SUSTAINABLE PERFORMANCE OF MANUFACTURING SMALL AND MEDIUM ENTERPRISES (SMEs) IN MALAYSIA: THE ROLES OF SUSTAINABLE PRACTICES AND ENTREPRENEURIAL BRICOLAGE

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LIST OF ABBREVIATIONS

ASEAN	Association of Southeast Asian Nations
AVE	Average Variance Extracted
B40	Bottom 40% of Income Earners
BCSD	Business Council of Sustainable Development
CCA	Confirmatory Composite Analysis
CFA	Confirmatory Factor Analysis
CMSPR	Community Sustainable practices
CMV	Common Method Variance
CO_2	Carbon Dioxide
CoE	Centre of Excellence
CR	Composite Reliability
CRM	Customer Relationship Management
CSR	Corporate Social Responsibility
CSRs	Country Specific Resources
CSSPR	Customer Sustainable practices
EB	Entrepreneurial Bricolage
ECSPF	Economic Performance
EFA	Exploratory Factor Analysis
EMSPR	Employee Sustainable practices
ENSPF	Environmental Performance
ENSPR	Environmental Sustainable practices
EL	Entrepreneurial Leadership
EU	European Union
F&B	Food and Beverages
FMM	Federation of Malaysian Manufacturer

FSI	Financial Support Implementation
FSRs	Firm Specific Resources
GCMY	Global Compact Network Malaysia
GDP	Gross Domestic Product
GHG	Greenhouse Gas
GSI	Government Support Implementation
GTMP	Green Technology Master Plan
GTFS	Green Technology Financing Scheme
HCSI	Human Capital Support Implementation
HOC	Higher Order Construct
HOM	Higher Order Model
HRM	Human Resource Management
HTMT	Heterotrait-Monotrait Ratio of Correlations
IR4.0	Industrial Revolution 4.0
KeTTHA	Kementerian Tenaga Teknologi Hijau dan Air
LM	Linear Model
LOC	Lower Order Construct
MPC	Malaysia Productivity Corporation
MITI	Ministry of International Trade and Industry
NEM	New Economic Model
NEP	New Economic Policy
NESDC	National Entrepreneur and SME Development Council
NGOs	Non-governmental Organisations
OLS	Ordinary Least Square
PIC	Person in Charge
PLS-SEM	Partial Least Square Structural Equation Model
PMS	Performance Management System

QMS	Quality Management System
RBV	Resource-Based View
ROA	Return on Asset
ROI	Return on Investment
SC	Sustainability Culture
SCI	Sustainability Culture Indicator
SDGs	Sustainable Development Goals
SMEs	Small Medium Enterprises
SOSPF	Social Performance
SPR	Sustainable practices
SPSPR	Supplier Sustainable practices
SPSS	Statistical Package for Social Sciences
SPV	Shared Prosperity Vision
TBL	Triple Bottom Line
TQM	Total Quality Management
TSI	Technological Support Implementation
VIF	Variance Inflation Factor
VRIN	Valuable, Rare, Inimitable, Non-substitutable

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PRESTASI KELESTARIAN PERUSAHAAN KECIL DAN SEDERHANA (PKS) SEKTOR PEMBUATAN DI MALAYSIA: PERANAN AMALAN KELESTARIAN DAN KEUSAHAWANAN 'BRICOLAGE'

ABSTRAK

Kesan daripada globalisasi ekonomi, bencana alam sekitar dan keruntuhan sosial, para peniaga terutamanya usahawan-usahawan perlu mencari kaedah yang paling berkesan dan efisyen bagi mengurangkan implikasinya yang besar. Walaupun terdapat pelbagai teori asas yang bermanfaat dalam memahami betapa pentingnya kelestarian, prestasi lestari yang dihasilkan oleh Perusahaan Kecil dan Sederhana (PKS) masih belum cukup diterokai. Kajian ini bertujuan untuk menyelidik faktor-faktor pendorong dan kesan daripada amalan kelestarian bagi mengurangkan krisis ekonomi, pencemaran alam sekitar, dan ketidakadilan sosial. Secara khususnya, faktor individu (kepimpinan keusahawanan), organisasi (budaya kelestarian), dan institusi (pelaksanaan bantuan kerajaan) dianggap sebagai pendorong kepada amalan-amalan kelestarian. Faktor-faktor ini seterusnya akan mempengaruhi prestasi kelestarian, di samping peranan yang dimainkan oleh keusahawanan "bricolage" sebagai penyederhana atau kontingen. Dengan menggunakan RBV dan teori efektuasi, satu kerangka teori telah dibangunkan dan dianalisis terhadap 146 responden dari kalangan PKS dalam sektor pembuatan di Malaysia. Kaedah analisis yang dikenali sebagai "Partial Least Square" (PLS) menggunakan perisian SmartPLS versi 3.2.8 telah digunakan. Hasil kajian menunjukkan bahawa kepimpinan keusahawanan dan budaya kelestarian adalah pemacu utama kepada amalan-amalan kelestarian. Sementara itu, pelaksanaan bantuan kerajaan didapati bukan faktor penting yang mempengaruhi

amalan tersebut. Selain itu, amalan kelestarian ditemui mempunyai kesan yang signifikan terhadap prestasi ekonomi, persekitaran dan sosial. Walau bagaimanapun, amalan kelestarian bukanlah perantara dalam hubungan kepimpinan keusahawanan dan pencapaian ekonomi. Namun, amalan tersebut adalah perantara dalam hubungan kepimpinan keusahawanan dan pencapaian persekitaran serta sosial. Pada peringkat organisasi, amalan kelestarian menjadi penghubung antara budaya kelestarian dan tiga dimensi prestasi kelestarian. Walaupun begitu, amalan kelestarian tidak menjadi penghubung dalam hubungan pelaksanaan bantuan kerajaan dan tiga dimensi prestasi kelestarian. Di samping itu, keusahawanan "bricolage" tidak mempunyai peranan penyederhana atau kontingen dalam memperkukuhkan hubungan antara amalan kelestarian dan prestasi kelestarian. Berdasarkan penemuan-penemuan tersebut, kajian ini turut mengemukakan batas-batas dan implikasi kajian. Di samping itu, beberapa cadangan untuk kajian akan datang juga dibincangkan secara terperinci dalam kesimpulan kajian ini.

SUSTAINABLE PERFORMANCE OF MANUFACTURING SMALL AND MEDIUM ENTERPRISES (SMEs) IN MALAYSIA: THE ROLES OF SUSTAINABLE PRACTICES AND ENTREPRENEURIAL BRICOLAGE

ABSTRACT

As a result of global economy, environmental and social catastrophes, businesses especially the entrepreneurs are seeking effective and efficient means to minimise the tremendous impacts. Although various theoretical foundations are beneficial in understanding the importance of sustainability, the sustainable performance of small-medium enterprises (SMEs) has yet to be explored. This research seeks to examine the drivers and outcome of sustainable practices to mitigate economic crisis, environment degradation, and social injustice. In particular, the individual (entrepreneurial leadership), organisational (sustainability culture), and institutional (government support implementation) level factors are presumed to drive the sustainable practices. These factors will in turn influence sustainable performance, and hence demonstrating the contingent role of entrepreneurial bricolage. Drawing on RBV and effectuation theory, a theoretical framework had been developed and analysed using 146 respondents among Malaysian manufacturing SMEs. An analytical method called Partial Least Squares (PLS) using SmartPLS software version 3.2.8 had been employed. The findings reveal that entrepreneurial leadership and sustainability culture are the key drivers of sustainable practices. Meanwhile, government support implementation is found to be not a significant factor that influences the practices. Additionally, sustainable practices are discovered to have positive effect on economic, environmental and social performance. However, sustainable practices are not the

mediator in the correlation of entrepreneurial leadership and economic performance. Yet, the practices are the mediator in the correlations of entrepreneurial leadership, and environmental and social performance. At the organisational level, sustainable practices mediate the correlation of sustainability culture and the three dimensions of sustainable performance. Nevertheless, at institutional level, sustainable practices are not the mediator in the correlation of government support implementation and the three dimensions of sustainable performance. In addition, entrepreneurial bricolage has no contingent role in strengthening the sustainable practices-sustainable performance nexus. Based on the major findings, this study's constraints and implications are presented. Also, the recommendation for future study is discussed in detail in the conclusion.

CHAPTER 1

INTRODUCTION

1.1 Introduction

The Global Risks Report 2020 has ranked sustainability-related issues as the top three impactful risks of the world. Economic stagnation, environmental degradation and global coronavirus pandemics lead to unemployment, climate change, biodiversity loss and poverty (World Economic Forum, 2020). It is estimated that 60% of the global ecosystems have been deteriorated by the sustainability risks; in which therefore requiring urgent action (Yusoff et al., 2019). In the context of Association of Southeast Asian Nations (ASEAN) region, there is an increasing anxiety about rapid industrialisation in the ASEAN countries. This is because these nations rely on energy-intensive carbon emitting production and management of natural resources to meet their populations' growing demands (Iqbal, Ahmad, & Nasim, 2020). Yet, the natural resources are diminishing and being manipulated faster than they can be regenerated by natural systems (Global Reporting Initiative, 2016).

Due to deforestation of peatland, the European Union (EU) has banned South East Asian palm oil as raw material for biodiesel, and to decrease its utilisation to zero by 2030 (Abdul Hamid, 2020). Malaysia has significantly been impacted and is confronting heavy criticisms with regard to palm oil production, illegal logging, loose environmental regulations, human right violations, poor development planning and water management, transportation issues, reforestation as well as inadequate information technology utilisation (Ahmad, Rahman, Afendi Rajendran, & Halim, 2020). Based on a global study in Science Magazine, Malaysia had been ranked as the planet's eighth highest polluter of plastics. It is estimated that the nation generated

about a million tonne of non-recycled plastic waste, or the waste is being thrown into the oceans (Zein, 2018). Most recently, 6000 victims were tested, and 75 students were referred to hospitals due to breathing difficulty and vomiting. These were results of the illegal dumping of hazardous toxic material into Sungai Kim Kim. The tragedy had not only harmed the residents, but the fishermen had also lost their income because the fishes were contaminated by the cancerous chemicals (A'isyah, 2019).

The massive economic, environmental and societal pressures on the ecosystem had led to the classification of sustainable development being a priority on the universal agenda. Sustainable development is about satisfying the current population's needs without the future generation's needs being compromised (World Commission on Environment and Development, 1987). In 2015, Malaysia together with other 190 nations had pledged to support 17 Sustainable Development Goals (SDGs), as well as 169 objectives for an improved living of the succeeding generation. The resolution adopted aims at reforming the planet and developing strategic efforts for the next fifteen years (United Nations, 2015).

This is a critical moment for businesses to establish sustainable practices and turn the challenges into opportunities. Since SMEs made up 98.5% of total establishments as reported by National Entrepreneur and SME Development Council (NESDC, 2019), the impact of their sustainable practices is extremely important for competitive advantage. There is a need to understand the driving factors of sustainable practices to enhance the sustainable performance of Malaysian SMEs. Hence, the intention of this research is to examine the drivers and impacts of sustainable practices on sustainable performance from the perspective of Malaysian manufacturing SMEs. In specific, present research investigates the driving factors at individual,

organisational and institutional levels, which influence sustainable practices. Subsequently, this research determines the role of sustainable practices as predictor towards sustainable performance in economic, environmental and social dimensions. Next, this research also analyses the mediating role of sustainable practices, and contingent role of entrepreneurial bricolage in strengthening the sustainable practices-sustainable performance relationship.

1.2 Research Background

1.2.1 Recent Trends of Sustainability

Literature on sustainability has appeared since 1990s. Since then, the researchers as well as practitioners have become interested in the subject, and it remains up to today (Gast et al., 2017). A bibliometrics study by Sarango-lalangui, Santos and Hormiga (2018) found that the common grounds of sustainability definition in stream of research are, "green", "sustainable", "ecological", "environmental", "entrepreneurial", "ecopreneur", "enviropreneur", "sustainable entrepreneurship", "ecological goals", "economic entrepreneurs", etc. Furthermore, Galpin, Whittington and Bell (2015) revealed that the terms "sustainability", "corporate social responsibility", "corporate social performance", "going green" and "triple bottom line" (TBL) are all referring to corporate enhancement for their long-run social, environmental and economic achievements.

John Elkington, (1994), made an introduction of integrating sustainability to the corporate environment. This approach is called TBL management, and it is for the achievement of environmental, social, and economic objectives (Figure 1-1). TBL states that at the convergence of environmental, economic and social performance,

corporations will find activities that do not only have a huge impact on the community and environment, but this will also lead to long-run economic and competitive advantages (Carter and Rogers, 2008). Cohen and Winn, (2007) disagreed that numerous kinds of entrepreneurial activities and market failures contribute to environmental degradation. York and Venkataraman, (2010) supported that sustainable entrepreneurship is a solution instead of a root cause of environmental pollution. Shepherd and Patzelt, (2011) reinforced that entrepreneurial actions can lessen environmental degradation and deforestation, conserve the ecosystem, and upgrade freshwater supply and agricultural activities.

Figure 1.1: The Triple Bottom Line Concept

Recent scholars, Geissdoerfer, Savaget, Bocken and Hultink (2017) mentioned that the definition of sustainability is that it is an integrated balance of economic achievement, environmental robustness and social comprehensiveness for the future and current population's advantages. According Kraus, Burtscher, Vallaster and Angerer (2018), sustainable entrepreneurs are "individuals who are creating and building profitable companies that also pursue environmental or social causes". In specific, Pacheco et al., (2010) stated that the discovering, creating, evaluating and

exploiting of opportunities for the production of new service and goods consistent with sustainable development objectives is called sustainable entrepreneurship.

Sustainable entrepreneurship has received much attention from different research fields, such as social entrepreneurship and environmental entrepreneurship (Sarango-lalangui et al., 2018). Social entrepreneurship emphasises on the creation of social value for people, elevates the marginalised and disadvantaged clusters, and place social agenda above profits. Muhammad Yunus, the founder of Grameen Bank is the best example of social entrepreneurs in Bangladesh who is contributing in alleviating poverty for several million people. Whereas environmental entrepreneurship focusses on the creation of environmental value as well as economic value. Solar energy companies are the great example of environment entrepreneurship, which offer better options in solving environmental problems while simultaneously making profits (Schaefer et al., 2015). Therefore, sustainable entrepreneurship is distinct from social and environmental entrepreneurship as the focus is on the creation of products and ventures that address economic, environment, and social dimensions simultaneously.

Sustainable entrepreneurship is related to the sustainable development approach where businesses are encouraged to align their activities with the social, environmental and financial goals for the creation of one-of-the-kind “triple bottom line” (Hooi, Ahmad, Amran, and Rahman, 2016). According to Hoogendoorn, Van der Zwan, and Thurik, (2017), entrepreneurs who initiate a business to fulfil self-interests and shared interests by addressing unfulfilled social and environmental requirements are usually referred to as sustainable entrepreneurs. Sustainable entrepreneurs encounter various difficulties compared to common entrepreneurs due

to the incongruity between the creation and appropriation of personal and societal values.

Hence, conventional approach of conducting businesses that solely concentrates on profit-making is obsolete where financial, social, and environmental perspectives are currently evolving. The modern approach does not recognise profitability as the only contributing factor to a corporation or a nation's achievement (Stubbs, 2017). Ultimately, sustainable entrepreneurship could be regarded as the only method that allows the combination of social, economic and environment aspects in creating a value, and where the living standard of the future generation is considered (Muñoz and Cohen, 2018).

1.2.2 The Challenges and Importance of Manufacturing SMEs in Malaysia

Carbon footprint has been the global major issue in environmental performance which had escalated by 120% from 1995 to 2015 (Hertwich, 2021). According to the scholar, two fifths of the carbon footprint emission is triggered by the manufacturing sector. Khan, Rasli, Hassan, Noordin and Aamir (2017) supported that manufacturing activities are one of the root causes of environmental degradation worldwide where they contribute almost 36.8% carbon dioxide (CO_2) emission to the environment. Although manufacturing sector is the second largest contributor to Gross Domestic Product (GDP) in Malaysia, the sector is accountable for 53 million metric tons of total CO_2 emission mainly from electronics, chemical and rubber industries. According to Abdullah et al., (2017), misallocation of resources happened at the ground level, therefore very minimal investment has been made by the SMEs to upgrade their operation where more energy efficient and renewal energy technology methods are utilised. Nik Wan et al., (2017) reported that most SMEs are still employing old

methods, managing their resources ineffectively and do not have adequate infrastructure in pollution control.

Manufacturing SMEs in Malaysia are forecasted to collectively impact environmental pollution, in which may overshadow the collective ecological effect generated by larger companies. At any given time, SMEs have an equal chance in contributing to the health and safety of the community and affecting organisational and national economic performance (Yacob et al., 2019). Masrom, Rahman and Daut (2018) indicated that the manufacturing sector's waste which consists of plastics, papers, packaging as well as large scraps is an increasing trend towards waste generation in Malaysia. Currently, solid waste amounting to 33,000 tonnes is generated every day; and it is predicted to upsurge by 2020. There are approximately 289 landfills in Malaysia, and there are only 7 sanitary landfills. The calamities are estimated to increase for the next several years consistent with the nation's population growth, economic globalisation, as well as urbanisation. The population of Malaysia is estimated to increase from 33.4 million (year 2020) to 37.4 million (year 2030).

Hence, as SMEs made up 97% of total businesses in many nations, there is an increasing call for them to address the concern about sustainability (Ahmad et al., 2020). In specific, SMEs dominate a large portion at 98.5%, or 907,065 of total business establishments in Malaysia (NESDC, 2019). Therefore, the impact of their activities and contributions to sustainability performance are extremely important. In the manufacturing sector, SMEs are defined as firms with sales turnover not exceeding RM50 million or their full-time workers are less than 200. Whereas for services and other sectors, the definition of SMEs is that they are firms that have sales turnover not exceeding RM20 million, or full-time workers not exceeding 75 (SME Corp Malaysia,

2020). More accurate definitions are as in Figure 1-2. Previous researchers outlined the life cycle of SMEs is divided into start-up, growth and maturity stage (Muda & Rahman, 2016) or conception, development, commercialization, consolidation, and maturity period (Jabłónski & Jabłónski, 2016). However, they did not mention any specific years for each of the stages. The only information are minimum market presence of 10 years are considered as matured company (Jabłónski & Jabłónski, 2016).

For a growing economy such as Malaysia, manufacturing SMEs continue to be the key driver of growth. This can be seen from the improvement in their contribution, i.e., an increase-by 5.0% in 2018, which contributes 22.4% to Malaysia's real GDP. In addition, manufacturing SMEs outperformed the overall manufacturing sector, with an average annual growth rate of 5.7% against 5.1% for overall manufacturing in the growth period of 2016-2018. Meanwhile, in 2018, the export growth was led by manufacturing SMEs at 5.1%; supported by manufactured goods, chemicals products, and beverages and tobaccos. The main destinations for SME manufacturing exports were Singapore, China, and the United States (NESDC, 2019). Indeed, the role of manufacturing SMEs in economic development is extremely crucial.

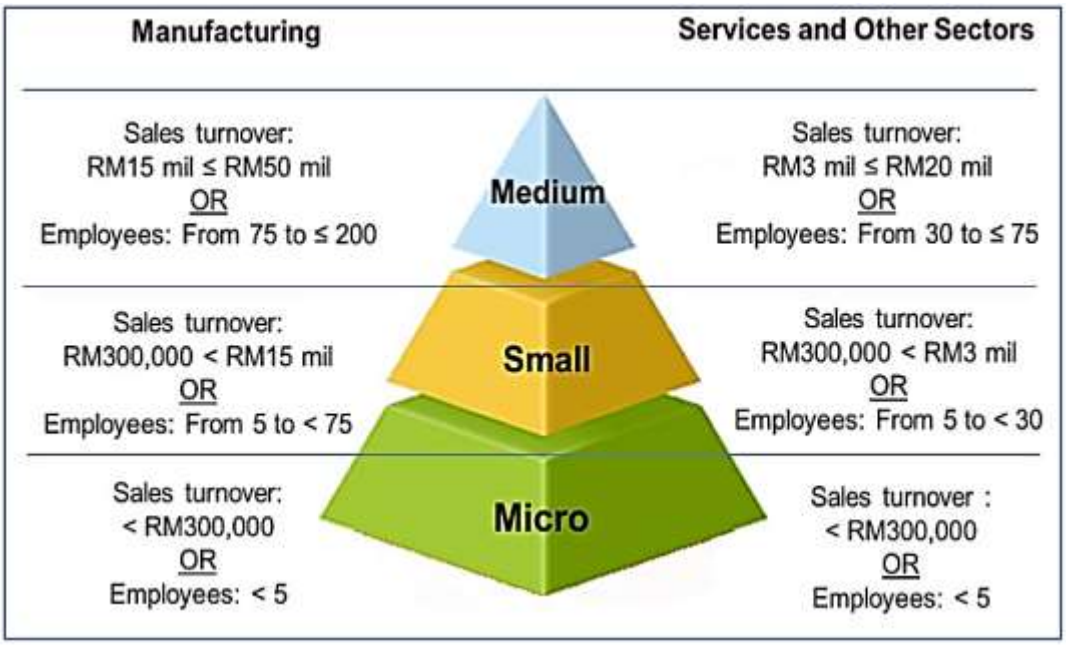

Figure 1.2: Definition of SMEs in Malaysia

In the SME Masterplan 2012-2020, Malaysia has targeted to achieve 41% share to GDP, 23% share to export and 65% share to employment by the year 2020 (SME Corp Malaysia, 2017). Table 1.1 summarises the achievement and target of the SME Masterplan from 2012 to 2018 (NESCD, 2019). Even though the target of employment has been achieved, the targets of GDP and total export are still lagging. Therefore, it is a wakeup call that SMEs cannot remain complacent. Instead, they need to improve their current practices to achieve the targets. SMEs must become the first-tier vendors for established and multinational firms for the attainment of superior performance. They need to embrace sustainable practices and produce environmentally and socially friendly products to conform to international standards and become competitive in the global economy (Ong, 2015).

Table 1.1: Snapshot of SMEs Performance and Target (2012-2020)

	2012	**2017**	**2018**	**Target 2020**
	← 5 years →		← 2 years →	
Share to GDP	33.0% (RM300 bil)	37.8% (RM491.2 bil)	38.3% (RM521.7 bil)	41% (RM606.1 bil)
Share to Employment	57.2%	66.0%	66.2%	65%
Share to Export	17.5% (RM134.7 bil)	17.3% (RM166.2 bil)	17.3% (RM171.9 bil)	23% (RM243.2 bil)

Source: NESDC, 2019

Furthermore, demand from stakeholders and pressure from large customers have triggered the SMEs to be more accountable with their products and extend the sustainable practices to achieve greater sustainable performance (Hameed, Ashari, & Nordin, 2014). Nevertheless, the SMEs are facing shortage of knowledge, skills, resources, information, technical competency and experience to adopt the sustainability initiatives (Ghazilla et al., 2015). Despite numerous interventions being carried out by the Malaysian government, the implementation or take up rate of sustainable practices is extremely low among the SMEs (Abdullahi et al., 2018). Evidently, only 3,400 (7%) of green manufacturing SMEs exist and only 500 companies registered under the Federation of Malaysian Manufacturer (FMM) are ISO 14001 certified, (KeTTHA, 2017). The ISO 14001 is crucial for the display of company's commitment in environmental management (NQA Global Certification Body, 2020).

SMEs in the manufacturing context are selected for present research due to three reasons. Firstly, manufacturing SMEs in Malaysia consist of 47,698 companies, and they are dominant where they make-up 97.14% of total Malaysian manufacturing

firms (NESDC, 2019). Secondly, even though the sector is significantly contributing to the nation's economy, the environment is facing degradation (Khan et al., 2017). Thirdly, the adoption of sustainable practices is still very low (Abdullahi et al., 2018) where obsolete technologies are used and management of resources is inefficient (Nik Wan et al., 2017). As such, there is a need to understand why the adoption rate is low; and what are the drivers of sustainable practices to achieve sustainable benefits for business community, ecosystem and society.

1.2.3 Three Spheres of Sustainability Drivers

According to Yusoff et al., (2018), the framework of sustainable growth of SMEs should incorporate three spheres of the SMEs, i.e., the entrepreneurs, the enterprises, and the relationship with the eco-systems and external environments of SMEs. Based on this model, present research applied the concept and classified them according to individual level factor, organisational level factor and institutional level factor. At individual level factor, entrepreneurial leadership skills and qualities are significant to achieve sustainable performance (Al Mamun, Ibrahim, Yusoff, & Fazal, 2018; Newman, Tse, Schwarz & Nielsen, 2018). Yet, majority of leaders or entrepreneurs do not have the unique ability in recognising and exploiting entrepreneurial opportunities as well as empower their followers to solve difficult environmental, social, and business issues (Esmer & Dayi (2017).

At organisational level factor, the beliefs and values of sustainability should be embedded into the way of life and reflected into the real behaviour of top management and employees (Vogel & Fischler-Strasak, 2014). Previous academic literature proved that sustainability culture drives sustainable performance in EU (Schönborn et al., 2019) and large Malaysian companies (Abdul-Rashid, Sakundarini, Ariffin et al.,

2017). However, empirical study on the link between sustainability culture and sustainable practices in SMEs are limited. Therefore, Abdullahi et al., (2018) proposed the SMEs to develop effective organisational culture via sustainability orientation to accomplish the sustainability agenda.

At institutional level factor, the government had allocated abundant financial and non-financial support programmes to the SMEs (Ahmad et al., 2018). However, the SMEs' failure rate is still very high of almost 50% within the first five years of establishments and two-third failing within the first ten years of establishments (Yusoff et al., 2018). Abdul Kohar, McMurray, and Peszyski (2013) found some of the recipients had misused the funds for their own interests. On the other hand, Fariza (2015) and Sahrom, Tan, and Yahya (2016) argued that bureaucratic procedures and poor distribution processes hinder the growth of the SMEs. Obviously, there were issues of implementation that need further scrutinization. Hence, the entrepreneurial leadership, sustainability culture, and government support implementation will be the focal factors of present research in examining the link to sustainable practices at individual, organisational and institutional level factors, respectively.

1.3 Preliminary Study on Sustainable Practices

Preceding academic literature claimed that the term sustainable practices is merely a jargon in boardrooms and business meetings, rather than a practical reality (Yacob et al., 2019); and the take up rate is extremely low (Abdullahi et al., 2018). Therefore, a preliminary study is undertaken to gauge fresh and real picture of manufacturing SMEs' sustainable practices at the ground level. Subsequently, it will allow the study to frame a more realistic problem statement for this research. Specifically, semi-structured interviews were conducted with respondents from four

manufacturing SMEs. All the interviews took place at a programme conducted by Malaysia Productivity Corporation (MPC) in September 2018. The respondents were four senior managers who represented companies located in Selangor. Table 1.2 presents the demographic background of responding companies.

Table 1.2: Demographic Background of Responding Companies

Respondent	**Position**	**Location**	**Industry**	**Year of Establishment**
A	Managing Director	Selangor	Textile and Wearing Apparel	5
B	General Manager	Selangor	Machinery and Equipment	16
C	Managing Director	Selangor	Electrical and Electronics	20
D	Operational Director	Selangor	Plastic Products	16

Several questions were posed to the interviewees regarding their views on sustainable practices, challenges and drivers in adopting sustainability from the perspective of manufacturing SMEs in Malaysia. The followings are the main questions:

1. What is your view on sustainable practices?
2. What types of sustainable practices are adopted in your organisation?
3. What motivate sustainable practices adoption by your organisation?
4. What are the issues faced by your organisation in adopting sustainable practices?
5. What are the issues faced by your organisation while dealing with government support?

1.3.1 Findings of Preliminary Study

In general, the interviews reveal the corresponding companies' views, current practices, drivers and challenges of sustainable practices adoption. Table 1.3 summarises the findings in accordance with the responding companies.

Table 1.3: Findings of Preliminary Study

Question	**Company A**	**Company B**	**Company C**	**Company D**
Opinion on sustainable practices	It is when we cooperate and engage with customers to produce good quality products in order to sustain our business	It is about ethics and transparency when dealing with suppliers and customers	It is our responsibility as the trustees and vicegerent to establish a just socio-economic condition to ensure the rights and interest of other inhabitants, not only for current but future generations	It is in our core values to ensure our operations lead us in the transition towards environmental, social and economic sustainability
Sustainable practices in organisation	ISO 9001:2015 Ensure product quality and good relationship with customers	OHSAS 18001:2007 ISO 9001:2015 Ensure safety and treat chemical waste according to standard	Lean Manufacturing, ISO 9001:2015, 5S practices Produce energy saving products.	Lean Manufacturing, ISO 9001:2015, 5S practices Cultivate culture of innovation and core values
Drivers to adopt sustainable practices	Implementation of government support	Strategic leadership to drive and influence the employees and stakeholders	Culture, vision, mission and values of people in organisation Mission "we dedicate ourselves to	Innovation culture as well as Technology

Question	Company A	Company B	Company C	Company D
			support the utilities in providing quality products and services for the benefit of the Nation"	
Challenges in adopting sustainable practices	Lack of technical expertise and skilled workforce	Leadership challenges to drive the attitude of people to commit to the values of sustainability	Nurturing right mindset of employees towards sustainability culture	Insufficient funds and budget. High cost to buy green technology, machine and equipment
Challenges in dealing with government support	Insufficient grant for R&D	Bureaucracy and time consuming when apply for loan. In the end, we do not apply.	Need more mentoring and coaching	Technology received is not compatible with current demands

1.3.2 Implications of Preliminary Study

Firstly, the findings of the preliminary study showed that the responding companies have their own understanding on sustainable practices. Company A, which was the youngest with 5 years of establishment viewed sustainable practices as having good relationship and providing quality products to customers. Company B with 16 years of establishment viewed sustainable practices as ethical and transparent relationship with customers and suppliers. Company C, the most experienced firm with 20 years of establishment history associated sustainable practices with the role of vicegerent of God, which is to be just to people, animals and nature. Company D with 16 years of establishment had integrated innovation into its core values to achieve

economic, environmental and social sustainability. This showed that even though the companies did not fully understand the actual meaning of sustainable practices but they had some fragmented ideas about the concept. According to Sarango-lalangui et al., (2018), it is normal when the understanding of sustainability by the SMEs are different from the large organisations because their resources are constraints.

Secondly, in terms of sustainable practices, company A had adopted quality management system ISO 9001:2015. The standard stipulates that the company has to show its capability in providing consistent quality of goods and services that satisfy its customers, as well as meeting the relevant statutory and law stipulation (NQA Global Certification Body, 2020). Meanwhile, company B was ISO 9001:2015 and OHSAS 18001:2007 certified, in which provide effective management of occupational health and safety (NQA Global Certification Body, 2020). Company C practiced ISO 9001:2015, lean manufacturing and 5S practices. Lean manufacturing is usually applied by companies to eliminate waste and improve efficiencies, and 5S practices method is employed to provide clean and tidy environment at workplace (Caldera et al., 2019). Company D was also practising ISO 9001:2015, lean manufacturing, 5S practices and innovation culture. This indicated that the SMEs involved in sustainable practices, and therefore, the impacts towards sustainable performance need to be explored.

Thirdly, as for the key drivers, company A believed in the implementation of government support; company B suggested strategic leadership, company C proposed culture, vision and mission, and company D viewed innovation culture and technology facilitate the adoption of sustainable practices. Fourthly, company A revealed on the lack of technical expertise and skilled operators, company B disclosed the factor of

leadership, company C exhibited embedding the right mindset into the culture, and company D exposed insufficient fund and budget as the challenges they currently confronting in adopting the sustainable practices. This revealed that they were interested to adopt sustainable practices and aware of the drivers and challenges. Based on the findings, present research has classified the motivating drivers into leadership; culture; and government support.

Finally, based on the information shared by the companies, present research concludes that the government financial incentives procedures are too bureaucratic; the human capital development needs more mentoring and coaching; technological support is incompatible and R&D incentives are inadequate. Therefore, the government support can be categorised into financial, human capital, and technological support. In a nutshell, the preliminary study provides basic insights into the true condition of the manufacturing SMEs in the context of sustainability to support the problem statement of present research. The implications of the findings also complement the literature in developing the research framework. Meanwhile, the information also serves as part of the background information of this research.

1.4 Problem Statement

An empirical research by Abdullah et al., (2017) found the SMEs in Malaysia are lacking in awareness and knowledge on green economy sustainability, which impede environmental sustainability. Despite numerous interventions, the adoption of sustainable practices is very poor among the SMEs (Abdullahi et al., 2018), with only 7% green manufacturing SMEs exist in Malaysia (KeTTHA, 2017). The preliminary interview of this research supports that none of the participating companies are ISO 14001 certified. Khan et al., (2017) and Masrom et al., (2018) mentioned that, 95% of

solid waste had been dumped into open area landfills, and 53 million metric tons of CO_2 were released by the manufacturing sector in Malaysia. Since sustainable practices are the resolution to address the problem (Ahmad et al., 2020; Ben Youssef et al., 2018), there is a need to measure the drivers and effect of sustainability efforts on sustainable performance. It is envisioned that for the attainment of sustainability goals, the industry and policy makers will use this study as a guide in their decision-makings and actions.

Although the concept of sustainability has existed since the nineteenth century, there have been no conclusive findings on the driving factors that influence sustainable practices. Some researchers dispute that the interest of sustainable practices is influenced by variables such as good governance (Rubio-Andrés et al., 2020); sustainability orientation (Abdulaziz-Alhumaidan & Ahmad, 2019), innovation and institutional quality (Ben Youssef et al., 2018); and strategic orientations, market orientation and entrepreneurial orientation (Jansson et al., 2017). In accordance with the findings of the preliminary study, those companies had described that implementation of government support, strategic leadership, culture, vision and mission, innovation culture and technology are the key motivators of sustainable practices in their companies. Therefore, present research had adapted and classified the key motivators according to individual, organisational and institutional level factors.

From the trend in the extant literature, some of the research looked at the drivers of sustainable practices at individual, organisational and institutional level factors separately, in which are fragmented. This research extended the scope by integrating the individual, organisational and institutional factors as suggested by

Yusoff et al., (2018), and examined other variables namely entrepreneurial leadership, sustainability culture and government support implementation to enrich and add value to the existing body of knowledge on sustainability. At individual level, most literature highlighted that the attitudes and qualities of leaders or business owners (Abdullahi et al., 2018; Hamann et al., 2017; Yacob et al., 2019) facilitate the sustainable practices. Yet, Esmer and Dayi (2017) argued that leadership skills and qualities are inadequate for business leaders as they need to have entrepreneurial leadership style to be competitive and outstanding. The field of entrepreneurial leadership is still at an early phase, currently evolving, insufficiently defined, and underexposed in entrepreneurship and SMEs research (He et al., 2017; Leitch & Volery, 2017). An empirical research by Newman et al., (2018) found entrepreneurial leadership demonstrated a more significant moderating impact on the correlation of creative self-efficacy and innovative behaviour in large Chinese multinational organisation. Meanwhile, He et al., (2017) revealed that entrepreneurial leadership has a vital function in a firm's development and successful future. Additionally, Avanti Fontana Soebowo Musa (2017) stated that entrepreneurial leadership has a critical function in the development and pursuit for innovation. Even previous research on entrepreneurial leadership did exist, effort to directly examine entrepreneurial leadership with sustainability practices and performance are scarce.

At the organisational level factor, prior literature argued that there should be a transformation in corporate culture, in which includes the employees' commitment to respond to the environmental and social demands (Islam et al., 2019). To put it differently, SMEs need to develop a sound organisational culture via sustainability orientation (Abdullahi et al., 2018), which is known as sustainability culture. Previous literature mentioned that very limited research had examined the link between

sustainability culture and sustainable practices. As such, the knowledge is scattered across different disciplines, research communities, and journals (Klewitz & Hansen, 2014). For instance, Schönborn et al., (2019) examined the impact of corporate social sustainability culture on organisational financial performance in EU; Abdul-Rashid, Sakundarini, Ariffin, et al., (2017) analysed the link between company culture and sustainable manufacturing practices in large manufacturing companies in Malaysia; and Marshall, McCarthy, McGrath, & Claudy (2015) investigated sustainability culture and the practices of social sustainability supply chain in Ireland. Thus, SMEs are expected to be more capable to embed the sustainability culture among their employees since they are less bureaucratic, agile and flexible compared to larger organisations (Idris, Hami, & Yamin, 2015). In addition, nurturing the right mindset and values to the company culture had also been highlighted as challenges in the preliminary interview of this research. Therefore, present research has decided to examine sustainability culture in the context of manufacturing SMEs as the driving factor of sustainable practices to achieve economic, environmental, and social performance.

As for the institutional level factor, Ahmad et al., 2020 discovered that Malaysian manufacturing SMEs are cognisant on the substantial role of government in providing necessary support to facilitate sustainable entrepreneurship practices. Nevertheless, previous academic literature highlighted there are issues in the coordination and distribution of the financial and technological support, which impede the internationalisation processes (Fariza, 2015) and innovative behaviour among engineers in biotechnology SMEs (Sahrom et al., 2016). Furthermore, Bahari, Jabar and Yunus (2017) admitted that government support is crucial in developing women entrepreneurs. However, the availability of human capital support programmes is not

visible to the SMEs as they are still unaware of the training offered by the government agencies (Bahari et al., 2017). Therefore, the programmes are not being fully utilised. This consequently leads to dearth of research that examines the implementation of government support in the context of sustainable practices. Present research classifies the scope of government support implementation into financial, human capital and technological support as the driving factors in facilitating the adoption of sustainable practices. The concept is in accordance with the focus area in the New Development Framework of SME Masterplan 2012-2020 (SME Corp. Malaysia, 2012) and had been highlighted in prior preliminary interview.

Many past studies had discussed on sustainable performance, but they mostly looked from the performance of the economy, and/or environmental aspect (Hami, Muhamad, & Ebrahim, 2015; Schönborn et al., 2019; Yacob et al., 2019). According to Islam et al., (2019) and Tseng, Wu, Ma, Kuo and Sai (2017), the overall sustainability assessment results are low. This is because the industries had given priority only to the economic and environmental aspects. To bridge the gap, present research had integrated social performance together with economic and environmental dimensions. By doing so, this research offers a broader perspective in explaining the effects of sustainable practices on sustainable performance according to TBL. This is parallel to the definition given by the Brundtland Report on sustainable development where no emphasis should be given on an aspect, instead there must a balance in the objectives and requirement of economy, environment and social (World Commission on Environment and Development, 1987). Present research, therefore, differs from the others by including the social dimension in sustainable performance.

The mediating role of customers and suppliers as dimensions of sustainable practices were tested in a few research (Burki, Ersoy, & Najam, 2019; Cantele & Zardini, 2018; Amjad, Jamil, & Ehsan, 2017). Employees' green motivation significantly mediate the relationship between environmental ethics, institutional environment, and managerial support; and green behaviour of organizations operating in the food production sector in Malaysia (Junsheng, Masud, Akhtar, & Rana, 2020). Corporate Social Responsibility (CSR) practices have insignificant direct effect on social performance, but significantly mediate the relationship between owner's sustainability orientation and social performance among manufacturing SMEs in Tunisia (Abdulaziz-Alhumaidan & Ahmad, 2020). Meanwhile, sustainability has a limited mediating function in the relationship between management and technological innovation and organisational performance of firms in Pakistan (Zhang, Khan, Lee, & Salik, 2019). Since the findings of the prior research is inconsistent, there is a need to investigate sustainable practices as a mediator between entrepreneurial leadership, sustainability culture and government support implementation; and economic, environmental, and social performance.

Present research proposes that entrepreneurial bricolage to act as the contingent or moderator in sustainable practices-sustainable performance relationship due to several reasons. First, previous research showed mixed results of sustainable practices and economic, as well as environmental and social performance (Abdul-Rashid, Sakundarini, Raja Ghazilla, et al., 2017), in which require a contingent variable to influence the strength of the relationship. Secondly, SMEs are conventionally associated with limited resources, lack of expertise and knowledge, and insufficient infrastructure (Nik Wan et al., 2017). Hence, effectuation theory describes that entrepreneurs are able to deliver in the presence of limited and scare resources

(Sarasvathy, 2001). This theory helps to support the role of entrepreneurial bricolage where businesses make do through the combination of resources available to achieve new goals (Baker & Nelson, 2005). Most recently, Iqbal, Ahmad, Tjahjono, et al., (2020) disclosed that entrepreneurial bricolage moderates the relationship between organisational networking and strategic agility.

There is an argument that prior research gives attention to large and publicly traded corporations. This, of course does not represent the actual situation of SMEs operating (Jansson et al., 2017) in developing and emerging countries (Abdullah et al., 2017). Therefore, present research fulfils the needs and extends the research setting to small and medium companies in a developing country, Malaysia. Based on the identified problems and gaps in the above discussions, there are huge calls to examine the driving factors of sustainable practices and the impacts on sustainable performance among the Malaysian manufacturing SMEs. This is to aid those involved such as the government, industry players, policy makers, and researchers who must overcome the sustainability problems to achieve competitive advantage and better standard of living.

To sum up, there are problem of low adoption of sustainable practices that affect sustainable performance, in which require present study to identify the key drivers to close the gap. Based on identified gap in the literature and the findings of preliminary study, the manufacturing SMEs may need unique entrepreneurial leaders, sound sustainability culture, and effective government support implementation to increase the adoption of sustainable practices. Furthermore, there are equivocal findings between the relationship of sustainable practices and sustainable performance which need further investigation. To bridge the gap, the study aimed to examine the relationship between the key drivers at individual level factor (entrepreneurial

leadership), organisational level factor (sustainability culture) and institution level factor (government support implementation) and sustainable practices; the relationship between sustainable practices and sustainable performance; the mediating role of sustainable practices; and the contingent role of entrepreneurial bricolage in strengthening the relationship between sustainable practices and sustainable performance.

1.5 Research Objectives

To generate better insight into the factors influencing sustainable practices, this research was undertaken with the primary goal of examining the drivers and outcomes of sustainable practices in the context of Malaysian manufacturing SMEs. This study is designed to achieve the following objectives:

RO1: To examine the relationship between individual factor (entrepreneurial leadership) and sustainable practices.

RO2: To examine the relationship between organisational factor (sustainability culture) and sustainable practices.

RO3: To examine the relationship between institutional factor (government support implementation) and sustainable practices.

RO4: To examine the relationship between sustainable practices and sustainable performance.

RO5: To examine the mediating role of sustainable practices in the relationship between entrepreneurial leadership; sustainability culture; government support implementation; and sustainable performance.

RO6: To examine the contingent role of entrepreneurial bricolage in strengthening the relationship between sustainable practices and sustainable performance

1.6 Research Questions

Based on the objectives of this research, the questions below have been developed:

RQ1: What is the relationship between entrepreneurial leadership (individual factor) and sustainable practices among manufacturing SMEs?

RQ2: What is the relationship between sustainability culture (organisational factor) and sustainable practices among manufacturing SMEs?

RQ3: What is the relationship between government support implementation (institutional factor) and sustainable practices among manufacturing SMEs?

RQ4: What is the relationship between sustainable practices and sustainable performance among manufacturing SMEs?

RQ5: Do sustainable practices mediate the relationship between entrepreneurial leadership; sustainability culture; government support implementation; and sustainable performance among manufacturing SMEs?

RQ6: Does entrepreneurial bricolage strengthen the relationship between sustainable practices and sustainable performance among manufacturing SMEs?

1.7 Scope of Study

In terms of scope, this study will focus on the empirical examination of sustainable practices and sustainable performance among the Malaysian manufacturing SMEs. The research was conducted to understand the driving factors at individual level (entrepreneurial leadership), organisational level (sustainability culture), and institutional level (government support implementation) on sustainable practices. Next, the research is also interested to determine the role of sustainable