and old plants (Ketokivi & Schroeder, 2004). Alimin Ismadi et al. (2010) similarly tested the moderating role of organisation age in the relationship between competitive advantage and organisational performance. The obtained results demonstrated that organisation age moderated this particular relationship. In another study, Hui et al. (2013) tested the moderating role of organisation age in the relationship between organisation innovation and organisational performance and proved organisation age as a moderator in this relationship. The results demonstrated the influence of organisation age for the organisations to develop organisational routines to efficiently and effectively perform their activities (Hui et al., 2013). Thus, the moderating role of organisation age in the relationship between green practices and the corporate sustainability performance was tested in the current study. Therefore, the following hypothesis was proposed for testing:

H7: Organisation age moderates the relationship between green practices and the corporate sustainability performance.

2.15 List of Proposed Hypotheses

The proposed hypotheses for testing in this study are listed in the following Table 2.19.

Table 2.19 Research Hypotheses

Research Hypotheses	
H1	Green practices significantly affect the corporate sustainability performance.
H2	The Islamic work ethics significantly affects the corporate sustainability performance.
H3	The Islamic work ethics moderates the relationship between green practices and the corporate sustainability performance.
H4	Organisation size significantly affects the corporate sustainability performance.
H5	Organisation size moderates the relationship between green practices and the corporate sustainability performance.
H6	Organisation age significantly affects the corporate sustainability performance.
H7	Organisation age moderates the relationship between green practices and the

	corporate sustainability performance.

2.16 Chapter Summary

This chapter reviewed the past studies on green practices, Islamic work ethics, organisation size, organisation age, and corporate sustainability performance, followed by the discussion of the underpinning theories of this study. Based on the past studies, research gaps in literature were discussed. Next, the research framework and development of hypotheses were presented in this chapter. The following figure presents the research framework and proposed hypotheses in this study. The next chapter discusses the methodology used in terms of research design, nature and sources of data, population and sampling, measurement, pilot study, data collection, and data analysis in this study.

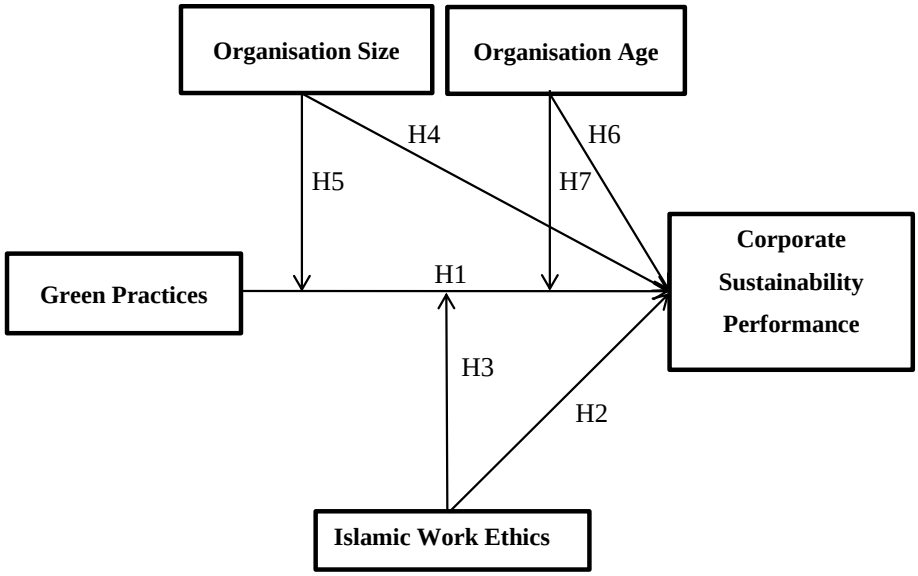


Figure 2.5 Research Framework and Proposed Hypotheses for Testing

CHAPTER 3

MATERIALS AND METHODOLOGY

3.1 Introduction

This chapter describes the methodology used in the present study to examine the effects of green practices on the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age. This chapter also discusses the research paradigm, research design, population and sample, sampling technique, measurement of variables, and data analysis.

3.2 Research Paradigm

Bryman (1988) defined paradigm as a cluster of beliefs and dictates that influence researchers in a particular discipline on what should be studied, how research should be done, and how results should be interpreted. In particular, Fensel (1992) highlighted the most used research paradigms, namely the positivist paradigm and constructivist paradigm. The positivist paradigm researchers use quantitative methods (Bryman, 1989; Fensel, 1992; Rocco et al., 2003) and primarily employ deductive logic (Rocco et al., 2003), while the constructivist paradigm researchers use qualitative methods (Fensel, 1992). Generally, positivism includes a scientific study of objective social reality (Bryman, 1989; Jupp, 2006) whereas constructionism is concerned with the study of ways that involve social interactions (Jupp, 2006). Table 3.1 summarises the main features of both positivist paradigm and constructivist paradigm.

Table 3.1 The Main Features of the Positivist Paradigm and Constructivist Paradigm

Quantitative (Positivistic) Paradigm	Qualitative (Constructivist) Paradigm
Applies scientific principles	Applies understanding principles
Uses prediction	Uses exploration
Values objectivity	Values inter-subjectivity
Aims to produce quantitative data	Aims to produce qualitative data

Uses large (statistical) samples	Uses small (theoretical) samples
Concerned with hypothesis testing	Concerned with generating theories
Highly specific and precise data	Rich and descriptive data

Source: Hussey & Hussey (1997)

The existing literature reflects the expectation of how a particular phenomenon is likely to behave, from which a researcher can formalise a model or paradigm (Remenyi et al., 1998). The existing corporate sustainability studies showed the extensive application of quantitative methods. Furthermore, the positivist paradigm in numerous studies of a similar area was widely used. Hence, as for this study, the positivist paradigm was applied, where a quantitative method, specifically the use of a questionnaire survey, was employed for the purpose of collecting the required data.

3.3 Research Approach

As for this study, the deductive approach was selected because this study focused on explaining the relationship between green practices and the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age. Singh (2006) described the deduction approach as a process that involves general expectations of the problems or events based on presumed relationships between variables in order to arrive at more specific expectations. The deductive approach allows the study to establish hypotheses using the relevant theory (Creswell, 2002). Thus, this study involved formulating and testing relevant hypotheses based on the review of the current theories (Saunders et al., 2012).

Crowther and Lancaster (2009) posited that deductive research, in relation to the positivism paradigm, is based on the general idea to reach a specific situation. Ahmad and Kalsom (2013) employed quantitative deductive hypotheses testing methods to examine the effects of Islamic practices on smaller organisations in North Sumatera, Indonesia. Similarly, Ahmad et al. (2014) employed quantitative deductive hypothesis testing methods to assess the organisational performance. Another recent study by Sartor et al. (2019) also applied a similar method. Thus, the quantitative deductive method was chosen in this study.

Both quantitative approach and qualitative approach are widely used in research. The quantitative approach is predominantly used for any data collection technique (such as questionnaire survey) or data analysis procedure (such as graphs or statistics) that generates or uses numerical data (Saunders et al., 2009). Unlike the quantitative approach, the qualitative approach is used predominantly for any data collection technique (such as interview) or data analysis procedure (such as categorising data) that generates or uses non-numerical data (Saunders et al., 2009). The three main sources of data in qualitative research are participant observation, unstructured or semi-structured interview, and examination of documents (Bryman, 2003).

As indicated, the quantitative approach involving numerical data and statistical analysis was considered for this study. Quantitative researchers direct a considerable amount of activities towards measuring specific concepts with scales that either directly or indirectly provide numerical values for comparison (Zikmund et al., 2010). In quantitative research, the responses of the respondents are coded, categorised, and reduced to numbers; the data may also be subjected to manipulation for statistical analysis (Cooper & Schindler, 2008). After all, the quantitative approach is generally linked to a deductive approach, as the key aim involves the testing of theory (Kutaula, 2014).

For example, Salwa Hanim et al. (2017) applied the quantitative approach, specifically the survey method and structural equation modelling (SEM), to evaluate the relationship between sustainable manufacturing practices and corporate sustainability performance of 443 manufacturers with ISO 14001 certification in Malaysia. Other studies that similarly applied the quantitative approach were Abdullah et al. (2018), Foo et al. (2018), Mdolo et al. (2018), Muhammad Kashif et al. (2019), Pham and Kim (2019), Shadi Kafi et al. (2018), and Xue et al. (2019).

3.4 Research Time Horizon

This study is a cross-sectional study. Cross-sectional studies involve collecting data at one point in time (Bryman, 1989; Gray, 2004) and often employ the survey method (Easterby-Smith et al., 2008; Gray, 2004; Robson, 2002). The nature of the current study was set as cross-sectional, which was due to the numerous advantages

it offers (Singh, 2006). Most field studies are cross-sectional in nature due to the time (Gray, 2004; Saunders et al., 2009), effort, and costs involved to collect data over different points of time in longitudinal studies (Sekaran, 2003). Cross-sectional studies have the advantages of gathering data promptly, as the data collection is conducted at one point in time, which is more economical, and all samples are available at a single point of time (Singh, 2006). Moreover, cross-sectional studies involve a one-time interaction with the samples (Raed & Abdul-Nasser, 2018). Singh (2006) added that cross-sectional studies involve a relatively large number of subjects, where all subjects have the opportunity to be selected at a time. Other similar cross-sectional studies on sustainability were Ahmad et al. (2014), Chow and Chen (2012), Raed and Abdul-Nasser (2018) and Salwa Hanim et al. (2017).

3.5 Research Design

A research design is a master plan that specifies the methods and procedures for collecting and analyzing the required data in terms of the sources of data, design technique, and sampling strategy (Zikmund et al., 2010). An explanatory research design was considered for this study given its focus on the causal relationships between variables (Singh, 2006), specifically green practices, Islamic work ethics, organisation size, organisation age, and corporate sustainability performance, with respect to the objectives of this study and the corresponding research questions. Raed and Abdul-Nasser (2018) employed an explanatory research design to examine the relationship between the adoption of sustainability practices in the organisational strategies and the overall performance of the organisations. In particular, Raed and Abdul-Nasser (2018) conducted a self-administered survey among senior managers of the various organisations in the Middle East and North Africa region.

3.6 Research Strategies

This study employed the survey method. A survey requires the direct participation of respondents to complete a questionnaire (Zikmund et al., 2010). In most cases, this method is typically related to the deductive approach (Saunders et al., 2009). A survey is a popular and common method in business and management research and most frequently used to answer questions of “who”, “what”, “where”, and/or “how

much/many" (Saunders et al., 2009). The purpose of survey research is to collect primary data; typically, a survey attempts to describe what happens or to understand the reasons for a particular business activity (Zikmund et al., 2010).

There are many advantages of conducting a survey, such as the scientific nature of the method and data accuracy involved (Zikmund et al., 2010). A survey involves the administration of questionnaire sets to a sample, where all data are standardised to compare (Saunders et al., 2009) and acquire a certain understanding or explanation (Saunders et al., 2009). Besides that, a properly conducted survey provides a quick, inexpensive, efficient, and accurate means of assessing information about a population of interest (Saunders et al., 2009; Zikmund et al., 2010).

Chow and Chen (2012) applied the survey method to examine the corporate sustainable development among 314 managers in mainland China using the developed and validated survey items. Most environmental studies applied the survey method (Sharma et al., 2007) due to its broad and purely perceptual view (Montabon et al., 2007). Xue et al. (2019) also applied the survey method to examine the relationship between green innovation and organisational performance among 253 operating companies in China—the developed questionnaire comprised of close-ended questions. Other sustainability studies that also employed the survey method at the organisational level were Abdullah et al. (2018), Foo et al. (2018), Hussain Ali Mohammed Barham et al. (2019), Muhammad Kashif et al. (2019), Muhammad Usman et al. (2019), Ong et al. (2019), Pham and Kim (2019), Shadi Kafi et al. (2018), Syed Abdul Rehman et al. (2019), Tulus et al. (2018), and Yuary and Abdul Talib (2019).

3.7 Population

There are five important sectors that contribute to the Malaysian economy, which are manufacturing sector, agriculture sector, mining sector, construction sector, and services sector (DOSM, 2019; Eleventh Malaysia Plan, 2015). For this study, the manufacturing sector was chosen due to various reasons. Firstly, the manufacturing sector contributed a high amount of GHG (19% of the total GHG emission) with an annual growth of 3.6% (IEA, 2014). Secondly, the manufacturing sector was the

highest contributor to the country's environmental expenditure (DOSM, 2019). Thirdly, the manufacturing sector recorded the highest number of occupational accidents (DOSH, 2019). Fourthly, the manufacturing sector had its own unique environmental issues and concerns (Maliza Delima, 2012). According to FMM, the manufacturing sector is one of the leading sectors that contributed 22.7% of the country's GDP (DOSM, 2019). Despite that, the operations of manufacturing sector produce hazardous waste, which can jeopardise the health and welfare of living species and damage the natural habitats, if the problems are not properly addressed (Flannery & May, 2000; Maliza Delima, 2012).

There are 23 different types of industries group according to products manufactured listed under the manufacturing sector in Malaysia which are 1) food products and beverages, 2) tobacco products, 3) textiles, 4) wearing apparel; dressing and dyeing of fur, 5) tanning and dressing of leather; manufacture of luggage, handbags, saddlery, harness and footwear, 6) wood and of products of wood and cork, except furniture; manufacture of articles of straw and plaiting materials, 7) paper and paper products, 8) publishing, printing and reproduction of recorded media, 9) coke, refined petroleum products and nuclear fuel, 10) chemicals and chemical products, 11) rubber and plastic products, 12) other non-metallic mineral products, 13) basic metal, 14) fabricated metal products, except machinery and equipment, 15) machinery and equipment not elsewhere classified, 16) office, accounting and computing machinery, 17) electrical machinery and apparatus not elsewhere classified, 18) radio television and communication equipment and apparatus, 19) medical, precision and optical instruments, watches and clocks, 20) motor vehicles, trailers and semi-trailers, 21) other transport equipment, 22) manufacture of furniture; manufacturing not elsewhere classified, and 23) Recycling (FMM, 2017).

The chemical manufacturing industry is one of the important industries under the manufacturing sector, which was highlighted in the Eleventh Malaysia Plan (2015) given its important economic role (DOSM, 2019; Tong et al., 2019). However, the presence of chemicals in many products potentially contribute negative effects on sustainability, such as the public health and the environment (Hutt et al., 2016; Lozano et al., 2016; Mahmoud, 2017; Makarova et al., 2019; Moses, 2019; Nur Khairlida et al., 2018; Persson et al., 2019; Pruss-Ustun et al., 2016; Samuel et al.,

2013; Ta et al., 2016). Thus, the unit of analysis of this study involved chemical manufacturing organisations due to the sustainability issues, as highlighted above. The list of chemical manufacturing organisations in Malaysia is presented in Appendix A. 1.

3.8 Sample

There were 366 manufacturing organisations listed in the 2017 FMM report, as presented in Table 3.2. As shown in the table, Selangor recorded the highest number of chemical manufacturing organisations (185), followed by Johor (48), Pulau Pinang (38), Kuala Lumpur (37), Perak (24), Negeri Sembilan (12), Kedah (6), Melaka (5), Pahang (4), Terengganu (3), Sarawak (3), and Sabah (1). There is no chemical manufacturing organisation in Labuan (0), Perlis (0), and Kelantan (0). Employees from the middle to the top management who were involved with green practices were chosen as respondents, as this group of the employees know best about the organisations and make decisions in achieving sustainability.

Table 3.2 Number of Chemical Manufacturing Organisations by State

State	Number of Organisations	Number of Organisations (%)
Selangor	185	50.55
Johor	48	13.11
Pulau Pinang	38	10.38
Kuala Lumpur	37	10.11
Perak	24	6.56
Negeri Sembilan	12	3.28
Kedah	6	1.64
Melaka	5	1.37
Pahang	4	1.09
Terengganu	3	0.82
Sarawak	3	0.82
Sabah	1	0.27
Labuan	0	0
Kelantan	0	0
Perlis	0	0
Total	366	

Source: FMM (2017)

Meanwhile, Table 3.3 presents the number of chemical manufacturing organisations according to the organisation size. Table 3.4 presents the number of chemical manufacturing organisations according to the organisation age.

Table 3.3 Number of Chemical Manufacturing Organisations by Organisation Size

Organisation Size (Number of Employees)	Number of Organisations	Number of Organisations (%)
Small (74 and below)	193	52.7
Medium (75 to 200)	94	25.7
Large (201 and above)	79	21.6
Total	366	

Source: FMM (2017)

Table 3.4 Number of Chemical Manufacturing Organisations by Organisation Age

Organisation Age (Years)	Number of Organisations	Number of Organisations (%)
10 and below	44	12.0
11 to 20	66	18.0
21 to 30	131	35.8
31 to 40	65	17.8
41 and above	60	16.4
Total	366	

Source: FMM (2017)

Meanwhile, Table 3.5 presents the number of chemical manufacturing organisations according to the types of chemical manufacturing organisations.

Table 3.5 Number of Chemical Manufacturing Organisations by Types of Chemical Manufacturing Organisations

Types of Chemical Manufacturing Organisations	Number of Organisations	Number of Organisations (%)
1) Basic chemicals, except fertilisers, and nitrogen compounds	35	9.6
2) Fertilisers and nitrogen compounds	12	3.3
3) Plastics in primary forms and of synthetic rubber	21	5.7
4) Pesticides and other agro-chemical products	13	3.6
5) Paints, varnishes and similar coatings, printing ink, and mastics	37	10.1
6) Pharmaceuticals, medicinal chemicals, and botanical products	35	9.6
7) Soap and detergents, cleaning and polishing preparations, perfumes, and toilet preparations	65	17.8
8) Other chemical products that are not classified elsewhere	77	21
9) Man-made fibres	1	0.3
10) Mix of types	70	19.1
Total	366	

Source: FMM (2017)

3.8.1 Sample Size

Statistical power analysis has been widely used to calculate the sample size for PLS (Cappelleri et al., 1994; Cohen, 1988; Hair et al., 2014). Statistical power analysis, specifically G-Power 3.1, was used to calculate the required sample size for this study. Chuan (2006) highlighted the significance of using the formula of Cohen's statistical power analysis for higher accuracy to base decisions on the research findings with confidence. The analysis provides improved calculation of effect size and graphic options, supports both distribution-based and design-based input modes, and offers all types of power analyses for users (Hair et al., 2014).

There are five factors to be considered in performing statistical power analysis, specifically (1) significance level, (2) effect size, (3) desired power, (4) estimated variance, and (5) sample size (Cohen, 1998). According to Cohen (1988), effect size (f^2) refers to the ratio of explained variance and error variance, where f^2 of 0.02 reflects small effect; f^2 of 0.15 reflects medium effect; f^2 of 0.35 reflects large effect. Following the recommendation of Cohen (1988), a medium effect size (f^2 of 0.15) and nine predictors were considered for this study to achieve the power of interaction effect at 80%. Cohen (1992) proposed that a medium effect size is desirable to approximate the average size of observed effects in various fields. Accordingly, Table 3.6 presents the required sample size for this study, where the minimum number of samples from the target population of this study was 113 respondents.

Table 3.6 Sample Size

Number of Predictors	**Sample Size based on Power Analysis**		
	Effect size		
	Small (0.02)	**Medium (0.15)**	**Large (0.35)**
1	390	53	24
2	481	66	30
3	547	76	35
4	599	84	39
5	645	91	42
6	686	97	46
7	726	102	48
8	757	108	51
9	**788**	**113**	**54**
10	844	117	56
15	982	138	67
20	1060	156	77
30	1247	187	94
40	1407	213	110

Source: Green (1991)

3.8.2 Sampling Technique

The determination of an appropriate sampling plan involves the selection of the most appropriate sampling technique with respect to the objectives of the study (Zikmund et al., 2010). Accordingly, there are two types of sampling techniques, namely probability sampling techniques and non-probability sampling techniques. A probability sampling technique is most commonly associated with the survey method, where the researcher has to make inferences based on the gathered sample about the population of interest to answer the research question(s) or to meet the objective(s) (Saunders et al., 2009). In a probability sampling technique, every member of the population has an equal probability of being selected (Zikmund et al., 2010).

Taking the case of a probability sampling technique, Chun et al. (2013) used stratified random sampling to assess corporate ethics and organisational financial performance. The data for the study were drawn from a large-scale survey administered by the Korea Research Institute for Vocational Education and Training (KRIVET), a public agency in Korea. The samples of the study were from 401 private companies in Korea, which were selected based on organisation size, location, and industry. Besides that, Agbim (2018) also employed stratified sampling technique to select the respondents in the study of ethical leadership and organisational performance. With that, stratified random sampling technique was also employed in the current study. The following steps were applied:

1. The list of all important sectors in Malaysia was acquired.
2. Sector with critical sustainability issues (such as high GHG emission), the highest environmental expenditure, and the highest number of occupational accidents was identified and selected.
3. Industry with significant importance, high contribution to the Malaysian economy, and with high sustainability issues was identified and selected.
4. Samples from the selected industry by state (with high number of organisations in the industry) were identified and selected.

Firstly, all important sectors in Malaysia were listed. There are five important sectors that contribute to the Malaysian economy, specifically manufacturing sector, construction sector, mining sector, agriculture sector, and services sector (DOSM, 2019; Eleventh Malaysia Plan, 2015). Following that, the manufacturing sector was selected given its high GHG emission and link to the highest environmental expenditure and number of occupational accidents. Subsequently, under the manufacturing sector in Malaysia, the chemical manufacturing industry was chosen given its significant importance, high contribution to the Malaysian economy, and with high sustainability issues (Hutt et al., 2016; Lozano et al., 2016; Samuel et al., 2013; Ta et al., 2016). Referring to the FMM (2017) directory, potential chemical manufacturing organisations were identified for the distribution of self-administered questionnaires in Selangor (185), Johor (48), Pulau Pinang (38), Kuala Lumpur (37), Perak (24), and Negeri Sembilan (12)—these states recorded high number of chemical manufacturing organisations. These six states have been chosen due to the high number of chemical manufacturing organistions in the states. As there are many previous studies choose Selangor as the sample due to the highest number of chemical manufacturing organisations in Selangor, this study choose six states that have high number of chemical manufacturing organistions, in order to increase the sample size and in obtaining 35% to 40% response rate for organisational study as suggested by Baruch & Holtom (2008). The self-administered questionnaires were personally distributed to the respondents.

3.9 Demographic Profiles

For this study, the questionnaire consists of demographic profiles of the respondent. The demographic part consists of 4 questions which are 1) type of chemical manufacturing organisations; 2) number of workers in the organisation (organisation size); 3) operational period of the organisation (organisation age); and 4) the position of the respondent. Under the question number one which is type of chemical manufacturing organisation, the choice of answers consist of 1) basic chemicals, except fertilisers, and nitrogen compounds; 2) fertilisers and nitrogen compounds; 3) plastics in primary forms and of synthetic rubber, 4) pesticides and other agro-chemical products, 5) paints, varnishes and similar coatings, printing ink, and mastics, 6) pharmaceuticals, medicinal chemicals, and botanical products; 7) soap

and detergents, cleaning and polishing preparations, perfumes, and toilet preparations; 8) other chemical products that are not classified elsewhere; 9) man-made fibres; and 10) mix of types.

For question number two which is number of workers in the organisation (organisation size), the choice of answers consist of 1) 74 and below (small); 2) 75 to 200 (Medium); and 3) 201 and above (large). Under the question number three which is the operational period of the organisation (organisation age), the answers are divided into 1) 10 and below; 2) 11 to 20; 3) 21 to 30; 4) 31 to 40; and 5) 41 and above. Meanwhile for demographic question number four which is the position of the respondent, the answers consist of 1) Chief Executive Officer/President; 2) General Manager/Manager; and 3) Executive.

3.10 Measurement Items

Most of the measurement items in this study were adapted to fit the sample. Expert opinions were gathered to enhance the suitability of the adapted measurement items. The list of experts is presented in Appendix A. 2. Several academicians and chief executive officers of chemical manufacturing organisations were consulted to review the suitability of the content and the clarity of the measurement items as well as to provide feedback on how to enhance these measurement items. In addition, several focus group discussion sessions with the executive, manager, and chief executive of chemical manufacturing organisations (listed in Appendix A. 3) were also conducted. Similarly, they were required to review the suitability of the survey questions and the clarity of the measurement items in order to further enhance the developed instrument. Following that, the measurement items were modified according to the expert opinions and the output of the focus group discussion. Based on the opinion from the expert and from the focus group discussion, they were not many changes that need to be changed as most of them agreed on the suitability of the questions. Some of the comments were regarding on the grammar and structure of the items and the questionnaires have been sent to the grammar and structuring service for improvement of the items. A total of 99 measurement items were included to measure the variables of interest in this study. Table 3.7 presents the number and sources of measurement items in this study.

Table 3.7 Number and Sources of Measurement Items

Variables		Number of Items	Source(s)	Likert Scale
Green Practices	Waste Management	10	Malihe et al. (2014); McMurray et al. (2009); Nazmiye & Mehmet Emin (2007)	1–5
	Sustainable Design	10	Adarsha & Prathap (2013); Esty & Winston (2009); Krajnc & Glavic (2003); Zhu et al. (2008)	1–5
	Eco-Labelling	10	Chan (2013); Gertz (2005)	1–5
	Sustainable Procurement	10	Adarsha & Prathap (2013); Mcmurray et al. (2009); Zhu et al. (2008)	1–5
	Sustainable Marketing	10	Mayank & Amit (2013)	1–5
	Sustainable Lifestyles	10	Backhaus et al. (2012); Wan & Toppinen (2016)	1–5
Islamic Work Ethics		17	Abbas (1988); Darwish (2001)	1–5
Corporate Sustainability Performance	Economic	6	Chow & Chen (2012)	1–5
	Environment	10	Chow & Chen (2012)	1–5
	Social	6	Chow & Chen (2012)	1–5
Total		99		

3.10.1 Green Practices

Green practices refer to the organisations' practices to save the environment by minimising or eliminating the environmental impact of their operations (Linas et al., 2014). There are six dimensions of green practices, namely waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles (Aktin & Gergin, 2016; Chan, 2013; Khairul Naim et al., 2013; Kirama & Mayo, 2016; Kulkarni et al., 2014; Lin et al., 2013; Majerovaa, 2015; Maletic et al., 2014; Nadanyiova et al., 2015; Wan & Toppinen, 2016). In line

with the green initiatives in Malaysia, the implementation of green practices in an organisation aims to minimise the environmental impact of their management and operations. Table 3.8 presents the measurement items of green practices in this study.

Table 3.8 Measurement Items of Green Practices

Dimensions	No.	Measurement Items	Source(s)
Waste Management	1	The company does solid waste separation at source.	Malihe et al. (2014); McMurray et al. (2009); Nazmiye, & Mehmet Emin (2007)
	2	The company uses recycle paper in memo or notice.	
	3	The company composts chemical waste.	
	4	The company purchases materials with recyclable feature.	
	5	The company cooperates with recycling organisations.	
	6	The company focuses on waste reduction at the functional area within the company.	
	7	The company analyses its internal processes to minimise waste.	
	8	The company begins working together with some supply chain partners to eliminate waste.	
	9	All supply chain partners understand the end-to-end processes to eliminate waste throughout the supply chain.	
	10	All supply chain partners work together to eliminate waste throughout the supply chain.	
Sustainable Design	11	The company designs products that reduce consumption of materials.	Adarsha & Prathap (2013); Esty & Winston (2009); Krajnc & Glavic (2003);
	12	The company designs products that reduce consumption of energy.	
	13	The company designs products that reuse, recycle, and recover materials and component parts.	
	14	The company designs products that avoid or reduce the use of hazardous products in the manufacturing process.	

Dimensions	No.	Measurement Items	Source(s)
	15	The company cooperates with consumers for eco-design.	Zhu et al. (2008)
	16	The company designs products that meet environmental regulations and safety standards.	
	17	The company designs products that have the least weight and capacity that reduces the time consumption.	
	18	The company designs products that have the least capacity for the area stores.	
	19	The company designs products that require the least energy for the transportation process.	
	20	The company designs products that are easy to set up for users in the most energy-saving way.	
Eco-Labelling	21	The company uses eco-label on the packaging of products.	Chan (2013); Gertz (2005)
	22	The company uses eco-label to improve its market position compared to competitors.	
	23	The company uses eco-label to give more leeway in setting prices.	
	24	The company uses eco-label to produce positive consumer response.	
	25	The company uses eco-label to make it easier to win new consumers.	
	26	The company uses eco-label to simplify product placement in the retail sector.	
	27	The company uses eco-label to improve the sales of products.	
	28	The company uses eco-label as an effective promotional tool in the industry.	
	29	The company uses eco-label as a tool to create incentives for companies to change the market.	
	30	The company often uses eco-label on the corporate website as a competitive advantage.	
Sustainable Procurement	31	The company cooperates with suppliers for environmental objectives.	Adarsha &

Dimensions	No.	Measurement Items	Source(s)
	32	The company does environmental audit for the suppliers' internal audit.	Prathap (2013); McMurray et al. (2009); Zhu et al. (2008)
	33	The company's suppliers have ISO14000 certification.	
	34	The second-tier supplier has environmentally friendly proactive evaluation.	
	35	The company provides design specification to the suppliers, which includes environmental requirements for purchased items.	
	36	The company uses a life cycle analysis to evaluate the environmental friendliness of products and packaging.	
	37	The company ensures safe, incoming movement of products to the company facilities.	
	38	The company asks the suppliers to commit to the waste reduction goals.	
	39	The company ensures that the suppliers participate in the design of products for recycling or reuse.	
	40	The company participates in the design of products for disassembly.	
Sustainable Marketing	41	The company ensures brand loyalty by manufacturing products through environmentally friendly process.	Mayank & Amit (2013)
	42	The company educates consumers to use products in an environmentally friendly manner.	
	43	The company advertises positive environmentalism through environmentally friendly product packaging.	
	44	The company continually reminds consumers through the advertisements of eco-friendly products.	
	45	The company develops a reputation for manufacturing environmentally friendly products.	
	46	The company promotes products through eco-	

Dimensions	No.	Measurement Items	Source(s)
		friendly modes of communication.	
	47	The company uses green supply chain for procurement and distribution.	
	48	The company brands product associating with green marketing practice.	
	49	The company uses green initiatives to attract new market opportunities.	
	50	The company uses green marketing to make consumers aware of environmentally friendly business.	
Sustainable Lifestyles	51	The company eco-improves the office for good working environment.	Backhaus et al. (2012); Wan & Toppinen (2016)
	52	The company uses energy and water wisely in its daily operations.	
	53	The company extends the life of things to minimise waste.	
	54	The company chooses eco-products and services as the main business.	
	55	The company travels sustainably for organisational programmes to reduce energy use.	
	56	The company sets up and uses resources efficiently in the community.	
	57	The company uses and future-proofs outdoor spaces for a sustainable lifestyle.	
	58	The company involves in improving the environment by showing positive cooperation among the community.	
	59	The company practices sustainable lifestyle as its goal.	
	60	The company produces eco-friendly products because it is important for the consumers' healthy growth.	

3.10.2 Islamic Work Ethics

The Islamic work ethics is defined as "good character", which is shaped as a successful practising of Al-Quran and practices and sayings of Prophet Muhammad (S.A.W) (Abbas & Abdullah, 2008). These items represented the positive attitudes that measured the moderation effect of the Islamic work ethics on the relationship between green practices and the corporate sustainability performance. This study assessed the Islamic work ethics at the organisational level, as most previous studies assessed the Islamic work ethics on an individual basis. In other words, the Islamic work ethics was measured based on the perception of the employees towards the organisational practices. Table 3.9 presents the adapted measurement items of Islamic work ethics in this study.

Table 3.9 Measurement Items of Islamic Work Ethics

Variable	No.	Measurement Items	Source(s)
Islamic Work Ethics	1	The company agrees that laziness at the workplace should be avoided.	Abbas (1988); Darwish (2001)
	2	The company agrees that employees need to be dedicated towards work.	
	3	The company agrees that good work benefits both company and employees.	
	4	The company agrees that justice and generosity at the workplace are necessary for the employees.	
	5	The company believes that employees who produce more than enough to meet company's needs contribute to the prosperity of society as a whole.	
	6	The company encourages employees to carry out the work to the best of their ability.	
	7	The company believes that employees foster personal growth and social relations.	
	8	The company believes that employees' life has no meaning without work.	
	9	The company believes that more leisure time	

Variable	No.	Measurement Items	Source(s)
		is not good for society.	
	10	The company emphasises and encourages human relations in the organisation.	
	11	The company believes that employees who work are able to control their environment and accomplishment.	
	12	The company prioritises creative work as a source of happiness and accomplishment.	
	13	The company believes that employees who work well are more likely to get ahead in life.	
	14	The company believes that work gives employees the chance to be independent.	
	15	The company stresses on the importance of employees to meet deadlines at work for success.	
	16	The company encourages employees to constantly work hard to meet responsibilities.	
	17	The company believes that work is derived from intention and results, rather than just results.	

3.10.3 Corporate Sustainability Performance

Corporate sustainability performance refers to the dynamic state that arises when an organisation develops continuous shareholders' and stakeholders' values of maintaining the well-being of the economy, environment, and society as a long-term goal (Elkafi et al., 2012; Mohammd Ghozali et al., 2016). There are three dimensions of corporate sustainability performance, namely economic, environmental, and social sustainability performance (Elkington, 1998). Table 3.10 presents the measurement items of corporate sustainability performance.

Table 3.10 Measurement Items of Corporate Sustainability Performance

Dimensions	No.	Measurement Items	Source(s)
Social Sustainability Performance	1	The company improved health and safety for employees or community.	Chow & Chen (2012)
	2	The company recognised and acted on the need to fund local community initiatives.	
	3	The company protected claims and rights of aboriginal people or local community.	
	4	The company showed concern for the visual aspects of the organisation's facilities and operations.	
	5	The company communicated the organisational environmental impacts and risks to the general public.	
	6	The company considered the interests of stakeholders in investment decisions by creating a formal dialogue.	
Economic Sustainability Performance	7	The company sold waste products for revenue.	
	8	The company reduced costs of inputs for the same level of outputs.	
	9	The company reduced costs for waste management for the same level of outputs.	
	10	The company worked with the government officials to protect the organisation's interest.	
	11	The company created spin-off technologies that can be profitably applied to other areas of the business.	
	12	The company differentiated the process or product based on the marketing efforts of the environmental performance of the process or product.	
Environmental Sustainability Performance	13	The company reduced energy consumption.	
	14	The company reduced wastes and emissions from the operations.	

Dimensions	No.	Measurement Items	Source(s)
	15	The company reduced impact on animal species and natural habitats.	
	16	The company reduced the environmental impacts of its products or services.	
	17	The company reduced environmental impact by establishing partnership.	
	18	The company reduced the risk of environmental accidents, spills, and releases.	
	19	The company reduced purchases of non-renewable materials, chemicals, and components.	
	20	The company reduced the use of traditional fuels through the substitution of some less polluted energy sources.	
	21	The company undertook voluntary actions (for example, actions that are not required by regulations) for environmental restorations.	
	22	The company undertook actions for environmental audit, public disclosure, employee training, and immunity.	

3.10.4 Organisation Size

This study assessed the moderating role of organisation size. Organisation size in this study referred to the number of employees in an organisation. Numerous past studies also similarly measured organisation size in terms of the number of employees in an organisation (Azimah Ainuddin et al., 2007; Ling et al., 2007; Mohd Khairuddin & Mustafa, 2007; Morgan et al., 2004). In other words, organisation size was measured based on the number of employees currently in employment (Azimah Ainuddin et al., 2007; Mohd Khairuddin & Mustafa, 2007; Morgan et al., 2004) using the nominal scale and/or ordinal scale (categorical variable) (Sekaran, 2003). Table 3.11 presents the classification of organisation size, which was applied in this study.

Table 3.11 Organisation Size

Classification	Number of Employees
Small	74 and below
Medium	75 to 200
Large	201 and above

Source: FMM (2017)

3.10.5 Organisation Age

This study assessed the moderating role of organisation age. Organisation age in this study referred to the number of operating years for an organisation since its establishment. Numerous past studies also similarly measured organisation age in terms of the number of years the organisation has been in operation (Azimah Ainuddin et al., 2007; Mohd Khairuddin & Mustafa, 2007; Morgan et al., 2004) using the nominal scale or ordinal scale (categorical variable) (Sekaran, 2003). For this study, the organisation age was classified into five classes, as shown in Table 3.12.

Table 3.12 Organisation Age

Organisation Age (Years)
10 and below
11 to 20
21 to 30
31 to 40
41 and above

3.11 Validity

Validity measures what a scale intends to measure (Yi, 2009). It is grouped into face validity, content validity, criterion validity, and construct validity (Sekaran, 2003). Firstly, face validity refers to the extent to which an instrument appears as though it would measure what it is intended to measure (Gray, 2004). Secondly, content validity refers to the extent to which the measurement device (the measurement questions in the questionnaire) provides adequate coverage of the investigative

questions (Saunders et al., 2009). Meanwhile, criterion validity or also called as statistical validity or empirical validity refers to the extent to which a scale performs as expected in relation to certain external variables or criteria (Yi, 2009). Criterion validity can be in the form of either concurrent validity or predictive validity (Bryman, 2003). Last but not least, construct validation entails drawing hypotheses about the likely connection between the concept of interest and another concept (Bryman, 2003). Construct validity is assessed in terms of convergent validity and discriminant validity (Sekaran, 2003). For this study, the content validity of the variables was reaffirmed, as the experts reviewed the content and measurement items based on their expert knowledge of the study; a pilot study was conducted for verification, and the variables were developed based on a comprehensive review of the literature.

3.12 Reliability

Reliability refers to the consistency of a measure (Bryman, 2003). The reliability of a measure indicates the extent to which the measure is without bias (error-free); thus, ensuring consistent measurement across time and items in the instrument (Sekaran, 2003). According to Saunders et al. (2009), reliability refers to the extent to which the data collection technique or analysis procedure would yield consistent results. Reliability is assessed in terms of composite reliability (Hair et al., 2014). For this study, composite reliability was used to confirm internal consistency. The value of composite reliability varies between 0 and 1, where a higher value indicates a higher level of reliability (Hair et al., 2014). According to Nunally and Bernstein (1994), a value of between 0.60 and 0.70 is deemed acceptable for exploratory research, while a value of between 0.70 and 0.90 is regarded satisfactory for a more advanced stage of research. This study used composite reliability based on the suggested cut-off value of 0.70 (> 0.70) by Nunally and Bernstein (1994).

3.13 Measurement Scale

There are four types of measurement scales of different levels of measurement: (1) nominal scale; (2) ordinal scale; (3) interval scale; (4) ratio scale (Hair et al., 2014). A nominal scale or also referred to as categorical scale assigns numbers that are used

to identify and classify objects (for examples, people, companies, and products) (Hair et al., 2014). Ordinal scale allows the researcher to assign values by placing or arranging the observations in relative rank order (Singh, 2006). An interval scale displays all the characteristics and relationships of the ordinal scale, where the distance between any two numbers on the scale is known (Singh, 2006). Meanwhile, a ratio scale is a measurement with equal differences between points corresponding to equal differences on the scale (Gray, 2004).

As for this study, an interval Likert scale was used. The Likert scale, which was developed by Rensis Likert, is the most frequently used summated rating scale (Cooper & Schindler, 2008). Unlike many other measurement scales, a Likert scale is deemed more reliable and provides a greater volume of data (Cooper & Schindler, 2008). With the use of a Likert scale, the respondents are required to indicate how strongly they agree or disagree with a series of statements provided (Gray, 2004). Each response is given a numerical score to reflect its degree of attitudinal favorableness and the scores are summed to measure the respondents' overall attitude (Cooper & Schindler, 2008).

The most used Likert scale in research is the five-point Likert scale with the endpoints of strongly disagree (1) and strongly agree (5) (Singh, 2006), which was applied in the current study. When it comes to a five-point Likert scale, the respondents are basically required to specify their level of agreement with the provided statements according to a typical five-ordered response level (Winter & Dodou, 2010). The use of the five-point Likert scale has become the norm because this scale strikes a compromise between the conflicting goals of affecting enough choice and making things manageable for the respondents (John, 2010). In particular, the respondents in this study were required to provide their responses on green practices, Islamic work ethics, and corporate sustainability performance according to the five-point Likert scale with the endpoints of strongly disagree (1) and strongly agree (5). Meanwhile, the nominal scale was used to collect the demographic information of the respondents in this study.

3.14 Pilot Study

A pilot study detects any limitation in the design and instrumentation; depending on the method selected, the sample size required in a pilot study ranges from 25 to 100 subjects (Cooper & Schindler, 2008). After considering the comments provided by the experts (to validate the validity of the developed instrument), a pilot study was conducted, which involved the distribution of questionnaire sets across 50 chemical manufacturing organisations in Malaysia that implemented green practices. Table 3.13 presents the demographic information of the participating organisations in this pilot study.

Table 3.13 Demographic Profile of Respondents in Pilot Study

Demographic Information	Frequency	Percentage (%)
Types of Chemical Manufacturing Organisations		
1) Basic chemicals, except fertilisers, and nitrogen compounds	3	6
2) Fertilisers and nitrogen compounds	1	2
3) Plastics in primary forms and of synthetic rubber	2	4
4) Pesticides and other agro-chemical products	3	6
5) Paints, varnishes and similar coatings, printing ink, and mastics	7	14
6) Pharmaceuticals, medicinal chemicals, and botanical products	5	10
7) Soap and detergents, cleaning and polishing preparations, perfumes, and toilet preparations	10	20
8) Other chemical products that are not classified elsewhere	11	22
9) Man-made fibres	0	0
10) Mix of types	8	16
Organisation Size (Number of Workers)		
74 and below (Small)	28	56
75 to 200 (Medium)	12	24
201 and above (Large)	10	20
Organisation Age (Years)		
10 and below	7	14

Demographic Information	Frequency	Percentage (%)
11 to 20	9	18
21 to 30	20	40
31 to 40	8	16
41 and above	6	12
Position		
Chief Executive Officer/President	3	6
General Manager/Manager	12	24
Executive	35	70

Adding to that, Cronbach's alpha coefficient was applied as a statistical tool to evaluate the reliability of the collected data. According to Hair et al. (1998), the minimum acceptable value for Cronbach's alpha ranges between 0.60 and 0.70. Table 3.14 presents the results of the reliability test based on the collected data in the pilot study. The values of Cronbach's alpha for all variables ranged between 0.779 to 0.932, which exceeded the minimum acceptable value of 0.70, as recommended by Hair et al. (2006). The assessment of confirmatory factor analysis was deemed not practical at this point due to the small sample size involved (the sample size was only 50) (Myers et al., 2011). Thus, the factor loadings were only examined after the actual data collection along with the review of the internal reliability.

Table 3.14 Results of Reliability Test Based on the Feedback of 50 Chemical Manufacturing Organisations in Pilot Study

Variables		Number of Items	Internal Reliability (Cronbach's Alpha)
Green Practices	Waste Management	10	0.779
	Sustainable Design	10	0.856
	Eco-Labelling	10	0.895
	Sustainable Procurement	10	0.837
	Sustainable Marketing	10	0.921
	Sustainable Lifestyles	10	0.932
Islamic Work Ethics		17	0.920
Corporate Sustainability	Economic Sustainability Performance	6	0.877

Performance	Environmental Sustainability Performance	10	0.921
	Social Sustainability Performance	6	0.879

3.15 Data Collection

For this study, the self-administered questionnaire method was used due to its numerous advantages (Bryman, 2003). Self-administered questionnaires are usually completed by the respondents (Bryman, 2003; Saunders et al., 2009), where the respondents take the responsibility of reading and answering the questions (Hair et al., 2006; Zikmund et al., 2010). The respondents are more likely to provide honest answers in a self-administered questionnaire, as compared to interview questions (Dillman, 2007). Unlike the interview method, this particular method minimises the tendency of social desirability bias (when sensitive data are requested) and is invariably cheaper and less time-consuming (when a large of geographically dispersed sample is involved) (Bryman, 2003).

The support letter from Universiti Tenaga Nasional to acquire access to the chemical manufacturing organisations in Malaysia was acquired prior to the distribution of questionnaire sets. The support letter from Universiti Tenaga Nasional is presented in Appendix B. 1 and the developed questionnaire set is attached in Appendix B. 2. The self-administered questionnaires were distributed using the drop-and-collect method to a total of 344 chemical manufacturing organisations in Malaysia: (1) Selangor (185); (2) Johor (48); (3) Pulau Pinang (38); (4) Kuala Lumpur (37); (5) Perak (24); (6) Negeri Sembilan (12). All respondents were given two weeks to complete the questionnaire; for the unreturned questionnaires within the stipulated timeframe, the collection time was then extended to another one week for the respondents. The respondents were first informed that their participation was completely voluntary and all personal information would be kept confidential and anonymous.

The drop and collect method has been done as it gives many advantages to the researcher as it can increase the number of response rate compared to email method. By giving the questionnaire to the respective respondent it will increase the

willingness of the respondent to answer the questionnaire. Besides that, brief explanation about the questionnaire also has been done towards the respondent, and any questions arise from the respondent at that time could be answered in informing the clarity about the questionnaire to the respondent. Some of the questionnaires have been dropped at the guard house and the guard has informed the respective respondents regarding the questionnaires, and some of the questionnaires have been given directly to the respective respondents by making appointment with the respective respondents. The respondents consist of middle to top level management (executive, manager, general manager, chief executive officer, president of the company) that were involved with green practices were chosen as respondents, as this group of the employees know best about the organisations and make decisions in achieving sustainability. Before distributing the questionnaire, the respondent has been informed about the research and respondents that are related to the survey and know best in answering the questionnaire has been informed to answer the questionnaire.

3.16 Data Analysis

A range of statistical data analyses was used to analyse the obtained data using the IBM SPSS. The relationships between the variables of interest were evaluated based on the obtained statistical results and compared to the reported results of prior studies. Firstly, descriptive analysis was conducted to acquire the demographic profile of the respondents, specifically the types of chemical manufacturing organisations, organisation size, and organisation age. In particular, the values of mean, standard deviation, skewness, and kurtosis were computed. Meanwhile, structural equation modelling (SEM), which is a quasi-standard in management research to analyse the cause-effect relations between latent constructs (Hair et al., 2011), was considered for the testing of hypotheses in this study.

3.16.1 Structural Equation Modelling (SEM)

SEM is a second-generation technique that has been increasingly used in numerous studies in order to overcome the limitations of the first-generation technique (Hair et al., 2014). According to Hair et al. (2014), there are two types of SEM, namely the

covariance-based SEM (CB-SEM) and partial least square-structural equation modelling (PLS-SEM). The latter was used in this study due to its numerous advantages, such as high level of statistical power, no distributional assumptions, and minimal amount of unexplained variance (Hair et al., 2014).

3.16.2 Partial Least Square-Structural Equation Modelling (PLS-SEM)

Using PLS-SEM, theories can be developed based on the variance in the dependent variables when examining the models (Hair et al., 2014). PLS-SEM uses the available data to estimate the path relationships in the model with the objective of minimising the error terms (for example, the residual variance) of the endogenous constructs (Hair et al., 2014). In other words, PLS-SEM estimates the coefficients (for example, path model relationships) that maximise the R^2 values of the (target) endogenous constructs (Hair et al., 2014). Therefore, PLS-SEM is the preferred choice for a study that focuses on theory development and explanation of variance (prediction of the constructs) (Hair et al., 2014). Table 3.15 presents the key characteristics of PLS-SEM.

Table 3.15 Key Characteristics of PLS-SEM

Data Characteristics	
Sample Size	• No issue with small sample size. • Generally, achieves high level of statistical power, even with small sample size. • A larger sample size increases the precision (consistency) of the PLS-SEM estimations.
Distribution	• No distributional assumptions (as PLS-SEM is a non-parametric technique).
Missing Values	• Highly robust (as long as missing values are below a reasonable level).
Measurement Scale	• Works with metric data, quasi-metric (ordinal) scaled data, and binary-coded variables (with certain restrictions). • Some limitations for categorical data (to measure endogenous latent variables).
Model Characteristics	
Number of Items in	• Handles constructs that are measured with single and multi-

Each Measurement Model	item measures.
Relationships between Constructs and Indicators	• Easily incorporates reflective and formative measurement models.
Model Complexity	• Handles complex models with many structural model relations. • A larger number of indicators reduces bias.
Model Setup	• No causal loops allowed in the structural model (only recursive model).
PLS-SEM Algorithm Properties	
Objective	• Minimises the amount of unexplained variance (maximises the R^2 values).
Efficiency	• Converges after a few iterations (even in situations with complex models and/or large sets of data) to an optimum solution—efficient algorithm.
Construct Scores	• Estimated as linear combinations of their indicators. • Used for predictive purposes. • Can be used as input for the subsequent analyses. • Not affected by data inadequacies.
Parameter Estimates	• Structural model relationships are generally underestimated (PLS-SEM bias). • Measurement model relationships are generally overestimated (PLS-SEM bias). • Consistency at large. • High level of statistical power.
Model Evaluation Issues	
Evaluation of the Overall Model	• No global goodness-of-fit criterion.
Evaluation of the Measurement Models	• Reflective measurement models: Reliability and validity assessments by multiple criteria. • Formative measurement models: Validity assessment, significance and relevance of indicator weights, indicator collinearity.
Evaluation of the Structural Model	• Collinearity among sets of constructs, significance of path coefficients, coefficient of determination (R^2), effect size

	(f^2), predictive relevance (Q^2 and q^2 effect size).
Additional Analyses	• Impact-performance matrix analysis • Mediation effects • Hierarchical component models • Multigroup analysis • Uncovering and treating unobserved heterogeneity • Measurement model invariance • Moderation effects

Source: Hair et al. (2014)

3.16.3 Descriptive Analysis

Descriptive analysis summarises, organises, and simplifies data quantitatively in a more manageable form (Mann, 2007). The descriptive results can be used to make inferences on the characteristics of the population of interest (Zikmund et al., 2010). Descriptive analysis (i.e. frequencies, mean, and standard deviation) was applied to determine the number of workers in an organisation (organisation size) and number of operating years for an organisation since its establishment (organisation age) for the characterisation of the sample in this study.

3.16.4 Assessment of Measurement Model

A reflective measurement model was considered for this study. A reflective measurement model is a measurement model setup that assumes the construct causes the measurement of the indicator variables, where the arrow (→) is directed from the construct to the indicator variables (Hair et al., 2014; Hair Jr et al., 2016). The assessment of reflective measurement model includes composite reliability (to evaluate internal consistency), individual indicator reliability, and average variance extracted (AVE) (to evaluate convergent validity) and discriminant validity (Hair et al., 2014; Mohammad Dalvi et al., 2018). Table 3.16 presents the evaluation of the measurement model and structural model for a reflective measurement model.

Table 3.16 Systematic Evaluation of PLS-SEM Results

Evaluation of Reflective Measurement Model
• Internal consistency (composite reliability) • Indicator reliability • Convergent validity (AVE) • Discriminant validity
Evaluation of Structural Model
• Coefficients of determination (R^2) • Predictive relevance (Q^2) • Size and significance of path coefficients • f^2 effect size • q^2 effect size

Source: Hair et al. (2014)

3.16.4.1 Internal Consistency Reliability

In PLS, the assessment of a reflective measurement model includes composite reliability to evaluate internal consistency (Hair et al., 2014). The composite reliability varies between 0 and 1, where a higher value indicates a higher level of reliability (Hair et al., 2014). According to Nunally and Bernstein (1994), a value of between 0.60 and 0.70 is deemed acceptable for exploratory research, while a value of between 0.70 and 0.90 is regarded satisfactory for a more advanced stage of research. A value that exceeds 0.90 is not desirable, as it indicates that all indicator variables measure the same phenomenon and, therefore, unlikely to be a valid measure of the construct (Hair et al., 2014).

3.16.4.2 Convergent Validity

Convergent validity is the extent to which a measure correlates positively with the alternative measures of the same construct (Hair et al., 2014). On a similar note, Muslim et al. (2016) described convergent validity as the degree to which multiple items measure the same concept. In order to establish convergent validity, the outer loadings of the indicators and values of AVE are considered (Amin et al., 2018; Hair

et al., 2014). High outer loadings on a construct indicate that the associated indicators have much in common under the same construct (Hair et al., 2014). According to Hair et al. (2014), a common rule of thumb is that the outer loadings should be 0.708 or higher. Nevertheless, a common measure to establish convergent validity at the construct level is based on the average variance extracted (AVE) (Fornell & Larcker, 1981; Hair et al., 2014). AVE of 0.50 or higher indicates that, on average, the construct explains more than half of the variance of its indicators (Hair et al., 2014).

2.16.4.3 Discriminant Validity

Discriminant validity is the degree to which items measure different concepts or items differentiate among constructs (Hair et al., 2014; Muslim et al., 2016). Ramayah et al. (2018) described three different types of criteria to assess the discriminant validity, namely cross-loadings, Fornell and Larcker's (1981) criterion, and heterotrait-monotrait ratio of correlations (HTMT). As for the cross-loadings of the indicators, the outer loadings of the indicator on the associated construct should exceed all loadings on other constructs (Hair et al., 2014). On the other hand, for Fornell and Larcker's (1981) criterion, AVE of every construct must exceed its correlation, as compared to other constructs (Anderson & Gerbing, 1988). Meanwhile, when it comes to HTMT, there are two ways to assess the discriminant validity (Ramayah et al., 2018), where HTMT of more than 0.85 (Kline, 2011) or of 0.90 (Gold et al., 2001) indicates discriminant validity problem. Although HTMT is not a new approach, Henseler et al. (2015) proposed the use of HTMT as a new criterion in SEM to address the limitations of the two former approaches in detecting discriminant validity.

3.16.5 Assessment of Structural Model

According to Hair et al. (2014), the subsequent step after confirming the measures of the construct involves the assessment of structural model that involves assessing the predictive capabilities of the model and the relationships between constructs. The assessment of structural model involves five steps (Hair et al., 2014):

Step 1: To assess the collinearity issues of the structural model

Step 2: To assess the significance and relevance of the relationships in the structural model

Step 3: To assess the level of coefficient of determination (R^2)

Step 4: To assess the effect size (f^2)

Step 5: To assess the predictive relevance Q^2 and q^2 effect sizes

3.16.5.1 Collinearity Assessment

Collinearity arises when two indicators are highly correlated in which when more than two indicators are involved, it is called multicollinearity (Hair et al., 2014). Analogous to the assessment of measurement models, the tolerance level should be below 0.20 (VIF of above 5.00) for the predictor constructs to indicate collinearity (Hair et al., 2014).

3.16.5.2 Structural Model Path Coefficients

The standardised values of path coefficients range between -1 and +1 (Hair et al., 2014). The estimated path coefficient that approaches +1 represents a strong, positive relationship that is almost always statistically significant (Hair et al., 2014). As the estimated coefficient approaches 0, the weaker the relationship is—such relationship is almost always not statistically significant (Hair et al., 2014).

3.16.5.3 Coefficient of Determination (R^2)

The coefficient of determination (R^2) is the most commonly used measure in the assessment of the structural model (Hair et al., 2014). The structural model can be assessed based on the explained variance (in percentage) in terms of R^2 of the latent dependent variable (Hair et al., 2014). The value of R^2 represents the amount of variance in the endogenous constructs explained by the entire exogenous construct (Hair et al., 2014). Ramayah et al. (2018) described R^2 as the coefficient of determination that denotes how much of the variance in the dependent variable explained by the independent variable. The value of R^2 ranges between 0 and 1, with

a higher level indicates a higher level of predictive accuracy—it is not a straightforward process to set the rules of thumb for an acceptable value of R^2, as it depends on the model complexity and the research discipline (Hair et al., 2014). R^2 of 2.0 is considered high for disciplines such as consumer behaviour whereas R^2 of 0.75 and above is expected for success driver studies (Hair et al., 2014).

3.16.5.4 Effect Size (f^2)

The effect size of f^2 refers to the change in R^2 when a specified exogenous construct is omitted from the model reflects whether the omitted construct exhibits substantive impact on the endogenous construct (Hair et al., 2014). The guidelines to assess f^2 are as follows: (1) f^2 of 0.02 represents small effect; (2) f^2 of 0.15 represents medium effect; (3) f^2 of 0.35 represents large effect (Cohen, 1988).

3.16.5.5 Predictive Relevance (Q^2) and Blindfolding Technique

When PLS-SEM exhibits predictive relevance, it accurately predicts the data points of indicators in reflective measurement models of endogenous constructs and endogenous single-item constructs (Hair et al., 2014). When it comes to the structural model, Q^2 that exceeds zero for a certain reflective endogenous latent variable indicates the predictive relevance of the path model for this particular construct (Hair et al., 2014). Meanwhile, the blindfolding technique is only applied to endogenous constructs with a reflective measurement model specification as well as to endogenous single-item constructs (Hair et al., 2014). Blindfolding is a sample reuse technique that omits every *d*-th data point in the indicators of the endogenous construct and estimates the parameters with the remaining data points (Chin, 1998). The omitted data points are considered missing values and treated accordingly when the PLS-SEM algorithm runs (Hair et al., 2014). In short, the blindfolding technique is an interactive process that repeats until each data point is omitted with the re-estimation of the model (Hair et al., 2014).

3.16.5.6 Moderating Testing in PLS

A moderator is a variable that affects the relationship between two variables; thus, the nature of the impact of the predictor on the criterion varies according to the level or value of the dependent variable (Holmbeck, 1997). Ramayah et al. (2018) visualised moderator as a third variable that changes the relationship between the independent variable and dependent variable. According to Hair et al. (2014), the moderation effect occurs when the effect of an independent variable on a dependent variable depends on the level or value of another variable that moderates the relationship. Figure 3.1 shows the moderated relationship.

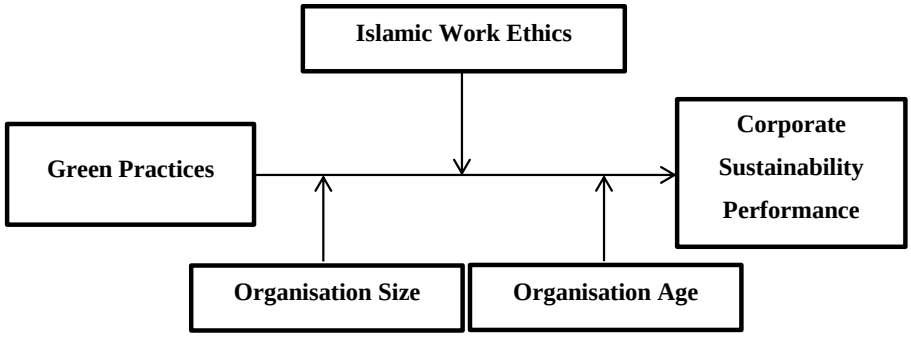


Figure 3 1 Research Framework with Moderators

In assessing the moderation effect in PLS, the R^2, f^2 and the interaction plot need to be taken into the consideration (Ramayah et al., 2018). In the moderation analysis, the R^2 becomes an important issue in which it indicates that the addition of the interaction term has changed about how many percentages (additional variance) (Ramayah et al., 2018). After looking at the R^2 value, the effect size (f^2) also need to be considered in determining the moderation effect. As stated by Cohen (1988), the value of f^2 indicates 0.02 (small), 0.15 (medium), and 0.35 (large) interaction effect. According to Chin (2010) even a small interaction effect is found, it is important to take these considerations into an account. For the interaction plot in assessing the moderating effect, Dawson (2014) suggested that to follow up for the significant interactions, an interaction plot can be drawn.

3.17 Chapter Summary

This chapter discussed the methodology used in this study to examine the relationship between green practices and the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age. In particular, the chemical manufacturing organisations in Malaysia represented the sample of this quantitative study of explanatory research design. This chapter also discussed on the population and sample, operationalised variables, development of the instrument, pilot study, data collection, and data analysis (where PLS-SEM served as the main statistical technique in this study).

CHAPTER 4

RESULT AND DISCUSSION

4.1 Introduction

This chapter discusses the obtained empirical results of statistical analyses, especially the PLS-SEM results. This chapter also discusses the results of descriptive analysis and the results of hypothesis testing. This chapter ends with some brief conclusions regarding the data analysis.

4.2 Survey Response Analysis

4.2.1 Response Rate

Referring to the 2017 FMM report (48th edition), there were 366 chemical manufacturing organisations in Malaysia back in 2017. A total of 344 chemical manufacturing organisations were invited to participate in the survey. As a result, only 135 questionnaire sets were returned, with 130 usable sets, resulting in a response rate of 38%. There is clear evidence that a low response rate is deemed acceptable for studies that focus on the organisational level (or top executive level) (Baruch & Holtom, 2008). A response rate of about 35% to 40% was recently reported as a benchmark (Baruch & Holtom, 2008), which indicates the increased difficulty in obtaining responses from a target population (Baruch & Holtom, 2008). The highest average response rate was found in the services sector and the lowest average response rate was found in various other sectors (Baruch & Holtom, 2008). Thus, the recorded response rate of 38% in this study that focused on the chemical manufacturing industry (at the organisational level) was deemed acceptable. Table 4.1 presents the total number of distributed questionnaire sets, the total number of returned questionnaire sets, the total number of usable questionnaire sets, and the overall response rate in this study.

Table 4.1 Response Rate

Total Number of Distributed Questionnaire Sets	Total Number of Received Questionnaire Sets	Total Number of Usable Questionnaire Sets	Response Rate
344	135	130	38%

4.2.2 Demographic Profile of Respondents

A total of 130 chemical manufacturing organisations were included in this study. There were nine types of chemical manufacturing organisations classified under the FMM. Most of the participating chemical manufacturing organisations (26.2%) were involved in the following type: "other chemical products that are not classified elsewhere". This was then followed by "soap and detergents, cleaning and polishing preparations, perfumes, and toilet preparations" (20.8%). Meanwhile, most of the participating chemical manufacturing organisations (49.2%) recorded small organisation size (74 and below workers) whereas the category of large organisation size (201 and above) had the least number of participating chemical manufacturing organisations. As for the organisation age, most of the participating organisations recorded 21 to 30 years (46.9%) whereas only 7.7% of the participating organisations recorded 41 and above years. For the position, most of the postion was executive followed by general manager/manager and the least was chief executive officer/president. Table 4.2 presents the demographic profile of the respondents and Table 4.3 presents the organisation age and organisation size crosstabulation.

Table 4.2 Demographic Profile of Respondents

Demographic Information	Frequency	Percentage (%)
Types of Chemical Manufacturing Organisations		
1) Other chemical products that are not classified elsewhere	34	26.2
2) Soap and detergents, cleaning and polishing preparations, perfumes, and toilet preparations	27	20.8
3) Mix of types	25	19.2
4) Paints, varnishes and similar coatings, printing	17	13.1

Demographic Information	Frequency	Percentage (%)
ink, and mastics		
5) Pharmaceuticals, medicinal chemicals, and botanical products	11	8.5
6) Basic chemicals, except fertilisers, and nitrogen compounds	6	4.6
7) Pesticides and other agro-chemical products	5	3.8
8) Plastics in primary forms and of synthetic rubber	4	3.1
9) Fertilisers and nitrogen compounds	1	0.8
10) Man-made Fibres	0	0
Organisation Size (Number of Workers)		
74 and below (Small)	64	49.2
75 to 200 (Medium)	37	28.5
201 and above (Large)	29	22.3
Organisation Age (Years)		
10 and below	18	13.8
11 to 20	21	16.2
21 to 30	61	46.9
31 to 40	20	15.4
41 and above	10	7.7
Position		
Chief Executive Officer/President	15	11.54
General Manager/Manager	40	30.77
Executive	75	57.69

Table 4.3 Organisation Size and Organisation Age Crosstabulation

Organisation Size	Organisation Age					Total
	10 and below	11 to 20	21 to 30	31 to 40	41 and above	
74 and below (Small)	11	10	30	9	4	64
75-200 (Medium)	5	6	19	6	1	37
201 and above (Large)	2	5	12	5	5	29
Total	18	21	61	20	10	130

4.3 Data Screening

For this study, the process of data cleaning was conducted using IBM SPSS (Preacher & Hayes, 2008), as the software package offers several formats of outputs for effective data handling (Meyers, 2005; Tabachnick & Fidell, 2013) during the initial stages of data analysis. The process of data screening is deemed necessary to ensure correct data entry and free from missing data and outliers.

4.3.1 Missing Values

The case of missing values occurs when a respondent either purposely or inadvertently fails to answer one or more question(s) (Hair et al., 2014). When the number of cases of missing data exceeds 15%, the observation is typically removed from the data file (Hair et al., 2014). For this study, five questionnaire sets were removed, as the number of cases of missing data exceeded the suggested limit of 15% (Hair et al., 2014).

4.3.2 Outliers

Outliers refer to observations with an extreme value on one variable (a univariate outlier) or a strange combination of scores on two or more variables (multivariate outlier) that distort statistics (Tabachnick & Fidell, 2013). The outliers can be determined based on the results of 5% trimmed mean. The 5% trimmed mean refers to the mean that exists in the case of the removal of 5% of the extreme ends (2.5% of the bottom and 2.5% of the top). Hence, in order to assess the possible influence of outliers, the 5% trimmed mean of each measure was evaluated, as compared to its corresponding mean. Table 4.4 presents the results of 5% trimmed mean of the items in this study, which revealed that all data were free from outliers.

Table 4.4 Results of 5% Trimmed Mean

Variables	Measurement Items	Mean	5% Trimmed Mean
Waste Management (WM)	WM1	4.054	4.141
	WM2	4.146	4.227
	WM3	3.831	3.919
	WM4	3.462	3.462

Variables	Measurement Items	Mean	5% Trimmed Mean
	WM5	3.723	3.765
	WM6	4.039	4.111
	WM7	3.954	4.021
	WM8	3.592	3.628
	WM9	3.553	3.586
	WM10	3.554	3.586
Sustainable Design (SD)	SD1	3.385	3.406
	SD2	3.508	3.551
	SD3	3.469	3.509
	SD4	3.769	3.842
	SD5	3.585	3.650
	SD6	4.077	4.154
	SD7	3.608	3.645
	SD8	3.539	3.568
	SD9	3.515	3.543
	SD10	3.546	3.586
Eco-Labelling (EL)	EL1	3.400	3.444
	EL2	3.392	3.333
	EL3	3.300	3.393
	El4	3.431	3.231
	EL5	3.277	3.256
	EL6	3.215	3.333
	EL7	3.354	3.444
	EL8	3.346	3.436
	EL9	3.208	3.333
	EL10	3.231	3.479
Sustainable Procurement (SP)	SP1	3.708	3.774
	SP2	3.554	3.615
	SP3	3.485	3.539
	SP4	3.446	3.496
	SP5	3.439	3.483
	SP6	3.346	3.385
	SP7	3.708	3.936
	SP8	3.554	3.363

Variables	Measurement Items	Mean	5% Trimmed Mean
	SP9	3.485	3.355
	SP10	3.446	3.276
Sustainable Marketing (SM)	SM1	3.600	3.645
	SM2	3.584	3.620
	SM3	3.785	3.785
	SM4	3.362	3.389
	SM5	3.539	3.560
	SM6	3.462	3.483
	SM7	3.377	3.397
	SM8	3.408	3.423
	SM9	3.485	3.509
	SM10	3.500	3.534
Sustainable Lifestyles (SL)	SL1	3.808	3.868
	SL2	4.036	4.103
	SL3	4.031	4.077
	SL4	3.536	3.577
	SL5	3.500	3.526
	SL6	3.954	3.776
	SL7	3.462	3.492
	SL8	3.631	3.680
	SL9	3.715	3.765
	SL10	3.639	3.688
Islamic Work Ethics (IWE)	IWE1	4.423	4.350
	IWE2	4.361	4.521
	IWE3	4.423	4.521
	IWE4	4.300	4.470
	IWE5	4.123	4.521
	IWE6	4.331	4.402
	IWE7	4.332	4.350
	IWE8	3.777	3.940
	IWE9	3.562	3.970
	IWE10	4.246	4.128
	IWE11	3.708	3.987
	IWE12	4.139	4.205

Variables	Measurement Items	Mean	5% Trimmed Mean
	IWE13	3.900	4.410
	IWE14	4.146	4.402
	IWE15	3.915	3.842
	IWE16	4.085	3.611
	IWE17	3.931	4.308
Social Sustainability Performance (SOP)	SOP1	4.207	3.748
	SOP2	3.884	4.188
	SOP3	3.869	3.940
	SOP4	3.953	4.197
	SOP5	3.738	3.782
	SOP6	3.692	3.727
Economic Sustainability Performance (EP)	EP1	3.376	3.419
	EP2	3.592	3.628
	EP3	3.576	3.611
	EP4	3.946	3.500
	EP5	3.438	3.466
	EP6	3.530	3.551
Environmental Sustainability Performance (ENP)	ENP1	3.946	4.000
	ENP2	3.938	3.983
	ENP3	3.738	3.790
	ENP4	3.861	3.906
	ENP5	3.600	3.637
	ENP6	4.061	4.123
	ENP7	3.576	3.611
	ENP8	3.446	3.496
	ENP9	3.453	3.474
	ENP10	3.546	3.586

4.3.3 Common Method Variance

Common method variance should be examined when all data are collected via self-administered questionnaires and when both predictor and criterion variables are obtained from the same person (Podsakoff et al., 2003). For this study, Harman's single factor test was performed to examine the common method variance. The tabulated results in Table 4.5 revealed that the largest variance explained by an

individual factor was 36.029%, which indicates that common method variance does not affect the results (less than 50%) (Podsakoff & Organ, 1986).

Table 4.5 Results of Common Method Variance

Extraction Sums of Squared Loadings		
Total	**% of Variance**	**Cumulative %**
29.904	36.029	36.029

4.4 Descriptive Analysis

The results of the descriptive analysis in this study focused on the responses of the respondents on green practices (Table 4.6), Islamic work ethics (Table 4.7), and corporate sustainability performance (Table 4.8). For this study, all items were measured based on the five-point Likert scale with the endpoints of "strongly disagree" (1) and "strongly agree" (5). Based on the results of mean (a measure of central tendency) in all three tables, the average score mean values for all variables were above their midpoint level (3). Meanwhile, the values of standard deviation for all variables were above 0.60, which reflects considerable variation in the provided responses on green practices, Islamic work ethics, and corporate sustainability performance.

Referring to Table 4.6, the results showed that waste management recorded the highest average score mean value of 3.865 for green practices whereas eco-labelling recorded the lowest average score mean value of 3.298. On the other hand, the values of standard deviation for green practices exceeded 0.60, which reflects considerable variation in the provided responses on green practices.

Table 4.6 Descriptive Results for Green Practices

Variables	Measurement Items		Mean	SD
Waste Management (WM)	WM1	The company does solid waste separation at source.	4.054	0.991
	WM2	The company uses recycle paper in memo or notice.	4.146	0.941
	WM3	The company composts chemical waste.	3.831	1.087

Variables	Measurement Items		Mean	SD
	WM4	The company purchases materials with recyclable feature.	3.462	1.058
	WM5	The company cooperates with recycling organisations.	3.723	0.973
	WM6	The company focuses on waste reduction at the functional area within the company.	4.039	0.848
	WM7	The company analyses its internal processes to minimise waste.	3.954	0.947
	WM8	The company begins working together with some supply chain partners to eliminate waste.	3.592	0.978
	WM9	All supply chain partners understand the end-to-end processes to eliminate waste throughout the supply chain.	3.553	0.965
	WM10	All supply chain partners work together to eliminate waste throughout the supply chain.	3.554	0.989
	Average Score		**3.865**	**0.680**
Sustainable Design (SD)	SD1	The company designs products that reduce consumption of materials.	3.385	0.910
	SD2	The company designs products that reduce consumption of energy.	3.508	0.958
	SD3	The company designs products that reuse, recycle, and recover materials and component parts.	3.469	0.974
	SD4	The company designs products that avoid or reduce the use of hazardous products in the manufacturing process.	3.769	1.008
	SD5	The company cooperates with consumers for eco-design.	3.585	1.105
	SD6	The company designs products that meet environmental regulations and safety standards.	4.077	0.912
	SD7	The company designs products that have the least weight and capacity that reduces	3.608	0.936

Variables	Measurement Items		Mean	SD
		the time consumption.		
	SD8	The company designs products that have the least capacity for the area stores.	3.539	0.925
	SD9	The company designs products that require the least energy for the transportation process.	3.515	0.085
	SD10	The company designs products that are easy to set up for users in the most energy-saving way.	3.546	0.933
	Average Score		**3.701**	**0.808**
Eco-Labelling (EL)	EL1	The company uses eco-label on the packaging of products.	3.400	1.054
	EL2	The company uses eco-label to improve its market position compared to competitors.	3.392	1.096
	EL3	The company uses eco-label to give more leeway in setting prices.	3.300	1.104
	EL4	The company uses eco-label to produce positive consumer response.	3.431	1.078
	EL5	The company uses eco-label to make it easier to win new consumers.	3.277	1.027
	EL6	The company uses eco-label to simplify product placement in the retail sector.	3.215	1.027
	EL7	The company uses eco-label to improve the sales of products.	3.354	1.099
	EL8	The company uses eco-label as an effective promotional tool in the industry.	3.346	1.047
	EL9	The company uses eco-label as a tool to create incentives for companies to change the market.	3.208	1.036
	EL10	The company often uses eco-label on the corporate website as a competitive advantage.	3.231	1.103
	Average Score		**3.298**	**0.986**
Sustainable Procurement	SP1	The company cooperates with suppliers for environmental objectives.	3.708	1.074

Variables	Measurement Items		Mean	SD
(SP)	SP2	The company does environmental audit for the suppliers' internal audit.	3.554	1.201
	SP3	The company's suppliers have ISO14000 certification.	3.485	1.234
	SP4	The second-tier supplier has environmentally friendly proactive evaluation.	3.446	1.078
	SP5	The company provides design specification to the suppliers, which includes environmental requirements for purchased items.	3.439	1.011
	SP6	The company uses a life cycle analysis to evaluate the environmental friendliness of products and packaging.	3.346	1.062
	SP7	The company ensures safe, incoming movement of products to the company facilities.	3.708	0.997
	SP8	The company asks the suppliers to commit to the waste reduction goals.	3.554	1.022
	SP9	The company ensures that the suppliers participate in the design of products for recycling or reuse.	3.485	1.006
	SP10	The company participates in the design of products for disassembly.	3.446	1.004
	Average Score		**3.586**	**0.927**
Sustainable Marketing (SM)	SM1	The company ensures brand loyalty by manufacturing products through environmentally friendly process.	3.600	0.961
	SM2	The company educates consumers to use products in an environmentally friendly manner.	3.584	0.954
	SM3	The company advertises positive environmentalism through environmentally friendly product packaging.	3.785	0.966
	SM4	The company continually reminds	3.362	1.004

Variables	Measurement Items		Mean	SD
		consumers through the advertisements of eco-friendly products.		
	SM5	The company develops a reputation for manufacturing environmentally friendly products.	3.539	0.966
	SM6	The company promotes products through eco-friendly modes of communication.	3.462	0.958
	SM7	The company uses green supply chain for procurement and distribution.	3.377	0.950
	SM8	The company brands product associating with green marketing practice.	3.408	0.970
	SM9	The company uses green initiatives to attract new market opportunities.	3.485	0.998
	SM10	The company uses green marketing to make consumers aware of environmentally friendly business.	3.500	0.982
	Average Score		**3.504**	**0.840**
Sustainable Lifestyles (SL)	SL1	The company eco-improves the office for good working environment.	3.808	0.965
	SL2	The company uses energy and water wisely in its daily operations.	4.036	0.857
	SL3	The company extends the life of things to minimise waste.	4.031	0.816
	SL4	The company chooses eco-products and services as the main business.	3.536	0.966
	SL5	The company travels sustainably for organisational programmes to reduce energy use.	3.500	0.950
	SL6	The company sets up and uses resources efficiently in the community.	3.954	0.964
	SL7	The company uses and future-proofs outdoor spaces for a sustainable lifestyle.	3.462	0.933
	SL8	The company involves in improving the environment by showing positive cooperation among the community.	3.631	0.974

Variables	Measurement Items		Mean	SD
	SL9	The company practices sustainable lifestyle as its goal.	3.715	0.950
	SL10	The company produces eco-friendly products because it is important for the consumers' healthy growth.	3.639	0.965
	Average Score		**3.701**	**0.876**

Referring to Table 4.7, Islamic work ethics recorded an average score mean value of 4.062, where the mean values of all items exceeded the scale midpoint of 3.000. Overall, the chemical manufacturing organisations in this study demonstrated highly positive views on Islamic work ethics. Meanwhile, the values of standard deviation for green Islamic work ethics exceeded 0.60, which reflects considerable variation in the provided responses on Islamic work ethics.

Table 4.7 Descriptive Results for Islamic Work Ethics

Measurement Items		Mean	SD
IWE1	The company agrees that laziness at the workplace should be avoided.	4.423	0.825
IWE2	The company agrees that employees need to be dedicated towards work.	4.361	0.898
IWE3	The company agrees that good work benefits both company and employees.	4.423	0.796
IWE4	The company agrees that justice and generosity at the workplace are necessary for the employees.	4.300	0.868
IWE5	The company believes that employees who produce more than enough to meet company's needs contribute to the prosperity of society as a whole.	4.123	0.907
IWE6	The company encourages employees to carry out the work to the best of their ability.	4.331	0.801
IWE7	The company believes that employees foster personal growth and social relations.	4.332	0.741
IWE8	The company believes that employees' life has no meaning without work.	3.777	0.983
IWE9	The company believes that more leisure time is not good for	3.562	0.983

Measurement Items		Mean	SD
	society.		
IWE10	The company emphasises and encourages human relations in the organisation.	4.246	0.737
IWE11	The company believes that employees who work are able to control their environment and accomplishment.	3.708	0.919
IWE12	The company prioritises creative work as a source of happiness and accomplishment.	4.139	0.785
IWE13	The company believes that employees who work well are more likely to get ahead in life.	3.900	0.806
IWE14	The company believes that work gives employees the chance to be independent.	4.146	0.769
IWE15	The company stresses on the importance of employees to meet deadlines at work for success.	3.915	0.940
IWE16	The company encourages employees to constantly work hard to meet responsibilities.	4.085	0.845
IWE17	The company believes that work is derived from intention and results, rather than just results.	3.931	0.864
Average Score		**4.062**	**0.602**

Referring to Table 4.8, the items of all variables recorded mean values of above the scale midpoint of 3.000. Social sustainability performance recorded the highest average score mean value of 3.891, as compared to environmental sustainability performance (3.716) and economic sustainability performance (3.534). On the other hand, the recorded values of standard deviation were mostly above 0.60, which shows considerable variation in the provided responses on corporate sustainability performance.

Table 4.8 Descriptive Results for Corporate Sustainability Performance

Variables	Measurement Items		Mean	SD
Social Sustainability Performance (SOP)	SOP1	The company improved health and safety for employees or community.	4.207	0.784
	SOP2	The company recognised and acted on the need to fund local community initiatives.	3.884	0.886
	SOP3	The company protected claims and rights	3.869	0.820

		of aboriginal people or local community.		
	SOP4	The company showed concern for the visual aspects of the organisation's facilities and operations.	3.953	0.766
	SOP5	The company communicated the organisational environmental impacts and risks to the general public.	3.738	0.911
	SOP6	The company considered the interests of stakeholders in investment decisions by creating a formal dialogue.	3.692	0.833
	Average Score		**3.891**	**0.647**
Economic Sustainability Performance (EP)	EP1	The company sold waste products for revenue.	3.376	1.043
	EP2	The company reduced costs of inputs for the same level of outputs.	3.592	0.841
	EP3	The company reduced costs for waste management for the same level of outputs.	3.576	0.913
	EP4	The company worked with the government officials to protect the organisation's interest.	3.946	0.905
	EP5	The company created spin-off technologies that can be profitably applied to other areas of the business.	3.438	0.906
	EP6	The company differentiated the process or product based on the marketing efforts of the environmental performance of the process or product.	3.530	0.837
	Average Score		**3.534**	**0.698**
Environment Sustainability Performance (ENP)	ENP1	The company reduced energy consumption.	3.946	0.838
	ENP2	The company reduced wastes and emissions from the operations.	3.938	0.804
	ENP3	The company reduced impact on animal species and natural habitats.	3.738	0.911
	ENP4	The company reduced the environmental impacts of its products or services.	3.861	0.804

	ENP5	The company reduced environmental impact by establishing partnership.	3.600	0.840
	ENP6	The company reduced the risk of environmental accidents, spills, and releases.	4.061	0.775
	ENP7	The company reduced purchases of non-renewable materials, chemicals, and components.	3.576	0.843
	ENP8	The company reduced the use of traditional fuels through the substitution of some less polluted energy sources.	3.446	0.972
	ENP9	The company undertook voluntary actions (for example, actions that are not required by regulations) for environmental restorations.	3.453	0.863
	ENP10	The company undertook actions for environmental audit, public disclosure, employee training, and immunity.	3.546	0.881
	Average Score		**3.716**	**0.641**

4.5 Structural Equation Modelling (SEM)

SEM is a statistical technique to test and evaluate the causal relationship between the dependent and independent variables (Urbach & Ahlemann, 2010). For this study, Smart-PLS 3.0 was used to assess the measurement model and structural model.

4.5.1 Assessment of Reflective Measurement Model

A measurement model specifies the relationship between latent variable with indicator or manifest variable. PLS employs principle component analysis (PCA) to analyse the measurement model. For this study, the measurement model was further assessed through internal consistency, indicator reliability, convergent validity, and discriminant validity, as the variables were reflective (Mohammad Dalvi et al., 2018).

4.5.1.1 Internal Consistency Reliability

Composite reliability is used to measure internal consistency (Amin et al., 2018). Specifically, composite reliability of 0.70 or higher is deemed acceptable (Bagozzi & Yi, 1988; Hair et al., 2014). Table 4.9 presents the results of composite reliability (CR), which revealed that all CR values exceeded 0.70. In other words, all variables used in this study were deemed reliable, as the obtained results met the rules of thumb by Hair Jr et al. (2016).

Table 4.9 Results of Composite Reliability

Variables	Composite Reliability
Waste Management (WM)	0.925
Sustainable Design (SD)	0.943
Eco-Labelling (EL)	0.982
Sustainable Procurement (SP)	0.955
Sustainable Marketing (SM)	0.958
Sustainable Lifestyles (SL)	0.941
Islamic Work Ethics (IWE)	0.953
Social Sustainability Performance (SOP)	0.907
Economic Sustainability Performance (EP)	0.900
Environmental Sustainability Performance (ENP)	0.907

4.5.1.2 Convergent Validity

Convergent validity is the extent to which a measure correlates positively with the alternative measures of the same variable. The validity of reflective variables should be assessed (Amin et al., 2018). Table 4.10 presents the results of the assessment of measurement model in terms of factor loadings and AVE. As for the factor loadings, the recommended values for all items are 0.70 or greater (Hair et al., 2014). Therefore, as for this study, 28 items (WM1, WM2, WM3, WM4, WM6, WM7, SD6, SL2, SL3 SL6, IWE8, IWE9, IWE11, IWE12, IWE13, IWE14, IWE15, IWE16, IWE17, SOP1, SOP6, EP1, EP4, ENP1, ENP3, ENP4, ENP6, and ENP10) with factor loadings of below 0.70 were deleted. The factor loadings of the remaining items were all higher than 0.70, which ranged from 0.701 to 0.936. The deleted factor loadings were ranging from 0.246 to 0.695. As a rule of thumb, 0.7 or higher

factor loading represents that the factor extracts sufficient variance from that variable. Factor loading shows the variance explained by the variable on that particular factor. For the deleted items, it may due to the items that are not able to explain the variable on the particular factor, thus the items were deleted. Meanwhile, all values of AVE for these items exceeded 0.50. Thus, these results demonstrated the convergent validity of the variables in this study.

Table 4.10 Results of Convergent Validity

First-Order Variables	Second-Order Variables	Factor Loadings		AVE
Waste Management (WM)		WM1	Deleted	0.757
		WM2	Deleted	
		WM3	Deleted	
		WM4	Deleted	
		WM5	0.744	
		WM6	Deleted	
		WM7	Deleted	
		WM8	0.886	
		WM9	0.936	
		WM10	0.932	
Sustainable Design (SD)		SD1	0.776	0.648
		SD2	0.816	
		SD3	0.882	
		SD4	0.751	
		SD5	0.803	
		SD6	Deleted	
		SD7	0.812	
		SD8	0.790	
		SD9	0.848	
		SD10	0.791	
Eco-Labelling (EL)		EL1	0.904	0.834
		EL2	0.882	
		EL3	0.927	
		EL4	0.929	
		EL5	0.924	

First-Order Variables	Second-Order Variables	Factor Loadings		AVE
		EL6	0.936	
		EL7	0.932	
		EL8	0.923	
		EL9	0.888	
		EL10	0.901	
Sustainable Procurement (SP)		SP1	0.836	0.695
		SP2	0.793	
		SP3	0.904	
		SP4	0.892	
		SP5	0.730	
		SP6	0.876	
		SP7	0.701	
		SP8	0.843	
		SP9	0.889	
		SP10	0.861	
Sustainable Marketing (SM)		SM1	0.894	0.716
		SM2	0.866	
		SM3	0.891	
		SM4	0.860	
		SM5	0.858	
		SM6	0.843	
		SM7	0.834	
		SM8	0.893	
		SM9	0.862	
		SM10	0.867	
Sustainable Lifestyles (SL)		SL1	0.796	0.696
		SL2	Deleted	
		SL3	Deleted	
		SL4	0.913	
		SL5	0.875	
		SL6	Deleted	
		SL7	0.884	
		SL8	0.898	

First-Order Variables	Second-Order Variables	Factor Loadings		AVE
		SL9	0.830	
		SL10	0.839	
Islamic Work Ethics (IWE)		IWE1	0.863	0.716
		IWE2	0.853	
		IWE3	0.831	
		IWE4	0.872	
		IWE5	0.841	
		IWE6	0.858	
		IWE7	0.882	
		IWE8	Deleted	
		IWE9	Deleted	
		IWE10	0.764	
		IWE11	Deleted	
		IWE12	Deleted	
		IWE13	Deleted	
		IWE14	Deleted	
		IWE15	Deleted	
		IWE16	Deleted	
		IWE17	Deleted	
Social Sustainability Performance (SOP)		SOP1	Deleted	0.710
		SOP2	0.798	
		SOP3	0.829	
		SOP4	0.826	
		SOP5	0.846	
		SOP6	Deleted	
Economic Sustainability Performance (EP)		EP1	Deleted	0.692
		EP2	0.816	
		EP3	0.887	
		EP4	Deleted	
		EP5	0.794	
		EP6	0.771	
Environmental Sustainability		ENP1	Deleted	0.662
		ENP2	0.774	

First-Order Variables	Second-Order Variables	Factor Loadings		AVE
Performance (ENP)		ENP3	Deleted	
		ENP4	Deleted	
		ENP5	0.714	
		ENP6	Deleted	
		ENP7	0.814	
		ENP8	0.750	
		ENP9	0.800	
		ENP10	Deleted	
	Green Practices	Waste Management	0.625	0.530
		Sustainable Design	0.826	
		Eco-Labelling	0.851	
		Sustainable Procurement	0.894	
		Sustainable Marketing	0.910	
		Sustainable Lifestyles	0.898	
	Corporate Sustainability Performance	Social Sustainability Performance	0.872	0.534
		Economic Sustainability Performance	0.899	
		Environmental Sustainability Performance	0.879	

Notes: WM1, WM2, WM3, WM4, WM6, WM7, SD6, SL2, SL3 SL6, IWE8, IWE9, IWE11, IWE12, IWE13, IWE14, IWE15, IWE16, IWE17, SOP1, SOP6, EP1, EP4, ENP1, ENP3, ENP4, ENP6, and ENP10 were deleted, as the loadings were below 0.70.

4.5.1.3 Discriminant Validity

Discriminant validity refers to the degree to which items measure different concepts or items differentiate among variables (Muslim et al., 2016). In other words, a variable that demonstrates discriminant validity means that the variable is unique and able to capture the phenomenon of interest that is not captured by other variables in the same model (Hair et al., 2014). For this study, discriminant validity was examined in terms of Fornell & Larcker's criterion (Table 4.11) and HTMT (Table 4.12). From the Table 4.11 below based on the Fornell and Larcker criterion, the results show that the value of the average variance extracted (AVE) of every variable is more than its correlation compared to other variable (Anderson & Gerbing, 1988). Based on this analysis, it could be interpreted that those variables have discriminant validity and thus asserted as valid.

Discriminant validity from measurement model with reflective indicator can be assessed based on HTMT. HTMT is not a new method but Henseler et al. (2015) propose it as a new criterion to be used for SEM analysis as a response to their findings that the two former methods which are cross loading and Fornell and Larcker criterion lack in their reliability to detect discriminant validity. The method is based on the multitrait-multimethod matrix and measure the heterotrait-monotrait ratio of correlations. Discriminant validity lacks if the absolute value of HTMT is higher than a threshold of 0.85 or a value of 0.90. Table 4.12 below shows the HTMT result in accessing the discriminant validity. The results in both tables revealed that all variables demonstrated discriminant validity, which were deemed valid.

Table 4.11 Results of Fornell-Larcker's Criterion

	WM	SD	EL	SP	SM	SL	IWE	EP	ENP	SOP
WM	**0.736**									
SD	0.552	**0.817**								
EL	0.463	0.669	**0.913**							
SP	0.437	0.401	0.543	**0.834**						
SM	0.568	0.730	0.645	0.483	**0.874**					
SL	0.552	0.500	0.601	0.454	0.534	**0.861**				
IWE	0.691	0.689	0.672	0.572	0.702	0.631	**0.718**			
EP	0.679	0.563	0.607	0.421	0.611	0.616	0.646	**0.775**		
ENP	0.543	0.645	0.601	0.672	0.607	0.607	0.539	0.473	**0.753**	
SOP	0.388	0.456	0.489	0.272	0.469	0.538	0.669	0.438	0.471	**0.736**

Notes: WM: Waste Management; SD: Sustainable Design; EL: Eco-Labelling; SP: Sustainable Procurement; SM: Sustainable Marketing; SL: Sustainable Lifestyles; IWE: Islamic Work Ethics; EP: Economic Sustainability Performance; ENP: Environmental Sustainability Performance; SOP: Social Sustainability Performance.

Table 4.12 Results of HTMT

	WM	SD	EL	SP	SM	SL	IWE	EP	ENP	SOP
WM										
SD	0.608									
EL	0.491	0.733								
SP	0.465	0.443	0.601							
SM	0.627	0.837	0.72	0.545						
SL	0.598	0.567	0.673	0.506	0.616					
IWE	0.736	0.77	0.732	0.626	0.791	0.696				
EP	0.724	0.619	0.655	0.458	0.684	0.68	0.786			
ENP	0.622	0.66	0.665	0.463	0.667	0.668	0.794	0.861		
SOP	0.437	0.539	0.57	0.318	0.561	0.63	0.55	0.498	0.552	

Notes: WM: Waste Management; SD: Sustainable Design; EL: Eco-Labelling; SP: Sustainable Procurement; SM: Sustainable Marketing; SL: Sustainable Lifestyles; IWE: Islamic Work Ethics; EP: Economic Sustainability Performance; ENP: Environmental Sustainability Performance; SOP: Social Sustainability Performance.

4.6 Assessment of Structural Model

4.6.1 Collinearity Assessment

The multicollinearity problem arises when two or more variables are not independent of each other (Yoo et al., 2014), which can be determined through the collinearity assessment in terms of variance inflation factor (VIF). According to Hair et al. (2011), VIF of 5 or higher indicates potential collinearity problem. In the structural model, green practices, Islamic work ethics, organisation size, and organisation age were identified as the predictors of corporate sustainability performance. The results in Table 4.13 revealed that the values of VIF for all variables were below 5, which indicated that no items in this study were highly correlated. Thus, there was no collinearity problem among the predictors of corporate sustainability performance.

Table 4.13 Results of Collinearity Assessment

Latent Variables	VIF
Green Practices	1.319
Islamic Work Ethics	1.493
Organisation Size	1.086
Organisation Age	1.637

4.6.2 Structural Model Path Coefficients

4.6.2.1 Structural Model Path Coefficients without Moderator (Model 1) (Direct Effect of Green Practices on Corporate Sustainability Performance)

In Model 1, the effects of green practices on the corporate sustainability performance were examined and measured through the second-order reflective variable. Green practices constituted of six reflective first-order variables, which were waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles. Meanwhile, the corporate sustainability performance constituted of three reflective-first order variables, which were economic, environmental, and social sustainability performance. Figure 4.1 illustrates the path model of green practices and corporate sustainability performance. The results in Table 4.14 revealed that green practices as an

independent variable exhibited positive and significant effects (β=0.754, p<0.01) on the corporate sustainability performance. In other words, a higher level of green practices would result in better corporate sustainability performance.

Table 4.14 Significance of Path Coefficient (Without Moderator)

Path	Std. Beta	Std. Error	t-value
H1: GP → CSP	0.754	0.0488	15.459**

Notes: GP: Green Practices; CSP: Corporate Sustainability Performance

4.6.2.2 Structural Model Path Coefficients without Moderator (Model 2) (Direct Effect of Green Practices, Islamic Work Ethics, Organisation Size, and Organisation Age on the Relationship between Green Practices and Corporate Sustainability Performance)

For Model 2, three variables (independent variables) were added into the existing Model 1, which were the Islamic work ethics, organisation size, and organisation age. Figure 4.2 illustrates the structural path model for Model 2. The R^2 value for this model is 0.587 and the Q^2 value is 0.302. Meanwhile, the values of f^2 for all of the variables are green practices (1.019), Islamic work ethics (0.008), organisation size (0.001), and organisation age (0).

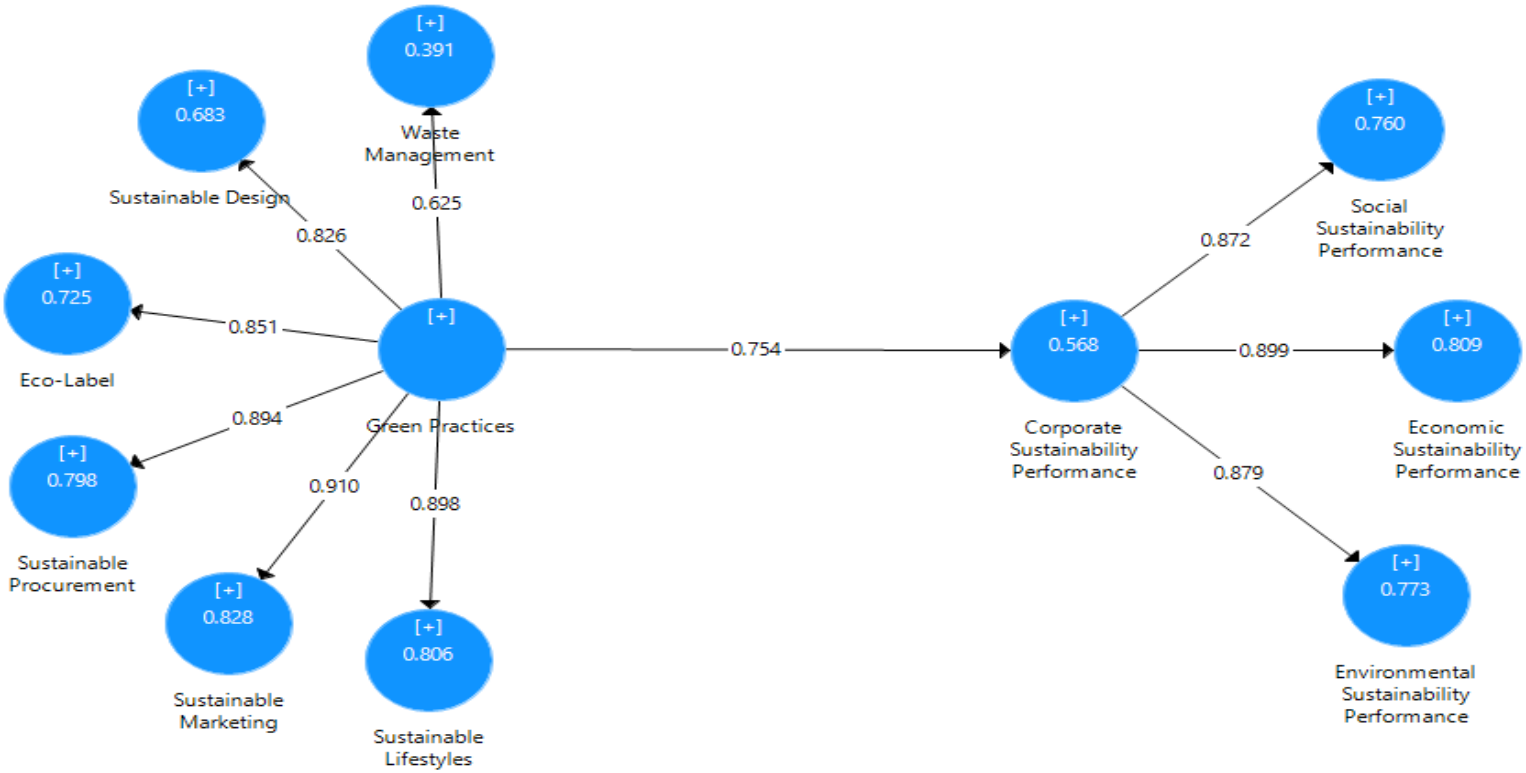


Figure 4.1 Results of Path Coefficient for Model 1 (Without Moderator) (Direct Effect of Green Practices on Corporate Sustainability Performance)

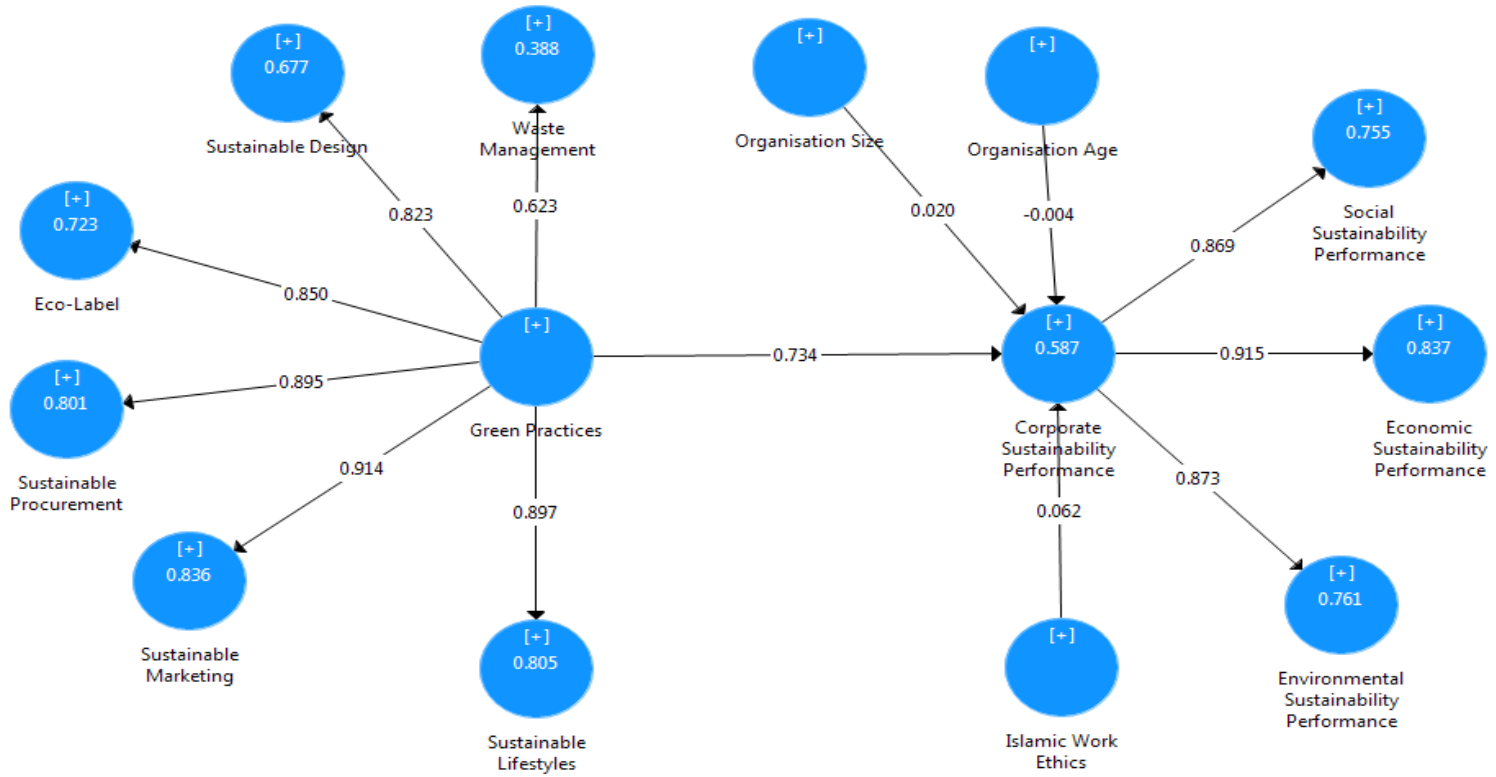


Figure 4.2 Results of Path Coefficient for Model 2 (Without Moderator) (Direct Effect of Green Practices, Islamic Work Ethics, Organisation Size, and Organisation Age on Corporate Sustainability Performance)

4.6.2.3 Structural Model Path Coefficients with Moderator (Model 3)

For Model 3, three variables (moderators) were added into the existing Model 1, which were the Islamic work ethics, organisation size, and organisation age. Figure 4.3 illustrates the structural path model for Model 3.

4.6.2.4 Coefficient of Determination (R^2)

The assessment of structural model in this study also involved the explained variance percentage, specifically in terms of R^2 of the dependent variable. In other words, R^2 represents the amount of variance in the dependent variable explained by all of the independent variables (Ramayah et al., 2018). Hair Jr et al. (2016) described R^2 of 0.75 as a substantial level of predictive accuracy; R^2 of 0.50 as a moderate level of predictive accuracy; R^2 of 0.25 as a weak level of predictive accuracy. Accordingly, Table 4.15 presents the obtained R^2 results of corporate sustainability performance, which revealed a moderate level of predictive accuracy for the variable (R^2 = 0.63). This shows that all listed independent variables accounted for 63% of corporate sustainability performance whereas the remaining 37% were contributed by other variables that were not examined in this study.

Table 4.15 Results of Coefficient of Determination (R^2)

Dependent Variable	R^2
Corporate Sustainability Performance	0.63

4.6.2.5 Predictive Relevance (Q^2)

The assessment of structural model also involves calculating the predictive relevance (Q^2) for the major variables in the proposed model. Q^2 measures a relative impact of the structural model on the observed measures for latent dependent variables (Henseler et al., 2009; Henseler & Fassott, 2010). A predominant predictive relevance proposed by Stone (1974) and Geisser (1975) is a metric of the model capability to predict (Henseler et al., 2009). Q^2 can be measured using the blindfolding technique (Tenenhaus et al., 2005). Table 4.16 presents the results of predictive relevance (Q^2), which revealed that the Q^2 of corporate sustainability

performance (0.312) exceeded the threshold requirement. In other words, the variables in the model demonstrated predictive relevance.

Table 4.16 Result of Predictive Relevance (Q^2)

Dependent Variable	Q^2
Corporate Sustainability Performance	0.312

4.6.2.6 Effect Size (f^2)

The effect size of f^2 refers to the change in R^2 when a specified exogenous variable is omitted from the model can be used to evaluate whether the omitted variable exhibits substantive impact on the endogenous variable (Hair et al., 2014). Table 4.17 presents the f^2 results for the independent variable of this study. The recorded results revealed that Islamic work ethics, moderating Islamic work ethics, moderating organisation size, and moderating organisation age exhibited small effect of predictive relevance for corporate sustainability performance whereas green practices exhibited large effect of predictive relevance for corporate sustainability performance. In addition, organisation age, and organisation size was found to exhibit no effect of the predictive relevance for corporate sustainability performance, as the value of effect size was less than 0.02 (Hair Jr et al., 2016).

Table 4.17 Results of Effect Size (f^2) for Independent Variable

Independent Variable	Corporate Sustainability Performance
Green Practices	1.138
Islamic Work Ethics	0.044
Organisation Size	0.001
Organisation Age	0.001
Moderating Islamic Work Ethics	0.079
Moderating Organisation Size	0.042
Moderating Organisation Age	0.003

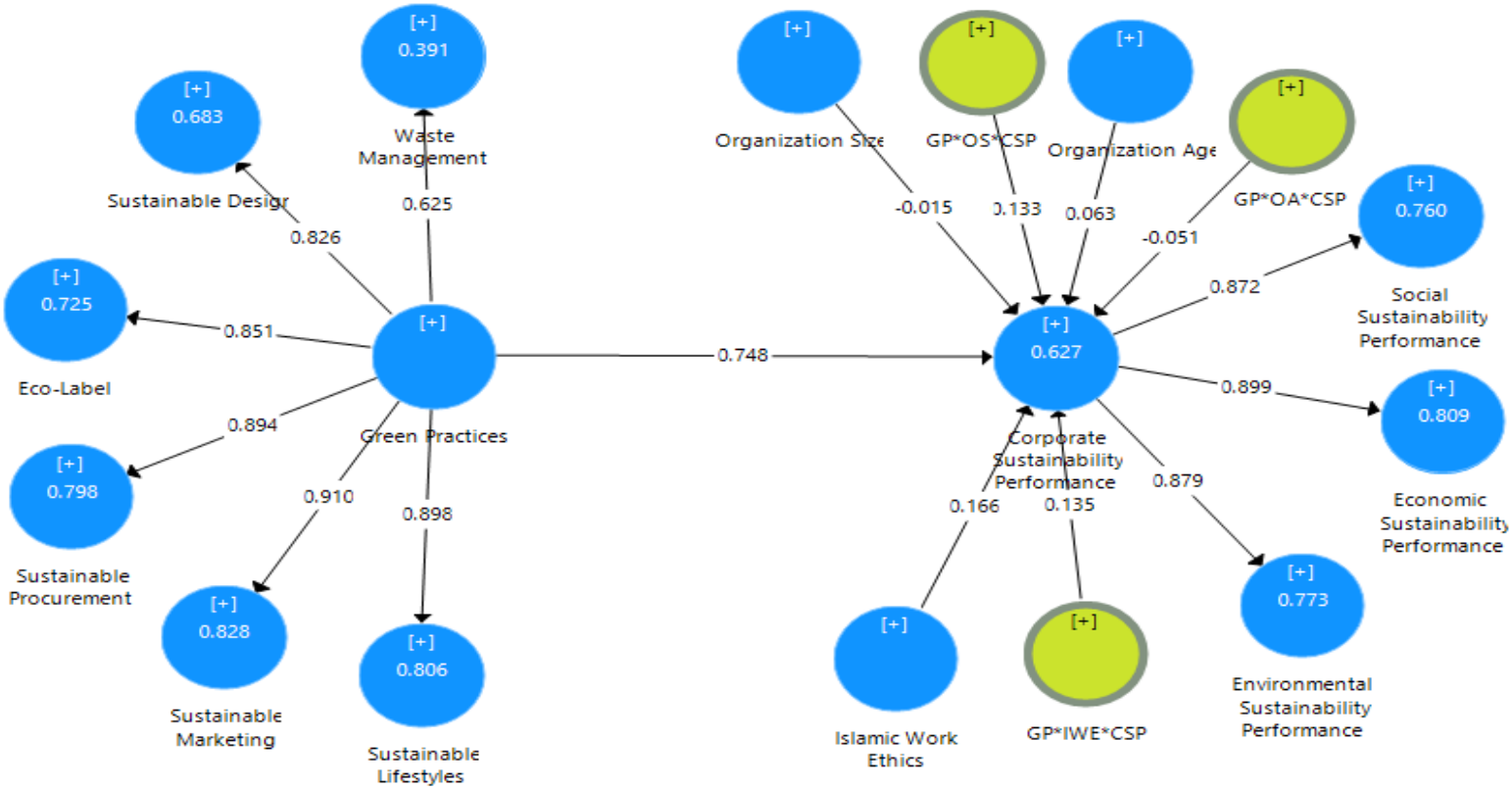


Figure 4.3 Results of Path Coefficient for Model 2 (With Moderators)

4.7 Analysis of Direct Effect and Moderation Effect

A moderator affects a relationship between two variables; thus, the nature of the impact of the predictor on the criterion varies according to the level or value of the dependent variable (Holmbeck, 1997). Ramayah et al. (2018) visualised moderator as a third variable that changes the relationship between the independent variable and dependent variable. According to Hair et al. (2014), moderation occurs when the effect of an independent variable on dependent variable depends on the value of another variable that moderates the relationship. The current study assessed the moderation effect of Islamic work ethics, organisation size, and organisation age on the relationship between green practices and the corporate sustainability performance.

4.7.1 Direct Effect and Moderation Effect of Islamic Work Ethics

The obtained results in Table 4.18 revealed that the relationship between Islamic work ethics and the corporate sustainability performance was statistically significant (β=0.166, p<0.05). Hence, H2 was accepted. The finding of the current study is supported by Abdus Sattar, Ghulam Mustafa, et al. (2012), Abdus Sattar, Kashif, et al. (2012), and Ahmad and Kalsom (2013). This study has proven that chemical manufacturing organisations that practice Islamic work ethics are likely to feel more attached and responsible for the organisational success. The Islamic work ethics such as dedication to work, justice, and generosity at the workplace improves communication, efficiency, and employee accountability, resulting in higher competitive advantage for the organisations in terms of economic, environment, and social sustainability performance of the organisation. In other words, the Islamic work ethics moderated the relationship between green practices and the corporate sustainability performance in this study. The interaction effect was deemed significant (β=0.135, p<0.05). Thus, H3 was accepted. This finding is in line with Olanrewaju et al. (2018) and Sa'adatu Balarabe et al. (2019). When it comes to green practices and sustainability, the presence of positive attitudes, such as the Islamic work ethics, it can be a fruitful attempt to improve the corporate sustainability performance of the organisations, particularly the chemical manufacturing organisations in Malaysia.

Table 4.18 Significance of Path Coefficients for Islamic Work Ethics

Path	Std. Beta	Std. Error	t-value
H2: IWE → CSP	0.166	0.088	1.889*
H3: GP*IWE*CSP	0.135	0.082	1.735*

Notes: ** denotes statistical significance at 0.01 level; * denotes statistical significance at 0.05 level.

Figure 4.4 presents the interaction plot of the moderating role of Islamic work ethics in the relationship between green practices and the corporate sustainability performance. Based on the results, the relationship between green practices and corporate sustainability performance appeared stronger when the Islamic work ethics in an organisation was stronger, which was also in line with the reported findings of prior studies. Studies have reported the potential of the Islamic work ethics to improve the quality and performance of the individuals and organisations (Abbas & Abdullah, 2008; Muhammad Shakil, 2011; Wan Norhasniah, 2012). Moreover, there has been a growing acknowledgement in the literature on the effective role of religious value in protecting the natural ecological system (Chappel & Tucker, 2000; Foltz et al., 2003; Hessel & Ruether, 2000; Tucker & Williams, 1997).

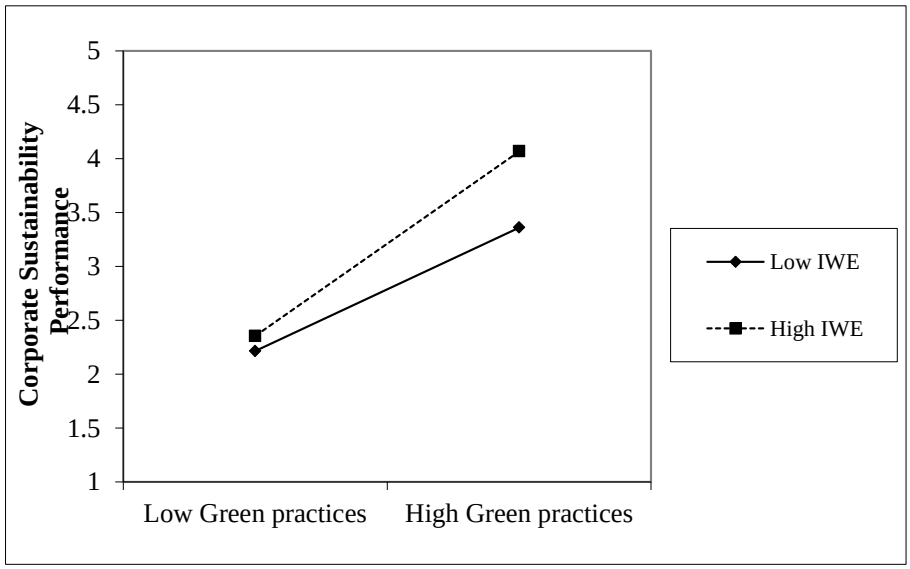


Figure 4.4 Interaction Plot of Islamic Work Ethics (IWE)

4.7.2 Direct Effect and Moderation Effect of Organisation Size

The obtained results in Table 4.19 revealed that the relationship between organisation size and the corporate sustainability performance was not statistically significant (β = -0.015). Hence, H4 was rejected. This study proven that performance of coporate sustainability performance is unrelated to organisation size. The result of this study shows that organisation size is not considered as an important factor in chemical manufacturing organisation in achieving sustainability performance. The sustainability of these organisations does not depend on how well they cope with the organisation size but depends on how well they exploit the available opportunities. The bootstrapping technique was applied and demonstrated the moderation effect of organisation size on the relationship between green practices and the corporate sustainability performance. In other words, organisation size moderated the relationship between green practices and the corporate sustainability performance in this study. The interaction effect was deemed significant (β=0.133, p<0.05). Thus, H5 was accepted. This finding is consistent with one of the prior studies by Wang et al. (2018). This study proved that larger organisation size strengthens the effects of green practices on the corporate sustainability performance of the chemical manufacturing organisations in Malaysia.

Table 4.19 Significance of Path Coefficients for Organisation Size

Path	Std. Beta	Std. Error	t-value
H4: Size → CSP	-0.015	0.063	0.238
H5: GP*Size*CSP	0.133	0.076	1.761*

Notes: ** denotes statistical significance at 0.01 level; * denotes statistical significance at 0.05 level.

Following the suggestion by Dawson (2014), the interaction effect was plotted (Figure 4.5) in order to observe how the organisation size as the moderator changes the relationship between green practices and the corporate sustainability performance. The relationship between green practices and corporate sustainability performance appeared stronger when the organisation was larger in size, which was also in line with Vanpoucke et al. (2014). This previous study found that organisation size affected the implementation of environmental practices at the organisational

level, as larger organisations typically have more available resources and receive greater environmental pressure, as compared to smaller organisations. On a similar note, Chung et al. (2003) also found that the organisation size as a moderator that affected the relationship between the management mode and development of organisations.

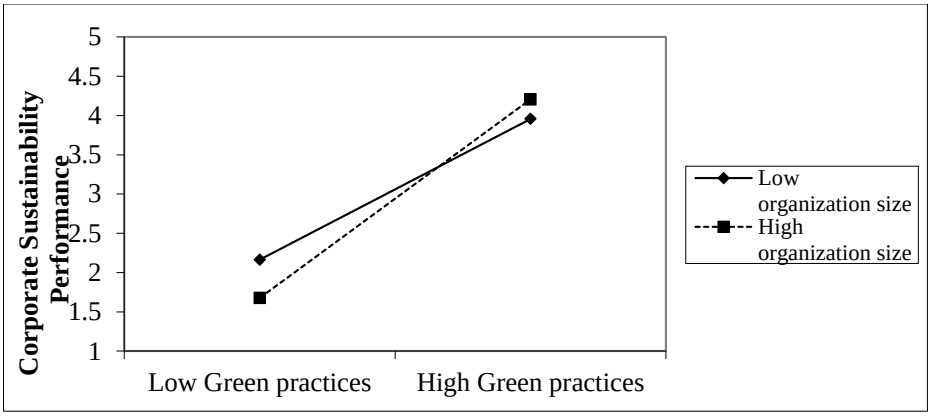


Figure 4.5 Interaction Plot of Organisation Size

4.7.3 Direct Effect and Moderation Effect of Organisation Age

The obtained results in Table 4.20 revealed that the relationship between organisation age and the corporate sustainability performance was not statistically significant (β=0.063). Hence, H6 was rejected. The result has proven that organisation age is not important factor for chemical manufacturing organisation to sustain as whether the organisation is young or old, it does not contribute to the sustainability of chemical manufacturing organisations. In other words, organisation age did not moderate the relationship between green practices and the corporate sustainability performance. The insignificant interaction effect (β=-0.051) implied that regardless of the operation years of a chemical manufacturing organisation in Malaysia, the organisation age would not affect the relationship between green practices and the corporate sustainability performance. As the moderation effect of organisation age on the relationship between green practices and the corporate sustainability performance was found insignificant, acquiring an interaction plot was deemed unnecessary. Thus, H7 was rejected. Regardless of the age of the organisation, the implementation of green practices would not affect the relationship

between green practices and the corporate sustainability performance of organisations, particularly the chemical manufacturing organisations in Malaysia. The respondent of the organisation did not consider the moderating role of organisation age as a major source of competitiveness toward the implementation of green practices in achieving corporate sustainability performance.

Table 4.20 Significance of Path Coefficients for Organisation Age

Path	Std. Beta	Std. Error	t-value
H6: Age → CSP	0.063	0.059	1.070
H7: GP*Age*CSP	-0.051	0.066	0.771

Notes: ** denotes statistical significance at 0.01 level; * denotes statistical significance at 0.05 level.

4.8 Testing of Hypotheses

The hypotheses in this study were tested using the bootstrapping technique developed by Geisser and Stone. Table 4.21 presents the obtained results of the hypotheses testing in this study.

Table 4.21 Results of Hypotheses Testing

Hypotheses		Path Coefficient	Standard Error	T-value	Result
H1	Green practices significantly affect the corporate sustainability performance. (GP → CSP)	0.754	0.0488	15.459**	Accepted
H2	The Islamic work ethics significantly affects the corporate sustainability performance. (IWE → CSP)	0.166	0.088	1.889*	Accepted
H3	The Islamic work ethics moderates the relationship between green practices and	0.135	0.082	1.735*	Accepted

Hypotheses		Path Coefficient	Standard Error	T-value	Result
	the corporate sustainability performance. (GP*IWE*CSP)				
H4	Organisation size significantly affects the corporate sustainability performance. (OS → CSP)	-0.015	0.063	0.238	Rejected
H5	Organisation size moderates the relationship between green practices and the corporate sustainability performance. (GP*OS*CSP)	0.133	0.076	1.761*	Accepted
H6	Organisation age significantly affects the corporate sustainability performance. (OA → CSP)	0.063	0.059	1.070	Rejected
H7	Organisation age moderates the relationship between green practices and the corporate sustainability performance. (GP*OA*CSP)	-0.051	0.066	0.771	Rejected

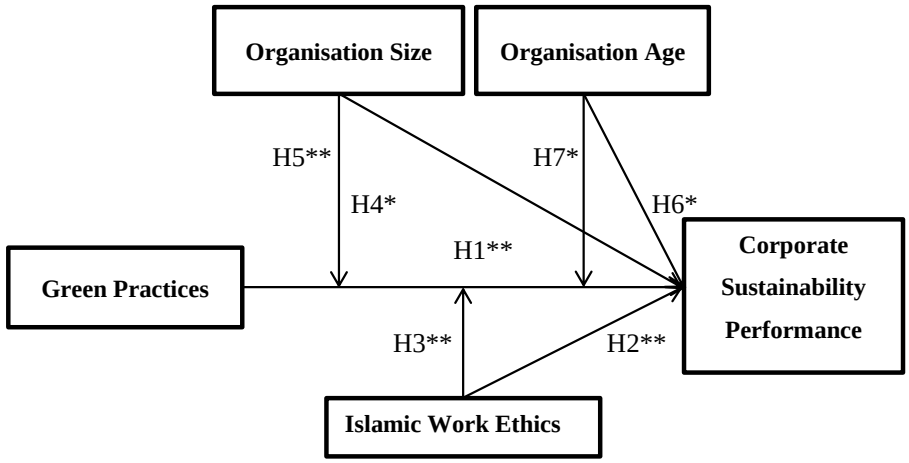
Notes: ** denotes statistical significance at 0.01 level; * denotes statistical significance at 0.05 level.

The obtained results of this study showed that green practices positively affected the corporate sustainability performance, which was consistent with the reported findings of previous studies on the relationship between green practices and corporate performance, such as Melnyk et al. (2003), Pagell and Gobeli (2009), Schoenherr (2012), and Yang et al. (2011). Besides that, the obtained results of this study also revealed that the Islamic work ethics and organisation size moderated the relationship between green practices and the corporate sustainability performance. There have been numerous studies that proved the significant role of religious values in attaining organisational success. According to Prillwitz and Barr (2011), the

attitude towards environmental practice and sustainability for segmentation approaches potentially improve the effectiveness of sustainability. Meanwhile, as for the moderation effect of organisation size, the obtained results of this study were consistent with the reported findings by Wang et al. (2018), where organisation size was found to moderate the relationship between green practices and the performance of organisations, especially large manufacturing organisations. On the other hand, organisation age in this study did not exhibit any significant moderation effect on the relationship between green practices and the corporate sustainability performance. In other words, this study proved that organisation age does not contribute to the corporate sustainability performance.

4.9 Chapter Summary

This chapter presented a detailed discussion of the data analysis in this study. A total of 130 chemical manufacturing organisations participated in the survey. Smart-PLS was used to examine the relationship between green practices and the corporate sustainability performance as well as the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance. The measurement model and structural model were specifically assessed. Figure 4.6 summarises the obtained results of this study.



Notes: *Rejected; **Accepted

Figure 4.6 Research Framework

CHAPTER 5

CONCLUSION AND RECOMMENDATIONS FOR FUTURE WORK

5.1 Introduction

Overall, this final chapter discusses the obtained results that were presented in the prior chapter and the implications of research findings and conclusion for this study. This chapter is divided into several sections. This chapter summarises the main findings of this study. The chapter also discusses the results of the testing of hypotheses. The theoretical and practical implications and the limitations of study are also presented in this chapter. This chapter also provides recommendations for future research and a brief conclusion.

5.2 Recapitulations of Main Findings

This study aimed to examine the effects of green practices (i.e. waste management, sustainable design, sustainable procurement, eco-labelling, sustainable marketing, and sustainable lifestyles) on the corporate sustainability performance (i.e. economic, environmental, and social sustainability performance). Besides that, this study also examined the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance. The specific objectives of this study are as follows:

1. To determine the effects of green practices on the corporate sustainability performance.
2. To determine the effect of the Islamic work ethics on the corporate sustainability performance.
3. To assess the moderation effect of the Islamic work ethics on the relationship between green practices and corporate sustainability performance.
4. To determine the effect of the organisation size on the corporate sustainability performance.
5. To assess the moderation effect of the organisation size on the relationship between green practices and corporate sustainability performance.

6. To determine the effect of the organisation age on the corporate sustainability performance.
7. To assess the moderation effect of the organisation age on the relationship between green practices and corporate sustainability performance.

5.3 Discussion

Overall, there were seven specific objectives and corresponding hypotheses in this study. The proposed hypotheses in this study were reviewed. The results are discussed in the following subsections.

5.3.1 Hypothesis 1 (H1): Green Practices Significantly Affect the Corporate Sustainability performance

The obtained results of this study demonstrated the significant and positive effects of green practices on the corporate sustainability performance. The significant path coefficient for the effects of green practices on the corporate sustainability performance (β=0.754, p<0.01) showed that green practices did contribute significant effects on the corporate sustainability performance. Thus, H1 was accepted.

This finding is in line with Hussam and Shehnaz (2018) and Sellitto and Hermann (2019). Both prior studies also found that green practices significantly and positively affected the corporate sustainability performance. Meanwhile, Ali et al. (2019), Amin et al. (2019), Ochieng (2019), Salwa Hanim et al. (2017), Sundram et al. (2017), Thong and Wong (2018), Yacob et al. (2018), and Yang et al. (2019) concluded that green practices contribute to the performance of the organisations in terms of their sustainability performance. Likewise, the implementation of green practices among these chemical manufacturing organisations in Malaysia was found to positively affect their corporate sustainability performance.

There are various advantages in implementing green practices that lead to corporate sustainability performance. Through the successful implementation of green practices, the chemical manufacturing organisations can gain significant savings, resulting in cost advantage. The investment in green practices can increase their

competitive advantage and eventually lead to improved operational performance. Besides that, better environmental management or performance is associated with improved business performance. A commitment to environmental sustainability can manifest itself as green practices.

In this study, the corporate sustainability performance of chemical manufacturing organisations in Malaysia was fostered through six dimensions of green practices, namely waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles. These green practices were found to contribute to the corporate sustainability performance of the chemical manufacturing organisations in Malaysia, specifically in terms of economic, environmental, and social sustainability performance.

Firstly, waste management was found to affect the economic, environmental, and social sustainability performance of the chemical manufacturing organisations in this study. Waste management has helped the industry to achieve sustainable business performance. The environment is protected through the commitment towards environmental protection by implementing good waste management. Good waste management simplifies waste collection activities and reduces the time for waste loading and off-loading that improves the efficiency of the organisations (Kirama & Mayo, 2016). As evidenced by Chan (2013), the environment can be protected by demonstrating the commitment to environmental protection by starting with different environmental measures and services to reduce waste, the use of energy and water, and other consumption of resources. As for social sustainability performance, the usage of advanced equipment in waste management provides better health protection to the employees and properly managed waste reduces health and safety risk.

Properly managed or collected wastes improves the public health and safety and the aesthetic quality of the environment (Napoleon et al., 2011; Wilson et al., 2006). For the chemical manufacturing organisations, good waste management involves waste separation, composting of chemical waste, emphasis on waste reduction at the functional area within the organisation, and cooperation with supply chain partners to eliminate waste in order to achieve corporate sustainability performance. Green

practices such as waste management can be advantageous, not only in terms of doing the right thing, but also in terms of organisational performance.

Secondly, sustainable design was found to influence the corporate sustainability performance of chemical manufacturing organisations in this study. The successful implementation of sustainable design in chemical manufacturing, such as design products that reduce the consumption of materials and energy, prevent or reduce the use of hazardous of products in the manufacturing process, and design products that meet the environmental regulations and safety standards, would substantially benefit and sustain the chemical manufacturing organisations. There are empirical evidences on the positive influence of sustainable design on the organisational performance in terms of positive public image and improved public health, which benefit organisations that pursue sustainability. On a similar note, Chan (2013), Chen et al. (2015), Majerovaa (2015), Maletic et al. (2014), and Nlizwa et al. (2015) also demonstrated the effect of sustainable design on the performance of the participating organisations of their studies.

Based on the obtained results of this study, eco-labelling was also found to affect the corporate sustainable performance of the chemical manufacturing organisations in this study. Chemical manufacturing organisations that use eco-labelling on the packaging of their products or corporate website gain competitive advantage towards achieving sustainability performance. The positive image of their business increases their competitive position and eventually, improves their business. As evidenced by Chkanikova and Lehner (2015), the formation of a business case for the green product market with sustainability certified assortment differentiates retailers, which subsequently protect their investments from being easily lost to their competitors in the green market development. The increasing trend of eco-labelling prompts various organisations to effectively and explicitly communicate its green image to the public and their potential consumers (Chan, 2013).

Besides that, sustainable procurement was found to affect the corporate sustainable performance of the chemical manufacturing organisations in this study. It is also evidenced that sustainable procurement contributes to the performance of organisations (Aktin & Gergin, 2016; Bratt et al., 2013; Cousins et al., 2006;

Giunipero et al., 2006; Large & Gimenez, 2006; Ma et al., 2016; Parikka-alhola, 2008; Tassabehji & Moorhouse, 2008). Clearly, sustainable procurement is also one of the important dimensions of green practices that contribute to the corporate sustainability performance of chemical manufacturing organisations. This can be achieved by cooperating with the suppliers with respect to the established environmental goals and by making sure that these suppliers are ISO14000-certified. Developing sustainable operations for the manufacturing sector improves the procurement of natural raw materials and the optimisation of the manufacturing processes in order to achieve sustainability (Ma et al., 2016). There are numerous advantages to practising sustainable procurement. For instance, it aids managers in an attempt to integrate economic, environmental, and social aspects into the supply chain operations, which helps to minimise the environmental impacts and increase social impacts.

Adding to that, sustainable marketing was found to affect the corporate sustainability performance of the chemical manufacturing organisations in this study. Nadanyiova et al. (2015) also highlighted that sustainable marketing is relatively extensive, starting with the protection of the environment and the production and sale of products and services that consider the ecological conditions and requirements to the final consumption of environmentally friendly products, which affects the quality of life and public health. Organisations that adopt green marketing strategies reap the benefits of superior performance, which lead to higher efficiency in the long-term financial sense (Richey et al., 2014). Practising sustainable marketing prompts organisations to ensure brand loyalty by manufacturing products through environmentally friendly processes, educate the consumers to use the products in an environmentally friendly manner, use green initiatives to attract new market opportunities, and promote products through an eco-friendly mode of communication in order to sustain the organisations in terms of economic, environmental, and social sustainability performance. The incorporation of the sustainable marketing principles into the business systems leads to the potential of obtaining sustainable competitive advantage. Sustainable marketing substantially benefits the organisations, as it improves the competitive ability of the organisations and minimises the negative environmental impacts.

Lastly, this study proved that sustainable lifestyles of the chemical manufacturing organisations positively affected their corporate sustainability performance. Wan and Toppinen (2016) found that sustainable lifestyles of the organisations that produce the products positively affected the respondents' choice of higher prices for products. Some of the examples of sustainable lifestyles include using energy and water wisely in daily manufacturing operations and select eco-products and services for consumers. As more consumers believe in the environmental implications of green consumption, the importance of health and safety benefits that are offered by the products influence these green consumers who are concerned about their health and safety. Consumers are more likely to opt for a more sustainable purchasing method if they are aware of the environmental and policy implications of the products they intend to purchase.

5.3.2 Hypothesis 2 (H2): The Islamic Work Ethics Significantly Affects the Corporate Sustainability Performance

With respect to the the Al-Quran and hadith, a positive relationship between the Islamic work ethics and the corporate sustainability performance was hypothesised. Based on the obtained results, this study demonstrated the significant and positive effect of the Islamic work ethics on the corporate sustainability performance of the chemical manufacturing organisations in Malaysia (β=0.166, p<0.05). Therefore, H2 was accepted. Studies have demonstrated the positive relationship between ethics and organisational outcomes (Luthans, 2002). For instance, Abdullah et al. (2018) and Krishna et al. (2011) reported a significant and positive relationship between business ethics and organisational performance. Similarly, the finding of the current study is also supported by Abdus Sattar, Ghulam Mustafa, et al. (2012), Abdus Sattar, Kashif, et al. (2012), and Ahmad and Kalsom (2013). These past studies also found that the Islamic work ethics significantly and positively affected the organisational performance.

This study proved that practising Islamic work ethics positively contributed to the economic, environmental, and social sustainability performance of these chemical manufacturing organisations, resulting in organisational success that substantially benefits all stakeholders. Clearly, work ethics contribute various positive

implications for both individual and organisation. Ethical organisations would gain various benefits, such as improved health and safety for their employees and the community, lower costs for waste management, and minimal energy consumption.

Furthermore, organisations that practice good ethics are likely to feel more attached and responsible for the organisational success. The Islamic work ethics such as dedication to work, justice, and generosity at the workplace improves communication, efficiency, and employee accountability, resulting in higher competitive advantage for the organisations. As for the chemical manufacturing organisations, the incorporation of the Islamic work ethics substantially benefits the organisations, as it creates a good business environment (Abdus Sattar, Ghulam Mustafa, et al., 2012). Most importantly, the incorporation of these values positively influences the efficiency, productivity, performance, and sustainability of the organisations. For the chemical manufacturing organisations, developing and implementing codes of ethics would serve their long-term organisational goals.

5.3.3 Hypothesis 3 (H3): The Islamic Work Ethics Moderates the Relationship between Green Practices and the Corporate Sustainability Performance

Based on the obtained results, this study demonstrated that the Islamic work ethics moderated the relationship between green practices and the corporate sustainability performance. Thus, H3 was accepted. This finding is in line with Olanrewaju et al. (2018) and Sa'adatu Balarabe et al. (2019). These past studies similarly found that the Islamic work ethics moderated the relationship between green practices and organisational performance. The effective role of religious value in environmental protection has gained a growing acknowledgement in the literature (Chappel & Tucker, 2000; Foltz et al., 2003; Hessel & Ruether, 2000; Tucker & Williams, 1997). Apart from the effective systems and technologies to attain sustainability, the organisational mindset, culture, and values contribute to the successful implementation of green practices. The potential role of the Islamic work ethics in the implementation of green practices has to go beyond the general idealism on the positive influence of religious values or ethics on environmental protection.

The potential of the principles of Islamic work ethics in improving the quality and performance of both individuals and organisations has been widely highlighted in numerous studies (Abbas & Abdullah, 2008; Kumar & Raduan, 2010; Mohd Abdul et al., 2010; Muhammad Shakil, 2011; Wan Norhasniah, 2012). When it comes to green practices and sustainability for segmentation approaches, the presence of positive attitudes, such as the Islamic work ethics, can be a fruitful attempt to improve the corporate sustainability performance of the organisations, particularly the chemical manufacturing organisations in Malaysia. Evidently, the Islamic work ethics strengthens the relationship between green practices and corporate sustainability performance in terms of the economic, environmental, and social sustainability performance of these organisations.

5.3.4 Hypothesis 4 (H4): Organisation Size Significantly Affects the Corporate Sustainability Performance

Based on the results, the study found that organisation size did not exhibit any significant effect on the corporate sustainability performance of the chemical manufacturing organisations. Thus, H4 was rejected. In other words, the effect of organisation size can be either positive or negative. In this case, this study suggested that organisation size did not provide better corporate sustainability performance. Basically, there was no effective relationship between organisation size and the corporate sustainability performance of the chemical manufacturing organisations in this study. Several past studies similarly reported no relationship between organisation size and organisational performance in terms of profitability (Akinlo, 2012; Goddard et al., 2004; Niresh & Velnampy, 2014; Serrasqueiro & Nunes, 2008; Velnampy & Nimalathasan, 2010) and corporate social performance (Orlitzky, 2001). On the contrary, such finding differed from the reported results of certain studies that demonstrated the significant effect of organisation size on the organisational performance (Chung et al., 2003; Real et al., 2014; Wang et al., 2018).

The results on the relationship between organisation size and the corporate sustainability performance in this study may be attributed to the different context of the study that involved different measurement and measures of organisation size and implementation of corporate performance and testing contexts. Hence, organisation

size is not a major determinant of the corporate sustainability performance of chemical manufacturing organisations in Malaysia. It does not directly contribute to their corporate sustainability performance. Basically, the sustainability of these organisations does not depend on how well they cope with the organisation size but depends on how well they exploit the available opportunities. Thus, in order to sustain, regardless of the organisation size, the chemical manufacturing organisations have to cope well with the right strategies and exploit the opportunities well.

Balasubramanian (2020) argued that performance of firms is driven by the knowledge base and capabilities of its managers. This study proven that performance of coporate sustainability performance is unrelated to organisation size. As stated by Kitenga et al. (2020), factors that may affect the sustainable performance of organisation include managerial talent, innovation, and changes in demand or taste. The result of this study shows that organisation size is not considered as an important factor in chemical manufacturing organisation in achieving sustainability performance. The respondent of the organisation did not consider organisation size as a major source of competitiveness. This is aligned with Kitenga et al. (2020) study there is no significant effect of organisation size toward sustainability performance in food manufacturing organisations in Kenya. The result is also consistent with the finding of Niresh and Velnampy (2014) who concluded that organisation size does not have any impact on the performance of organisation. Thus, this study therefore concluded that organisation size is not the key driver to sustainability performance in chemical manufacturing organisation.

5.3.5 Hypothesis 5 (H5): Organisation Size Moderates the Relationship between Green Practices and the Corporate Sustainability Performance

Based on the obtained results, the study demonstrated that organisation size moderated the relationship between green practices and the corporate sustainability performance. The effect of organisation size appeared to strengthen the significant and positive relationship between green practices and the corporate sustainability performance of the chemical manufacturing organisations in this study. Thus, H5 was supported. This finding is consistent with one of the prior studies by Wang et al. (2018) that highlighted the moderating role of organisation size in the relationship

between green practices and organisational performance, particularly for large manufacturing organisations.

As a moderator, it can be said that organisation size fosters the significant and positive relationship between green practices and the corporate sustainability performance. In other words, this moderator affects the relationship between the management mode and the development of an organisation. This study proved that larger organisation size strengthens the effects of green practices on the corporate sustainability performance of the chemical manufacturing organisations in Malaysia. According to Vanpoucke et al. (2014), this effect is plausible because, unlike smaller organisations, larger organisations have more resources available and receive greater environmental pressure. Larger organisations possess advanced information technology, such as consumer relationship management applications, and decision support systems that can facilitate the information flow within the supply chain. These resources help large organisations to manage supply chains more conveniently. Furthermore, it is challenging and demotivating for small organisations to implement green practices given their limited technological capabilities and options, resources, opportunities to benefit from green practices, and high costs and resource demands. In most cases, the adoption of socially responsible behaviours among the SMEs is typically involuntary and forced by external factors, such as regulations.

5.3.6 Hypothesis 6 (H6): Organisation Age Significantly Affects the Corporate Sustainability Performance

Based on the obtained results, organisation age did not exhibit any significant effect on the corporate sustainability performance of the chemical manufacturing organisations in this study. Thus, H6 was rejected. There are several factors that can explain why the increase of organisation age does not contribute to the corporate sustainability performance. Firstly, older organisations have poorer environmental facilities. As organisations grow older, their profitability seems to decline with higher tendency to lose their inertia and ability to change according to the rapid environmental changes, which then provide opportunities for younger organisations to capture the latest market. According to Coad et al. (2013) and Kucher (2020), matured organisations experience higher chances of suffering from liability of

obsolescence and senescence. Obsolescence occurs due to their inability to fit well in the changing business environment, while senescence occurs due to their inflexible rules, routines, and organisational structures (Coad et al., 2013). Organisational research has identified that firm age influence not only the probability of failing but may also moderate how companies fail, thus making an essential contribution to corporate failure research (Kucher, 2020). The result has proven that organisation age is not important factor for chemical manufacturing organisation to sustain as whether the organisation is young or old, it does not contribute to the sustainability of chemical manufacturing organisations. This result differs from other study that found organisation age contributes to performance of organisation. Thus, for chemical organisation to sustain it does not have to consider the age of the organisation.

There may be many other factors that contribute to the organisational performance (Nie et al., 2018) but this study proved that organisation age does not contribute to the economic, environmental, and social performance of the organisations. After all, organisations of different ages are likely to have different combinations of human and organisational resources that are linked to their performance. The effect of organisation age can be either positive or negative. Nevertheless, the finding of this study suggests that organisation age did not contribute to better corporate sustainability performance for the organisations, particularly the chemical manufacturing organisations in Malaysia. This study proved no effective relationship between organisation age and corporate sustainability performance in this organisation.

5.3.7 Hypothesis 7 (H7): Organisation Age Moderates the Relationship between Green Practices and the Corporate Sustainability Performance

Based on the obtained results, organisation age was found to exhibit no significant moderation effect on the relationship between green practices and the corporate sustainability performance of the chemical manufacturing organisations in this study. Thus, H7 was rejected. In other words, organisation age does not directly contribute to the corporate sustainability performance and does not show any moderation effect on the corporate sustainability performance. Regardless of the age of the organisation, the implementation of green practices would not affect the relationship

between green practices and the corporate sustainability performance of organisations, particularly the chemical manufacturing organisations in Malaysia.

At this point, it can be said that the sustainability of the chemical manufacturing organisations in Malaysia does not depend on their organisation age. The result of this study shows that organisation size is not considered as an important factor in chemical manufacturing organisation in achieving sustainability performance. The respondent of the organisation did not consider the moderating role of organisation age as a major source of competitiveness toward the implementation of green practices in achieving corporate sustainability performance. There are other factors that moderate the relationship between green practices and the corporate sustainability performance of chemical manufacturing organisations, such as attitude and awareness. With the absence of attitude and awareness on the importance of green practices, the organisations would not be able to display the required corporate sustainability performance. In Malaysia, survival is assigned as a priority, rather than environmental and social sustainability. It is well recognised that attitude and awareness are the keys to sustainability. This is agreed by Balasubramanian (2020) which stated that attitude and awareness are the important factors that need to be considered for the sustainability to be taken into consideration. Thus, an organisation would not take sustainability issues seriously or display excellent corporate sustainability performance if the organisation does not perceive sustainability as an important issue.

Adding to that, the demands from the consumers on green products and the enforcement from the government and top management are some of the key factors that enhance the relationship between green practices and the corporate sustainability performance. However, in Malaysia, such awareness on the importance of green practices among consumers and even organisations remain low. The low demand for green products among consumers has caused organisations that solely aim to increase their profit to overlook the importance of producing green products. Moreover, the lack of enforcement from the government and top management in the implementation of green practices have contributed to the failure of implementing green practices and achieving corporate sustainability performance for the organisations. As stated by Balasubramanian (2020), the government support, the

support from management, and the increase of awareness among consumers are important in sustaining the organisation. Hence, in order to sustain, the chemical manufacturing organisations in Malaysia must be highly aware on the importance of green practices and take action to increase the public awareness with respect to the environmental regulations and standards, regardless of their organisation age.

5.4 Contributions and Implications of Research Findings

5.4.1 Theoretical Contributions

The current study offered essential insights on the resource-based view theory, natural-resource-based view theory, stakeholder theory, and Al-Quran and hadith. The resource-based view theory and natural-resource-based view theory were used in this study to explain the relationship between green practices and the corporate sustainability performance. Besides that, the resource-based view theory was also used to explain the moderating role of organisation size in the relationship between green practices and the corporate sustainability performance in this study. Meanwhile, the stakeholder theory and Al-Quran and hadith were used to explain the relationships of green practices and Islamic work ethics with the corporate sustainability performance in this study.

From the theoretical perspectives, an integrated theoretical model that incorporated green practices, organisation size, and corporate sustainability performance was developed and validated in this study with respect to the resource-based view theory. This study successfully proved that organisational resources that are rare, unique, inimitable, and non-substitutable, specifically green practices and organisation size, contributed to the corporate sustainability performance of the chemical manufacturing organisations. The resource-based view theory provided this study with the conceptual lens to understand how green practices and organisation size affect the corporate sustainability performance, which may contribute to the competitive advantage of the organisations.

Besides that, this study provided evidence on the significant and positive effects of green practices and Islamic work ethics on the corporate sustainability performance

with respect to the stakeholder theory. This study successfully proved that the enforcement from the stakeholders to implement green practices and the Islamic work ethics contributed to the corporate sustainability performance of the chemical manufacturing organisations. Stakeholders encourage organisations to achieve corporate sustainability performance through the successful implementation of green practices. The stakeholder theory advocated the importance of organisations to have proper ethical codes of business operation. Thus, organisations with high stakeholder engagement are more likely to achieve corporate sustainability performance and successful implementation of green practices and positive work ethics.

Additionally, this study provided evidence on the significant and positive effects of green practices and Islamic work ethics on the corporate sustainability performance with respect to the Al-Quran and hadith. Both Al-Quran and hadith serve as the main source of Islamic work ethics and the importance of green practices and Islamic work ethics in achieving corporate sustainability performance. Islam provides guidelines for every aspect of life, including for the organisational operations. Most importantly, the Islamic work ethics enhances the protection of environment, social, and economy.

Unlike most prior studies, the current study simultaneously assessed all three dimensions of corporate sustainability performance, specifically the economic, environmental, and social sustainability performance, in a single framework. This study also extended the current literature by showing how each dimension of green practices, namely waste management, sustainable design, eco-labelling, sustainable procurement, sustainable marketing, and sustainable lifestyles, can help the chemical manufacturing organisations to achieve corporate sustainability performance. Based on the obtained results, this study demonstrated the significance of green practices on the corporate sustainability performance with respect to the natural-resource-based view theory. Last but not least, this study also extended the current literature by showing how the Islamic work ethics and organisation size moderate the relationship between green practices and the corporate sustainability performance.

5.4.2 Practical Contributions

Overall, this study provided key outcomes on specific focus areas of green practices to improve the corporate sustainability performance of the chemical manufacturing organisations in emerging economies like Malaysia. This subsequently contributes to the sustainability of the chemical manufacturing organisations in Malaysia in terms of its economic, environmental, and social sustainability performance towards achieving the country's target of becoming an advanced economy with the emphasis on the SDGs by 2030. Moreover, the findings of this study on the significant effects of green practices on the corporate sustainability performance are also applicable for one of the important sectors in the world, the manufacturing sector, in other emerging and developed countries, particularly the chemical manufacturing organisations.

In particular, the findings of this study would benefit the policymakers in identifying and prioritising key green practices for the chemical manufacturing organisations in Malaysia for the effective development and implementation of policies, regulations, infrastructure, and financial and technical assistance. Environmental education is one of the key components in promoting green practices, which should be properly considered for investments by organisations. For that, the needs in this particular area should be effectively analysed. Policymakers can also formulate effective educational and user-friendly strategies to increase environmental consciousness and deliver environmental knowledge with the emphasis on green practices for sustainable development. This can be achieved through the development of awareness programmes on green practices and the introduction of simple guidelines on green practices.

Apart from the role of policymakers, the regulatory authorities can facilitate and encourage effective implementation of green practices by providing more attractive incentives, such as providing attractive financial incentives, technical resources, governmental subsidies, tax incentives, training, pilot green projects, and green awareness for these chemical manufacturing organisations. It is imperative for the government to make more effort to promote the benefits of incentives for implementing green practices in order to encourage the chemical manufacturing

organisations to implement green practices given the low environmental awareness among the organisations in Malaysia.

Adding to that, the empirical evidence and significant findings of this study also benefit the top management of the chemical manufacturing organisations in acknowledging and appreciating the positive effects of green practices on the corporate sustainability performance. The role of the top management in implementing green practices at the organisational level is important given their capacity to nurture organisations towards supporting proactive green strategies. Managers should encourage the involvement of employees in green practices and consider rewarding employees for demonstrating improved sustainability performance in their daily activities. In addition, managers should inform and train employees on the environmental issues, environmental objectives, and environmental impacts of their actions on the corporate sustainability performance.

Moreover, this study promoted the incorporation of green practices and the Islamic work ethics among the employees, especially in their working attitude, to achieve corporate sustainability performance, which largely benefit the managers of the chemical manufacturing organisations. Good ethical code emphasises ethics and values, such as honesty, truthfulness, hard work, and patience, which can help an organisation to succeed (Jihad et al., 2015). The findings of this study on the significant moderation effect of the Islamic work ethics on the relationship green practices and the corporate sustainability performance highlighted the need for the government and chemical manufacturing organisations in Malaysia to consider the significance of Islamic work ethics in the relevant policies and management. Such initiatives may enhance the corporate sustainability performance of the chemical manufacturing organisation in this country. This leads to the significant role of managers to cultivate and promote the values and principles of Islamic work ethics for the sustainability of these organisations.

The managers of the chemical manufacturing organisations can conduct training programmes to enhance the Islamic work ethics to positively influence the employees and subsequently, the overall manufacturing sustainability performance. Organisations that follow ethical principles demonstrate enhanced organisational

performance, which ensures the prosperity of the stakeholders and improves the well-being and welfare of employees (Barutcugil, 2004; Berrone et al., 2007; Donker et al., 2008; Mead, 1998; Mohd Abdul et al., 2010). Thus, this study benefitted the chemical manufacturing organisations in Malaysia in their efforts of implementing green practices, developing new profit opportunities towards corporate sustainable performance, and setting themselves apart from their competitors by practising the Islamic work ethics.

The incorporation of Islamic work ethics in the operations and management of chemical manufacturing organisations is expected to enhance their corporate sustainability performance in terms of economic, environmental, and social sustainability performance. Undoubtedly, the Islamic work ethics provides ethically strong and good business environment and have the potential to positively influence the managerial performance through management by example—such ethical organisations can be a good role model for other organisations.

5.5 Limitations of Study

Several limitations were identified in this study. Firstly, this was a cross-sectional study, where the researcher only collected data at a single point of time. Furthermore, the nature of this study was purely quantitative (self-administered questionnaires), which highlighted the need for more in-depth responses, as non-verbal communication data may be captured through qualitative approach or mixed-methods approach. For instance, qualitative techniques such as observation and in-depth interviews are seen as alternatives to address some of the information deficits that quantitative case studies present (Goldstein & Drucker, 2006).

Besides that, all data were obtained from a single type of industry, specifically the chemical manufacturing industry. This study did not include other industries or sectors. There are many types of industries in the manufacturing sector in Malaysia. Thus, caution should be taken when the findings and discussion are generalised across different sectors or industries. Moreover, this study exclusively focused on the chemical manufacturing organisations in Malaysia. Therefore, the findings may not be generalised to chemical manufacturing organisations in other countries.

Last but not least, this study only considered the moderating role of Islamic work ethics, organisation size, and organisation age in the relationship between green practices and the corporate sustainability performance. It should be noted that there may be other unexplored moderators or mediators that enhance the relationship between green practices and the corporate sustainability performance.

5.6 Recommendations for Future Research

There are several recommendations for future research. Firstly, it is recommended for future research to assess other types of industries in the manufacturing sector given the different contributions of these industries. As this study exclusively focused on the chemical manufacturing organisations, a similar study on other types of industries may yield different results. With that, an accurate overview of the green practices, Islamic work ethics, and corporate sustainability performance of the manufacturing sector can be obtained.

Secondly, on the account of generalisability, it is recommended for future research to consider chemical manufacturing organisations in other countries and increase the number of samples to accurately reflect the level of green practices and corporate sustainability performance. With that, the obtained findings would shed more light on the effects of green practices and Islamic work ethics on the corporate sustainability performance towards creating and sustaining competitive advantages.

In addition, it is recommended for future research to explore the effects of other moderators or mediators, apart from Islamic work ethics, organisation size, and organisation age, on the relationship between green practices and the corporate sustainability performance. Furthermore, it is suggested that future research consider other dimensions of green practices, as the current study only focused on waste management, sustainable design, sustainable procurement, eco-labelling, sustainable marketing, and sustainable lifestyles. A longitudinal study (over three years) should be considered to ascertain the direction and magnitude of causality between variables (Lee, Mazlin, Goh, & Marlia, 2015).

5.7 Conclusion

This study aimed to examine the effects of green practices on the corporate sustainability performance and the moderating role of Islamic work ethics, organisation size, and organisation age on the relationship between green practices and the corporate sustainability performance. With respect to the specific objectives of this study and the corresponding research questions and proposed hypotheses, a theoretical framework was developed based on the resource-based view theory, natural-resource-based view theory, stakeholder theory, and Al-Quran and hadith.

Basically, this study was an explanatory study that employed the deductive approach, where hypotheses were theoretically developed and statistically tested. A self-administered survey was conducted for this study that involved respondents that were selected using the stratified sampling technique. For the determination of the minimum sample size required, G-Power 3.1 was used. The chemical manufacturing organisations in Malaysia represented the unit of analysis for this study. A total of 344 questionnaires were distributed to these organisations and only 130 questionnaire sets were valid for analysis. PLS-SEM was used in this study to assess the measurement and structural models.

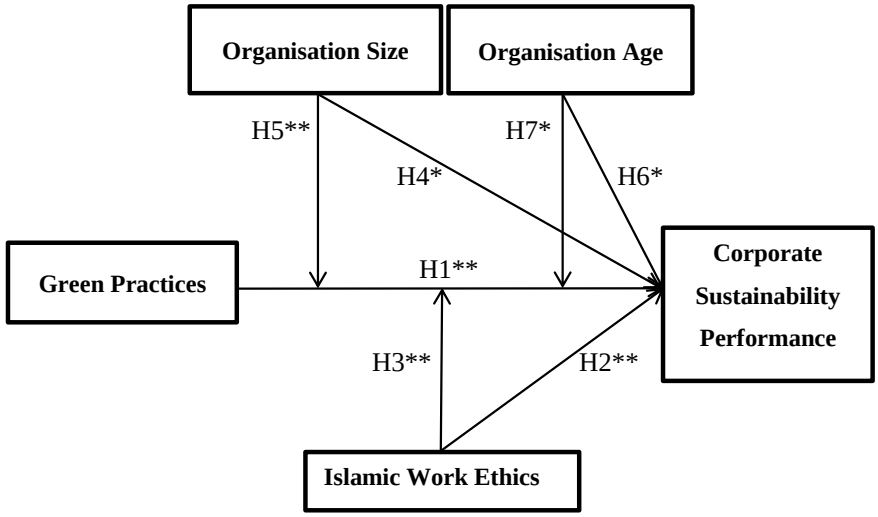
Table 5.1 summarises the obtained results with respect to each specific objective of this study. Meanwhile, Figure 5.1 illustrates the main findings of this study. For this study, four hypotheses (H1, H2, H3, and H5) were accepted and the other three remaining hypotheses (H4, H6, and H7) were rejected. In particular, this study demonstrated the significant and positive effects of green practices on the corporate sustainability performance of the chemical manufacturing organisations in Malaysia. Besides that, this study also proved the moderating role of both Islamic work ethics and organisation size in the relationship between green practices and the corporate sustainability performance of these organisations in Malaysia. However, this study also proved that both organisation size and organisation age did not exhibit any direct significant effects on the corporate sustainability performance and organisation age did not moderate the relationship between green practices and the corporate sustainability performance.

Table 5.1 Results of Hypotheses Testing

Research Objective (RO)		Hypothesis (H)		Result
RO1	To determine the effects of green practices on the corporate sustainability performance.	H1	Green practices significantly affect the corporate sustainability performance. (GP → CSP)	Accepted
RO2	To determine the effect of the Islamic work ethics on the corporate sustainability performance.	H2	The Islamic work ethics significantly affects the corporate sustainability performance. (IWE → CSP)	Accepted
RO3	To assess the moderation effect of the Islamic work ethics on the relationship between green practices and corporate sustainability performance.	H3	The Islamic work ethics moderates the relationship between green practices and the corporate sustainability performance. (GP*IWE*CSP)	Accepted
RO4	To determine the effect of the organisation size on the corporate sustainability performance.	H4	Organisation size significantly affects the corporate sustainability performance. (OS → CSP)	Rejected
RO5	To assess the moderation effect of the organisation size on the relationship between green practices and corporate sustainability performance.	H5	Organisation size moderates the relationship between green practices and the corporate sustainability performance. (GP*OS*CSP)	Accepted
RO6	To determine the effect of the organisation age on the corporate sustainability performance.	H6	Organisation age significantly affects the corporate sustainability performance.	Rejected

Research Objective (RO)		Hypothesis (H)		Result
			(OA → CSP)	
RO7	To assess the moderation effect of the organisation age on the relationship between green practices and corporate sustainability performance.	H7	Organisation age moderates the relationship between green practices and the corporate sustainability performance. (GP*OA*CSP)	Rejected

Notes: GP: Green Practices; CSP: Corporate Sustainability Performance; IWE: Islamic Work Ethics; OS: Organisation Size; OA: Organisation Age.



Notes: *Rejected; **Accepted

Figure 5.1 Research Framework

The chemical manufacturing industry is one of the important industries that should have a proper implementation of green practices to achieve corporate sustainability performance. It is vital for these organisations to implement green practices in their work processes, as highlighted in the government plan. After all, it is the duty of every organisation to consider and protect the economy, environment, and society. Moreover, the implementation of green practices offers numerous advantages to the organisations, especially for the chemical manufacturing organisations in developing countries like Malaysia.

For instance, it helps managers to incorporate economic, environmental, and social aspects into the business operations. The successful implementation of green practices and Islamic work ethics contribute to sustainable manufacturing operations and corporate sustainability performance. Through the effective and efficient implementation of green practices, the chemical manufacturing organisations in Malaysia can have better opportunities to develop and offer environmentally friendly practices, which improve their sustainability performance and increase their competitive advantage. It is imperative that these organisations cope and make use of the opportunities with the right strategies to achieve corporate sustainability performance.

In short, the findings of this study were deemed valuable for the chemical manufacturing organisations in developing countries like Malaysia, especially companies that consider adopting green practices and stakeholders who express interest to promote green practices. This study was expected to assist the chemical manufacturing organisations to protect the environment ethically and sustain themselves economically and socially.

APPENDIX A

A. 1 List of Chemical Manufacturing Organisations in Malaysia

Name of Company		
Accel Graphic System Sdn Bhd	A. Schulman Plastics (Malaysia) Sdn Bhd	Southern Industrial Gas Sdn Bhd
Accot Technologies Sdn Bhd	All Cosmos Industries Sdn Bhd	Southern Lion Sdn Bhd
AF Manufacturing Services Sdn Bhd	Allbright Industries (M) Sdn Bhd	Sto SEA Sdn Bhd
Affluent Cycle Industries Sdn Bhd	Arkema Coating Resins Malaysia Sdn Bhd	Sunward Pharmaceutical Sdn Bhd
Agromate Holdings Sdn Bhd	Biocon Sdn Bhd	Surtreat Solution
Air Liquide Malaysia Sdn Bhd	Celestica (AMS) Sdn Bhd	Takaso Rubber Products Sdn Bhd
Allied Flourish Sdn Bhd	Dairen Chemical (M) Sdn Bhd	TLC-Koya Chemicals Manufacturing Sdn Bhd
Alpha Aim (M) Sdn Bhd	DPI Sdn Bhd	Uyemura (Malaysia) Sdn Bhd
Alphaprima Engineering Sdn Bhd	EcoOils Sdn Bhd	Wayco Manufacturing (M) Sdn Bhd
Amochem Sdn Bhd	Edo Chemical Sdn Bhd	Woleco Hotel Supplies Sdn Bhd
Ancom Crop Care Sdn Bhd	Everlast Cat Perindustrian (M) Sdn Bhd	Agricultural Chemicals (M) Sdn Bhd
Approfit Zinc Oxide Manufacturing Sdn Bhd	Everzinc Malaysia Sdn Bhd	AL Asia Chemical Industry Sdn Bhd
Aquaspersions (M) Sdn Bhd	Evyap Sabun Malaysia Sdn Bhd	Anglo Wax Industries Sdn Bhd
Aria Cosmetics Sdn Bhd	FPM Sdn Bhd	CHT Manufacturing Sdn Bhd
Attractive Avenue Sdn Bhd	Fullmark Manufacturing Sdn Bhd	Danisco Malaysia Sdn Bhd
Averex Chemicals Sdn Bhd	Grochem (Malaysia) Sdn Bhd	Dynapharm (M) Sdn Bhd

Name of Company		
BASF (Malaysia) Sdn Bhd	Halex Woolton (M) Sdn Bhd	Eagle & Pagoda Brand Teck Aun Medical Factory Sdn Bhd
BASF PETRONAS Chemicals Sdn Bhd	Hempel Manufacturing (Malaysia)	Eastboard Chemicals Sdn Bhd
Becker Industrial Coatings (M) Sdn Bhd	Hexaworth Sales & Services Sdn Bhd	Eng Kah Enterprise Sdn Bhd
Bemis Asia Pacific Sdn Bhd	Ho Poh Onn Medical Hall (M) Sdn Bhd	EZI Motartech Sdn Bhd
Best Crete (M) Sdn Bhd	Hsing Lung Sdn Bhd	Farben Technique (M) Sdn Bhd
Bio Chempro Industry	IFFCO (Malaysia) Sdn Bhd	Fatty Chemical (Malaysia) Sdn Bhd
Bio Enviro Industries Sdn Bhd	Innovative Chemicals & Lubricants	Federal Fertilizer Co Sendirian Berhad
Bodibasixs Manufacturing Sdn Bhd	International Paint Sdn Bhd	Follow Me Industries Sdn Bhd
Bonding Technology Resources Sdn Bhd	IOI Pan-Century Oleochemicals Sdn Bhd	Fulian (M) Sdn Bhd
Casima (M) Sdn Bhd	Jebsen & Jessen Packaging Sdn Bhd	Hong Yang Hoo Pharma Sdn Bhd
Cementaid Sdn Bhd	Lian Soon Siong (M) Sdn Bhd	IOI Acidchem Sdn Bhd
Century Advance Technology Sdn Bhd	MOHM Chemical Sdn Bhd	Jusprint (Penang) Sdn Bhd
Citychemo Manufacturing Sdn Bhd	Monsanto (Malaysia) Sdn Bhd	KCK Pharmaceutical Industries Sdn Bhd
CL Cosmetic Industries Sdn Bhd	Natural Oleochemicals Sdn Bhd	Ken Prima Cosmeceuticals Sdn Bhd
Colgate-Palmolive (Malaysia) Sdn Bhd	Pacific Oleochemicals Sdn Bhd	Kimia Zue Huat Sdn Bhd
Color Pigment (M) Sdn Bhd	Petrochemicals (M) Sdn Bhd	Malayan Electro-Chemical Industry Co
Colorex Sdn Bhd	Plextech (Malaysia) Sdn Bhd	Metoxide Malaysia Sdn Bhd

Name of Company		
Combo Roots Power Sdn Bhd	Polycore Optical (M) Sdn Bhd	Mipox Malaysia Sdn Bhd
Coscolab Sdn Bhd	Primechem Malaysia Sdn Bhd	Nationgate Solution (M) Sdn Bhd
Cosmetech Manufacturing	Sanho Manufacturing & Packaging	Penchem Technologies Sdn Bhd
Cosmo Scientex (M) Sdn Bhd	Siegwerk Malaysia Sdn. Bhd.	Penfibre Sdn Bhd
CP Manufacturing Sdn Bhd	Smart Paint Manufacturing Sdn Bhd	Peter Greven Asia Sdn Bhd
Cytopro Malaysia Sdn Bhd	Sequoia Marketing Sdn Bhd	Professional Tools & Dies Sdn Bhd
Dardanchem Sdn Bhd	Sky Resources Sdn Bhd	Air Products Malaysia Sdn Bhd
Day International Sdn Bhd	Symbiotica Speciality Ingredients	Ajinomoto (Malaysia) Berhad
Dermarque Sdn Bhd	Texchem Corporation Sdn Bhd	Algaetech International Sdn Bhd
DIC (Malaysia) Sdn Bhd	Thurgas Industries Sdn Bhd	Arch Wood Protection (M) Sdn Bhd
Double Class (M) Sdn Bhd	Toray Plastics (Malaysia) Sdn Bhd	ASTA Chemicals Sdn Bhd
Durachem Sdn Bhd	Winchem (Malaysia) Sdn Bhd	Axalta Powder Coating Systems (Malaysia) Sdn Bhd
Emery Oleochemicals (M) Sdn Bhd	Winwa Medical Sendirian Berhad	Bright Resource Technology Sdn Bhd
Eversafe Extinguisher Sdn Bhd	Zestron Precision Cleaning Sdn Bhd	CEEBEE Chemicals Sdn Bhd
FA Herbs Sdn Bhd	Chemfield Sdn Bhd	Celcure Chemicals (M) Sdn Bhd
Farmcochem Sdn Bhd	Chemical Industries (Malaya) Sdn Bhd	Champion Photochemistry Sdn Bhd
Fortune Laboratories Sdn Bhd	Family Products Sdn Bhd	Chemical Company of Malaysia Berhad

Name of Company		
Fosroc Sdn Bhd	Gaharu Technologies Sdn Bhd	Clorox (Malaysia) Sdn Bhd
Fujikura Chemicals Sdn Bhd	Gummi Metall Technik (M) Sdn Bhd	Crestage Industry Sdn Bhd
Fujikura Kasei Malaysia Sdn Bhd	Henkel (Malaysia) Sdn Bhd	DIEM Duroil Sdn Bhd
Ganofarm R&D Sdn Bhd	Higard (M) Sdn Bhd	Felda Agricultural Services Sdn Bhd
Gas Pantai Timur Sdn Bhd	Hovid Berhad	Imextco (M) Sdn Bhd
GI Tech Nano Solution Sdn Bhd	Kenep Resources (Asia) Sdn Bhd	Intermed Esters Sdn Bhd
Givaudan Malaysia Sdn Bhd	Kurz Production (Malaysia) Sdn Bhd	InterMed Sdn Bhd
GRP Sdn Bhd	Magnalium Sdn Bhd	Kotra Pharma (M) Sdn Bhd
Guomax Sdn Bhd	Malay-Sino Chemical Industries Sdn Bhd	Legend Revolution Sdn Bhd
H. B. Fuller Adhesives Malaysia Sdn Bhd	MCB Industries Sdn Bhd	Lotte Chemical Titan Holding Sdn Bhd.
Hamac Food Industries Sdn Bhd	Nam Pharma Sdn Bhd	MCNS Polyurethanes Malaysia Sdn Bhd
Harvest Paint Industries Sdn Bhd	Sancora Paints Industries Sdn Bhd	Metals & Chemicals Technology Sdn Bhd
Herbal Science Sdn Bhd	Sidratul Enterprise	Pacific Inter-Link Sdn Bhd
Hextar Chemicals Sdn Bhd	Stekken Sdn Bhd	Polyplastics Asia Pacific Sdn Bhd
Hock Lee Rubber Products Sdn Bhd	Syarikat Nam Ah Sdn Berhad	Products Manufacturing Sdn Bhd
Hoe Pharmaceuticals Sdn Bhd	Tor Minerals (M) Sdn Bhd	Rayson Laboratories Sdn Bhd
i-Chem Solution Sdn Bhd	Uniko Calcium Carbonate Industry Sdn Bhd	Recron (Malaysia) Sdn Bhd
Idaman Pharma Manufacturing Sdn Bhd	Unimatex Sdn Bhd	Schaefer Kalk (Malaysia) Sdn Bhd

Name of Company		
IDS Manufacturing Sdn Bhd	Unitata Berhad	Shell Refining Co (FOM) Bhd
Imaspro Resources Sdn Bhd	Vinico Sdn Bhd	Sime Darby Berhad
Innoscience Manufacturing Sdn Bhd	Wirakata Global Sdn Bhd	SKCC Laboratories Sdn Bhd
Intercosmetic Asia Pacific Sdn Bhd	Akzo Nobel Paints (Malaysia) Sdn Bhd	Sterling Drug (M) Sdn Bhd
International Flavors & Fragrances	Allnex Malaysia Sdn Bhd	Teknogas (M) Sdn Bhd
IPI Sendirian Berhad	Baerlocher (M) Sdn Bhd	Unilever (Malaysia) Holdings Sdn Bhd
Ivy Beauty Corporation Sdn Bhd	Bezt Clean Industries Sdn Bhd	Venturemore Premium Sdn Bhd
Ixora Prestij Sdn Bhd	Biotech Fusion Sdn Bhd	YMWOO Corporation Sdn Bhd
Jadi Imaging Technologies Sdn Bhd	Boustead Sissons Paints Sdn Bhd	Daibochi Plastic And Packaging Industry Bhd
Johnson & Johnson Sdn Bhd	Goodmaid Chemicals Corporation	Perniagaan Orang Kampung Sdn Bhd
Jotun Paints (Malaysia) Sdn Bhd	Hana Medic (Manufacturing) Sdn Bhd	Synthese (Malaysia) Sdn Bhd
Kaihatsu Global Marketing Sdn Bhd	N.S. Uni-Gloves Sdn Bhd	United Detergent Industries Sdn Bhd
Kansai Paints Asia Pacific Sdn Bhd	Osmosis Nutrition Sdn Bhd	Xepa-Soul Pattinson (Malaysia) Sdn Bhd
KCC Paints Sdn Bhd	Saiko Rubber (Malaysia) Sdn Bhd	FPG Oleochemicals Sdn Bhd
Ken-Rich Chemical Production Sdn Bhd	Sika Kimia Sdn Bhd	Kaneka (Malaysia) Sdn Bhd
Kenso Corporation (M) Sdn Bhd	DXN Industries (M) Sdn Bhd	Nice Rika Biotechnologies Sdn Bhd
Khobates Industries	Gano Excel Industries Sdn Bhd	RP Chemicals (Malaysia) Sdn Bhd

Name of Company		
Kimia Suchi Sdn Bhd	Hexion Sg Petani Sdn Bhd	Huntsman P&A Asia Sdn Bhd
Kyoumei Industries Sdn Bhd	Kholin Sdn Bhd	Optimistic Organic Sdn Bhd
Lam Soon (M) Berhad	Malaysian NPK Fertilizer Sdn Bhd	See Sen Chemical Berhad
Lam Soon Edible Oils Sdn Bhd	Swiss Lab Biotech Sdn Bhd	Agri Borneo Fertilizers Sdn Bhd
Lexis Chemical Sdn Bhd	ASEAN Bintulu Fertilizer Sdn Bhd	S.A. Wood Chemicals Sdn Bhd
Linatex Rubber Products Sdn Bhd	B.I.G. Industrial Gas Sdn Bhd	Sakata Inx (Malaysia) Sdn Bhd
Linde Malaysia Sdn Bhd	Tokuyama Malaysia Sdn Bhd	SB Tape International Sdn Bhd
Lo Hong Ka Sdn Bhd	One Team Networks Sdn Bhd	Secomex Manufacturing (M) Sdn Bhd
Luxchem Polymer Industries Sdn Bhd	Osdec International Sdn Bhd	Shadowfax Sdn Bhd
MACSAM Sdn Bhd	OWI Lab (M) Sdn Bhd	Sime Kansai Paints Sdn Bhd
Malayan Adhesives & Chemicals Sdn Bhd	Packaging Centre Services Sdn Bhd	Sipro (Malaysia) Sdn Bhd
Malaysian Energy Chemical & Services Sdn Bhd	Pahang Pharmacy Sdn Bhd	Smart Maintenance Solution Sdn Bhd
Mapei Malaysia Sdn Bhd	Palm-Oleo (Klang) Sdn Bhd	SME Ordnance Sdn Bhd
Master Materials Manufacturing Sdn Bhd	Parexgroup Sdn Bhd	Southern Edible Oil Industries (M) Sdn Bhd
Mastra Industries Sdn Bhd	Performance Additives Sdn Bhd	Sun Jiang Industries Sdn Bhd
Matrix Flavours & Fragrances Sdn Bhd	Perisai Makmur Industries Sdn Bhd	Swan Coatings (M) Sdn Bhd
Matrix Oleochem Sdn Bhd	Petroleum Conservation Sdn Bhd	Techbond Manufacturing Sdn Bhd

Name of Company		
Maxsilin Products Sdn Bhd	Pharmaniaga Manufacturing Berhad	Tele-Paper (M) Sdn Bhd
Medinova Sdn Bhd	Polymer Resources Sdn Bhd	Tenaga Kimia Sdn Bhd
Mercury Paints Factory Sdn Bhd	PolyPacific Polymers Sdn Bhd	The Valspar (Malaysia) Corporation
Mewah Coat Sdn Bhd	PPG Coatings (Malaysia) Sdn Bhd	Thor Specialties Sdn Bhd
Mey Chern Chemicals Sdn Bhd	Priceabuse.Com Sdn Bhd	Tiarco Chemical (Malaysia) Sdn Bhd
MFRP Engineering Sdn Bhd	PYE Products (M) Sdn Bhd	Toyo Ink Sdn Bhd
Mighty Adhesive Sdn Bhd	Q-Pack (M) Sdn Bhd	Toyochem Specialty Chemical Sdn Bhd
MOH Pharmaceutical Technologies	Reckitt Benckiser (Malaysia) Sdn Bhd	Translab Industri (M) Sdn Bhd
MPI Polyester Industries Sdn Bhd	Reka Nutrition Sdn Bhd	Trumer Cosmescience Sdn Bhd
MRT Sdn Bhd	Rica Marketing Sdn Bhd	Tufbond Technologies Sdn Bhd
Natural Elixirs Sdn Bhd	Ricca Peacock Asia Sdn Bhd	UMW Advantech Sdn Bhd
Ngo Chew Hong Oils & Fats (M) Sdn Bhd	Riso Sekken Sdn Bhd	Unilectro (M) Sdn Bhd
NIG Gases Sdn Bhd	RLA Polymers (M) Sdn Bhd	URO Polymers Sdn Bhd
Nippon Menard (M) Sdn Bhd	Rovski Industries Sdn Bhd	Vital Technical Sdn Bhd
Nippon Paint (M) Sdn Bhd	Yara International (M) Sdn Bhd	Vivaderm Resources Sdn Bhd
Noripharma Sdn Bhd	Yes Dynamic Sdn Bhd	Wei Liam Costotech Sdn Bhd
Nozomi Marketing Sdn Bhd	Yushiro Malaysia Sdn Bhd	Wilron Products Sdn Bhd

Name of Company		
Nylex Specialty Chemicals Sdn Bhd	Zagro Chemicals Sdn Bhd	Yakin Invest Corporation Sdn Bhd
O.D. Paints Sdn Bhd	3M Malaysia Sdn Bhd	OKBB Sdn Bhd
O.M.M. Graphic Sdn Bhd	OAG Offshore Pipeline Services Sdn Bhd	Omya Malaysia Sdn Bhd

A. 2 Expert Opinion Feedback on the Survey Questions

No.	Name	University/ Institution	Comments
1	Prof. Ramayah Thurasamy	Universiti Sains Malaysia	- Reviewed the items of Islamic work ethics and corporate sustainability performance - Agreed on the suitability of the items.
2	Dr Mohd Nur Ruzainy Alwy	Universiti Tenaga Nasional	- Reviewed the structure of the questions - Agreed on the suitability of the structure of the questions with some amendment
3	Dr Mohamed Khudari	Universiti Tenaga Nasional	- Reviewed the structure of the questions - Agreed on the suitability of the structure of the questions with some amendment
4	Dr Liew Sook Yee	Universiti Malaya	- Reviewed the items of green practices and the structure of the questions - Agreed on the suitability of the items for the chemical manufacturing organisations
5	Dr Uzir Abdul Malik	Lestary, Universiti Kebangsaan Malaysia and Solid Waste Management (SWM Corporations)	- Reviewed all items - Agreed on the suitability of the items used
6	CEO 1	Chemical manufacturing company	- All questions are okay; they are understandable. - The questions on green practices are understandable.
7	CEO 2	Chemical manufacturing company	- All questions are okay; they are suitable for the chemical manufacturing organisations.

A. 3 Focus Group Members Feedback on the Survey Questions

No.	Name of Company	Position	Comments
1	Company A	Chief Executive Officer	- All questions are okay; they are suitable for the chemical manufacturing organisations, as this company practices them.
2	Company B	Manager	- All questions are okay; they are understandable.
3	Company C	Manager	- All questions on green practices, Islamic work ethics, and corporate sustainability performance are easy to understand and suitable for the chemical manufacturing organisations.
4	Company D	Manager	- All questions are okay; they are suitable for the chemical manufacturing organisations. - There is no need to add or change any question, as the questions are suitable for the chemical manufacturing organisations and easy to understand.
5	Company E	Manager	- All questions are okay; easy to understand. - Non-Muslims also can answer the Islamic work ethics, as the questions are general.
6	Company F	Manager	- All questions are okay and suitable, as this company implements green practices. - Suitable for the chemical manufacturing companies in Malaysia
7	Company G	Manager	- All questions are okay, suitable, and understandable. - The questions on Islamic work ethics are suitable for non-Muslims to answer.
8	Company H	Manager	- All questions are okay and easy to understand. - The questions on Islamic work ethics are okay for non-Muslims to answer.
9	Company I	Manager	- All questions are okay, suitable, and

No.	Name of Company	Position	Comments
			understandable. - But, in general, there are some companies that do not implement green practices due to the absence of awareness and lack of enforcement from the government; there is no punishment for companies that do not practice.
10	Company J	Executive	- All questions are okay. - But, in terms of practicality, the company does not practice some of the green practices because some of the good products are normally hazardous and as for green, it is no longer pure and not okay; there are many procedures involved.
11	Company K	Executive	- All questions are okay, understandable, and suitable. - Non-Muslims can answer the questions on Islamic work ethics.
12	Company L	Executive	- All questions are okay. - The questions on Islamic work ethics are suitable for non-Muslims to answer.
13	Company M	Executive	- All questions are okay; chemical manufacturing companies can answer, but may not suitable for other companies. - All questions are easy to understand and suitable. - The questions on Islamic work ethics are understandable for non-Muslims to answer.

APPENDIX B

B. 1 Support Letter from Universiti Tenaga Nasional

Universiti Tenaga Nasional
The National Energy University

Putrajaya Campus, Jalan IKRAM-UNITEN, 43000 Kajang, Selangor, Malaysia.
Tel : +6 03-8921 2020, Fax : +6 03-8921 2119

Web : www.uniten.edu.my
Email : info@uniten.edu.my

Reference : UNITEN/KSHAS/BIS.UE/6/4.Bil. (85)

Date : 31 July 2017

TO WHOM IT MAY CONCERN

LETTER OF INTRODUCTION

NAME : **MARYAM JAMILAH BINTI ASHA'ARI** **(PM20683)**

PROGRAM : **DOCTOR OF PHILOSOPHY IN BUSINESS MANAGEMENT**

SUBJECT : **RESEARCH PROJECT (DRP700)**

LECTURER : **PROF. DR. SALINA BT. DAUD**

It's contentment for us to inform that the bearer of this letter is from the College of Business Management & Accounting, Universiti Tenaga Nasional. To fulfil the education philosophy of the university to produce market-driven graduates, most of the courses offered by the College of Business Management & Accounting require students to do **research** that involve information gathering from up-and-coming organisations.

The information is used to augment student's knowledge particularly when matching theories to real life practices in organisations. Therefore, any information provided would be treated with utmost confidentiality and strictly used for academic enhancement purposes.

We would therefore very much appreciate if your organisation could provide meaningful information about your organisation that would assist the student with regard to the project paper.

We are truly indebted to your kind consideration and support.

Yours faithfully,

AMANUDDIN BIN SHAMSUDDIN
Deputy Dean
Research & Postgraduate
College of Business Management & Accounting
UNIVERSITI TENAGA NASIONAL
Sultan Haji Ahmad Shah Campus
26700 Muadzam Shah
Pahang Darul Makmur.

Sultan Haji Ahmad Shah Campus, 26700 Bandar Muadzam Shah, Pahang, Malaysia. Tel : +6 09-455 2020, Fax : +6 09-455 2000

B. 2 Survey Questions

GREEN PRACTICES AND CORPORATE SUSTAINABILITY PERFORMANCE

Research Information

Purpose: To obtain your views on your company's green practices and Islamic work ethics and their effects on the corporate sustainability performance.

Participation Information

Confidentiality: Your answers are confidential. The findings of this study are used for academic purposes.

Survey Results: The results are made available in statistical form.

Contact: I would be very happy to answer any question you might have. Please contact the provided mobile number, e-mail, or address of researcher.

Researcher: Maryam Jamilah Binti Asha'ari. PhD candidate, College of Graduate Studies (COGS), Universiti Tenaga Nasional.
Mobile phone: 017-2735113. E-mail: maryam14_jamie@yahoo.com

Thank you for your support and cooperation

Section 1: Demographic Profile

Please tick the relevant information and provide the details whenever necessary.

1. Type of chemical manufacturing organisations:

- ☐ Soap and detergents, cleaning and polishing preparations, perfumes, and toilet Preparations
- ☐ Paints, varnishes and similar coatings, printing ink, and mastics
- ☐ Pharmaceuticals, medicinal chemicals, and botanical products
- ☐ Basic chemicals, except fertilisers, and nitrogen compounds
- ☐ Pesticides and other agro-chemical products
- ☐ Plastics in primary forms and of synthetic rubber
- ☐ Fertilisers and nitrogen compounds
- ☐ Man-made Fibres
- ☐ Mix of types
- ☐ Other chemical products that are not classified elsewhere

2. Number of workers:

- ☐ 74 and below (Small)
- ☐ 75 to 200 (Medium)
- ☐ 201 and above (Large)

3. Operational Period (years):

- ☐ 10 and below
- ☐ 11 to 20
- ☐ 21 to 30
- ☐ 31 to 40
- ☐ 41 and above

4. Position:

- ☐ Chief Executive Officer/President
- ☐ General Manager/Manager
- ☐ Executive

SECTION 2: GREEN PRACTICES

Please indicate how accurately each statement describes your view using the following format.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Waste Management Those actions and activities that manage waste from its inception to its final disposal					
The company does solid waste separation at source.	1	2	3	4	5
The company uses recycle paper in memo or notice.	1	2	3	4	5
The company composts chemical waste.	1	2	3	4	5
The company purchases materials with recyclable feature.	1	2	3	4	5
The company cooperates with recycling organisations.	1	2	3	4	5
The company focuses on waste reduction at the functional area within the company.	1	2	3	4	5
The company analyses its internal processes to minimise waste.	1	2	3	4	5
The company begins working together with some supply chain partners to eliminate waste.	1	2	3	4	5
All supply chain partners understand the end-to-end processes to eliminate waste throughout the supply chain.	1	2	3	4	5
All supply chain partners work together to eliminate waste throughout the supply chain.	1	2	3	4	5

Sustainable Design Reduce or completely eliminate negative environmental impacts through sustainable designs					
The company designs products that reduce consumption of materials.	1	2	3	4	5
The company designs products that reduce consumption of energy.	1	2	3	4	5
The company designs products that reuse, recycle, and recover materials and component parts.	1	2	3	4	5
The company designs products that avoid or reduce the use of hazardous products in the manufacturing process.	1	2	3	4	5
The company cooperates with consumers for eco-design.	1	2	3	4	5
The company designs products that meet environmental regulations and safety standards.	1	2	3	4	5

Sustainable Design Reduce or completely eliminate negative environmental impacts through sustainable designs					
The company designs products that have the least weight and capacity that reduces the time consumption.	1	2	3	4	5
The company designs products that have the least capacity for the area stores.	1	2	3	4	5
The company designs products that require the least energy for the transportation process.	1	2	3	4	5
The company designs products that are easy to set up for users in the most energy-saving way.	1	2	3	4	5

Eco-Labelling Label of products that have the long-term goal of natural preservation with low detrimental environmental impacts at all stages of the life cycle					
The company uses eco-label on the packaging of products.	1	2	3	4	5
The company uses eco-label to improve its market position compared to competitors.	1	2	3	4	5
The company uses eco-label to give more leeway in setting prices.	1	2	3	4	5
The company uses eco-label to produce positive consumer response.	1	2	3	4	5
The company uses eco-label to make it easier to win new consumers.	1	2	3	4	5
The company uses eco-label to simplify product placement in the retail sector.	1	2	3	4	5
The company uses eco-label to improve the sales of products.	1	2	3	4	5
The company uses eco-label as an effective promotional tool in the industry.	1	2	3	4	5
The company uses eco-label as a tool to create incentives for companies to change the market.	1	2	3	4	5
The company often uses eco-label on the corporate website as a competitive advantage.	1	2	3	4	5

Sustainable Procurement Meeting business needs for materials, goods, utilities, and services in an environmentally-friendly, responsible, and ethical way					
The company cooperates with suppliers for environmental objectives.	1	2	3	4	5
The company does environmental audit for the suppliers' internal audit.	1	2	3	4	5
The company's suppliers have ISO14000 certification.	1	2	3	4	5
The second-tier supplier has environmentally friendly proactive evaluation.	1	2	3	4	5
The company provides design specification to the suppliers, which includes environmental requirements for purchased items.	1	2	3	4	5
The company uses a life cycle analysis to evaluate the environmental friendliness of products and packaging.	1	2	3	4	5
The company ensures safe, incoming movement of products to the company facilities.	1	2	3	4	5
The company asks the suppliers to commit to the waste reduction goals.	1	2	3	4	5
The company ensures that the suppliers participate in the design of products for recycling or reuse.	1	2	3	4	5
The company participates in the design of products for disassembly.	1	2	3	4	5

Sustainable Marketing Marketing activity that satisfies consumer needs and organisational goals and assure ecosystem compatibility					
The company ensures brand loyalty by manufacturing products through environmentally friendly process.	1	2	3	4	5
The company educates consumers to use products in an environmentally friendly manner.	1	2	3	4	5
The company advertises positive environmentalism through environmentally friendly product packaging.	1	2	3	4	5
The company continually reminds consumers through the advertisements of eco-friendly products.	1	2	3	4	5
The company develops a reputation for manufacturing environmentally friendly products.	1	2	3	4	5
The company promotes products through eco-friendly modes of communication.	1	2	3	4	5

Sustainable Marketing Marketing activity that satisfies consumer needs and organisational goals and assure ecosystem compatibility					
The company uses green supply chain for procurement and distribution.	1	2	3	4	5
The company brands product associating with green marketing practice.	1	2	3	4	5
The company uses green initiatives to attract new market opportunities.	1	2	3	4	5
The company uses green marketing to make consumers aware of environmentally friendly business.	1	2	3	4	5

Sustainable Lifestyles Ways of living that allow society to meet their aspirations and personal needs, while allowing the future and current generations to do the same.					
The company eco-improves the office for good working environment.	1	2	3	4	5
The company uses energy and water wisely in its daily operations.	1	2	3	4	5
The company extends the life of things to minimise waste.	1	2	3	4	5
The company chooses eco-products and services as the main business.	1	2	3	4	5
The company travels sustainably for organisational programmes to reduce energy use.	1	2	3	4	5
The company sets up and uses resources efficiently in the community.	1	2	3	4	5
The company uses and future-proofs outdoor spaces for a sustainable lifestyle.	1	2	3	4	5
The company involves in improving the environment by showing positive cooperation among the community.	1	2	3	4	5
The company practices sustainable lifestyle as its goal.	1	2	3	4	5
The company produces eco-friendly products because it is important for the consumers' healthy growth.	1	2	3	4	5

SECTION 3: ISLAMIC WORK ETHICS

Please indicate how accurately each statement describes your view using the following format.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

In my organisation:

Islamic Work Ethics The Islamic work ethics is defined as "good character" according to the Islamic practice.					
The company agrees that laziness at the workplace should be avoided.	1	2	3	4	5
The company agrees that employees need to be dedicated towards work.	1	2	3	4	5
The company agrees that good work benefits both company and employees.	1	2	3	4	5
The company agrees that justice and generosity at the workplace are necessary for the employees.	1	2	3	4	5
The company believes that employees who produce more than enough to meet company's needs contribute to the prosperity of society as a whole.	1	2	3	4	5
The company encourages employees to carry out the work to the best of their ability.	1	2	3	4	5
The company believes that employees foster personal growth and social relations.	1	2	3	4	5
The company believes that employees' life has no meaning without work.	1	2	3	4	5
The company believes that more leisure time is not good for society.	1	2	3	4	5
The company emphasises and encourages human relations in the organisation.	1	2	3	4	5
The company believes that employees who work are able to control their environment and accomplishment.	1	2	3	4	5
The company prioritises creative work as a source of happiness and accomplishment.	1	2	3	4	5
The company believes that employees who work well are more likely	1	2	3	4	5

Islamic Work Ethics The Islamic work ethics is defined as “good character” according to the Islamic practice.					
to get ahead in life.					
The company believes that work gives employees the chance to be independent.	1	2	3	4	5
The company stresses on the importance of employees to meet deadlines at work for success.	1	2	3	4	5
The company encourages employees to constantly work hard to meet responsibilities.	1	2	3	4	5
The company believes that work is derived from intention and results, rather than just results.	1	2	3	4	5

SECTION 4: CORPORATE SUSTAINABILITY PERFORMANCE

Corporate sustainability is defined as meeting the needs of an organisation's current and future stakeholders.

Please indicate how accurately each statement describes your view using the following format.

1	2	3	4	5
Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

Social Performance The idea of maintaining or improving the current social welfare for the future generations					
The company improved health and safety for employees or community.	1	2	3	4	5
The company recognised and acted on the need to fund local community initiatives.	1	2	3	4	5
The company protected claims and rights of aboriginal people or local community.	1	2	3	4	5
The company showed concern for the visual aspects of the organisation's facilities and operations.	1	2	3	4	5
The company communicated the organisational environmental impacts and risks to the general public.	1	2	3	4	5
The company considered the interests of stakeholders in investment decisions by creating a formal dialogue.					

Economic Performance The company's effects on its stakeholder's economic condition as well as local, national, or international level economic systems					
The company sold waste products for revenue.	1	2	3	4	5
The company reduced costs of inputs for the same level of outputs.	1	2	3	4	5
The company reduced costs for waste management for the same level of outputs.	1	2	3	4	5
The company worked with the government officials to protect the organisation's interest.	1	2	3	4	5
The company created spin-off technologies that can be profitably applied to other areas of the business.	1	2	3	4	5

Economic Performance The company's effects on its stakeholder's economic condition as well as local, national, or international level economic systems					
The company differentiated the process or product based on the marketing efforts of the environmental performance of the process or product.	1	2	3	4	5

Environmental Performance Environmental performance is defined as how the environment is affected by the management of the organisation.					
The company reduced energy consumption.	1	2	3	4	5
The company reduced wastes and emissions from the operations.	1	2	3	4	5
The company reduced impact on animal species and natural habitats.	1	2	3	4	5
The company reduced the environmental impacts of its products or services.	1	2	3	4	5
The company reduced environmental impact by establishing partnership.	1	2	3	4	5
The company reduced the risk of environmental accidents, spills, and releases.	1	2	3	4	5
The company reduced purchases of non-renewable materials, chemicals, and components.	1	2	3	4	5
The company reduced the use of traditional fuels through the substitution of some less polluted energy sources.	1	2	3	4	5
The company undertook voluntary actions (for example, actions that are not required by regulations) for environmental restorations.	1	2	3	4	5
The company undertook actions for environmental audit, public disclosure, employee training, and immunity.	1	2	3	4	5

Green practices give positive impact to the company performance. Please give your views on the importance of green practices in your company.

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Thank you for your cooperation

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