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BUSINESS PERFORMANCE OF THE MALAYSIAN SME SERVICE PROVIDERS IN OIL AND GAS INDUSTRY

HASRIN HASHIM

Universiti Utara Malaysia

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HASRIN HASHIM

Universiti Utara Malaysia

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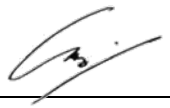
Pemeriksa *Dalam (Internal Examiner)*	:	**Assoc, Prof. Dr. Azahari Bin Ramli**	Tandatangan *(Signature)*	

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(Date)

Nama Pelajar (Name of Student)	:	**Hasrin Bin Hashim**
Tajuk Tesis / Disertasi *(Title of the Thesis / Dissertation)*	:	**Business Performance of Malaysian SME Service Providers in Oil and Gas Industry**
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Nama Penyelia/Penyelia-penyelia *(Name of Supervisor/Supervisors)*	:	**Assoc. Prof. Dr. Norashidah Binti Hashim**

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ABSTRACT

The global economic climate adversely affected SME service providers in Malaysia's oil and gas industry, which depend heavily on Petronas contracts. Nevertheless, limited research has explored the mediating role of networking in the relationship between innovation, market orientation, and SME business performance. This study examines the relationships between innovation, market orientation, and the business performance of SMEs in Malaysia's oil and gas sector. Additionally, the mediating role of networking in these relationships is investigated. Data for this study were collected through a quantitative survey using structured questionnaires administered to 200 owners and managers in Malaysia's oil and gas sector. They were analyzed using a partial least squares-structural equation modeling (PLS-SEM) approach with SmartPLS 3.0. The findings reveal that innovation is a key driver of SME business performance in Malaysia's oil and gas industry. By fostering value creation, innovation enables entrepreneurs to achieve superior outcomes and sustain their competitiveness. Further analysis confirms that networking significantly mediates this relationship. The results imply that firms with stronger networks can convert innovative activities into improved performance by leveraging shared resources, facilitating knowledge exchange, and forming strategic partnerships. However, market orientation does not have a statistically significant effect on SME performance, due to the confidentiality requirements embedded in Petronas' vendor procedures, which constrain firms' market responsiveness. Policymakers and industry practitioners should design and implement strategic initiatives that foster innovation and networking capabilities to strengthen SMEs' competitiveness. This study advances the Resource-Based View (RBV) by establishing networking as a pivotal mediating capability linking innovation to business performance in Malaysia's oil and gas sector.

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Keywords: Innovation, Market orientation, Networking, Small and medium enterprises, Business performance.

ABSTRAK

Iklim ekonomi global, kepincangan dan ketidaktentuan halatuju Petronas, telah memberi kesan buruk kepada penyedia perkhidmatan PKS di kalangan industri minyak dan gas Malaysia, yang sangat bergantung kepada kontrak bersama Petronas. Walau bagaimanapun, penyelidikan terhad telah meneroka peranan perantaraan rangkaian dalam hubungan antara inovasi, orientasi pasaran, dan prestasi perniagaan PKS. Kajian ini meneliti hubungan di antara inovasi, orientasi pasaran, dan prestasi perniagaan PKS dalam sektor minyak dan gas Malaysia. Sebagai tambahan, peranan perantaraan rangkaian dalam hubungan ini juga dikaji. Data untuk kajian ini dikumpulkan melalui tinjauan kuantitatif menggunakan soal selidik berstruktur yang diedarkan kepada 200 pemilik dan pengurus dalam sektor minyak dan gas di Malaysia. Responden dianalisis menggunakan pendekatan pemodelan persamaan-struktur kuasa dua separa (PLS-SEM) dengan SmartPLS 3.0. Hasil kajian ini mendedahkan bahawa inovasi adalah pemacu utama prestasi perniagaan PKS dalam industri minyak dan gas Malaysia. Dengan memupuk penciptaan nilai, inovasi membolehkan usahawan mencapai hasil yang lebih baik dan mengekalkan daya saing mereka. Analisis lanjut mengesahkan bahawa rangkaian secara signifikan memediasi hubungan ini. Keputusan menunjukkan bahawa firma dengan rangkaian yang lebih kukuh mampu menukar aktiviti inovatif menjadi prestasi yang lebih baik dengan memanfaatkan sumber yang dikongsi, memudahkan pertukaran pengetahuan, dan membentuk perkongsian strategik. Walau bagaimanapun, orientasi pasaran tidak mempunyai kesan yang signifikan secara statistik terhadap prestasi PKS, disebabkan oleh keperluan kerahsiaan yang terkandung dalam prosedur vendor Petronas, yang menghadkan responsif pasaran firma. Pembuat dasar dan pengamal industri harus merancang dan melaksanakan inisiatif strategik yang memupuk inovasi dan keupayaan rangkaian untuk mengukuhkan daya saing PKS. Kajian ini memajukan Pandangan Berasaskan Sumber (RBV) dengan menubuhkan rangkaian sebagai keupayaan perantaraan penting yang menghubungkan inovasi dengan prestasi perniagaan dalam sektor minyak dan gas Malaysia.

Kata kunci: Inovasi, Orientasi pasaran, Rantaian perniagaan, Perusahaan kecil dan sederhana, Prestasi perniagaan.

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LIST OF ABBREVIATION

BP	Business Performance
INNO	Innovation
MO	Market Orientation
NET	Networking
CO	Competitor's Orientation
CUSO	Customer Orientation
IFC	Inter-Function Coordination
AVE	Average Variance Extracted
CBSEM	Covariance-based SEM
CFA	Confirmatory Factor Analysis
f2	Effect Size
PLS	Partial Least Square
R-Square SEM	Structural Equation Modelling
SPSS	Statistical Package for Social Sciences
RBV	Resource Based View
TPB	Theory of Planned Behaviour
PLS-SEM	Partial Least Squares SEM

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CHAPTER ONE

INTRODUCTION

1.1 Background of Study

The world economy was already facing a very challenging outlook. The situation had been made worse with the Covid-19 outbreak that threatened the health and well being of world population. To control the spread of the virus the world governments had imposed the movement control order (MCO) and various other restrictions domestically and internationally. These measures had impacted the socioeconomic activity severely. The macro and micro businesses were seriously affected especially small and medium (SME) scale industries. Extensive cyclical recovery for the global outlook was progressing, assisted by investment and trade recovery in the midst of non-threatening financial realms within amenable policies, increased trust and vanishing effect of previous collapse of earlier commodity price (World Bank, 2022).

Even though positive prospect is predicted, the global scenario was still facing challenges comprising the likelihood of financial strain, elevated security, and increasing geopolitical pressures. The most worrisome scenarios were risks in the longer-term and challenges related to weakened output and prospective expansion (World Bank, 2022).

The main focus then shifts to the structural policies needed to enhance potential economic expansion and living standards (World Bank 2018). Even though the recent global economic activities accelerate, prospective output expansion is weakening. For 2013-17, potential growth was 2.5 per cent, indicating 0.5 per cent lower than its long

term average and 0.9 percent lower than its average years ago, with a sudden drop in developing economic realms. This was attributed by weaker-than-average rates of capital accumulation along with declining total productivity development and demographic trends. These forces must be overcome for they will reduce the global prospective growth by 0.2 to 0.5 within 10 years. Each economy must improve policy initiatives and efforts to increase physical and human capital, generate human capital participation, and upgrade organizations (World Bank, 2022).

Whereas, Malaysia is a developing economy and is part of emerging economic nations and actively promoting its domestic and international investments. Crucially, Malaysia is the second-largest oil and natural gas producer in Southeast Asia and is the fifth largest exporter of liquefied natural gas (LNG) in the world, as of 2019. It is strategically located on important routes for seaborne energy trade. Malaysia's energy industry is an important sector of growth for the economy. The government has focused on increasing hydrocarbon production through upstream investment and exploration as a driver of economic growth, but pursuing this strategy has become increasingly challenging because production has been declining as a result of maturing fields and a lack of developed new fields. Consequently, the SME service providers in the oil and gas sector are mainly impacted in terms of the performance and efforts to survive because of fewer business prospects and tougher competitions (US Energy, 2021).

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However, despite the issues and challenges the industry is facing, government has stepped up the gear and effort to invite potential investment from various strategic foreign investors such as Saudi Arabian Oil Co, a Middle Eastern oil giant. They have come to invest and help to accelerate the economic growth through a crude oil refinery project worth $7 billion under the Refinery and Petrochemicals Integrated

Development which is being established in Johor, a southern state of Malaysia. Market observers and financial analysts viewed this business joint venture as an effort to improve the waning economy (Bloomberg, 2019).

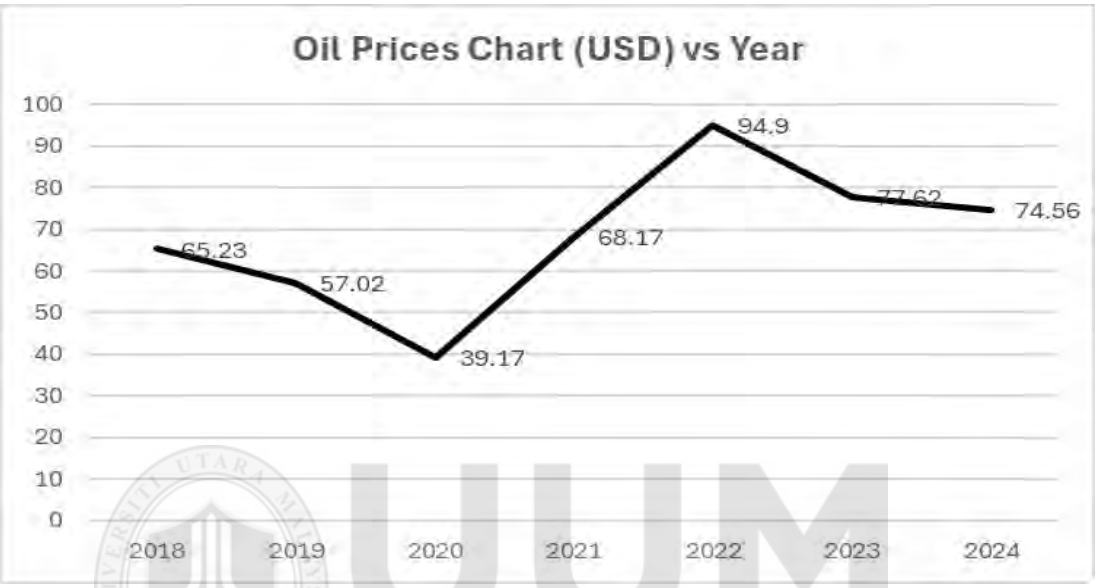
Furthermore, Petronas, the state-owned oil and gas firm, was struggling in the midst of weakening economy through the currency depreciation and political chaos. It was expected to pay a lesser dividend to the government for 2022 compared to RM25 billion in 2021 (2020: RM34 billion) following the introduction of a one-off Cukai Makmur on the company's chargeable income above RM100 million under Budget 2022 (Reuters, 2021).

Additionally, Petronas has two (2) main activities namely upstream and downstream or offshore and onshore. In Malaysia, it is the custodian of the nation's oil and gas resources, with a longterm commitment to maximise its value for the progress of the nation. From this deep-rooted pledge, it has expanded its upstream exploration and production capabilities and earned reputable operatorship the world over, running more than 216 producing fields with over 381 offshore platforms today. With a broad portfolio of resources and play types, it operates as a fully integrated business with an added advantage of niche expertise across the oil and gas value chain. Its presence in downstream activities spans over 70 countries through almost 30 representative and marketing offices for lubricants and petrochemical products, and over 2,000 retail stations in Malaysia, South Africa as well as sub-Saharan Africa (Petronas, 2022).

On the other hand and one of the most important issues, the Oil Producing and Exporting Countries' (OPEC) database highlights a worrying downtrend pattern for price of global oil for a 9-year period. It reached a peak between USD 100 to USD 110 from 2012 to 2013. In mid-2015, the plunge began; hitting the lowest in 2016 at USD

30 to USD 40 per barrel and from 2017 to 2018 stabilizing at between USD 50 to USD 70 per barrel. It started to plunge again in 2018 to 2020. Figure 1.1. illustrates the similarity of the crude oil prices volatility pattern from 2018-2024.

Figure 1.1 : Crude Oil Prices Volatility Pattern From 2018 to 2024 (Opec, 2024)



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For this research, oil and gas industry was chosen as the field of study because of its immense contribution to the national economy as well as the various SME service providers. Petroliam Nasional Bhd (Petronas), in meeting stakeholders' demand, has contributed almost RM1.2 trillion since 1976 in the spirit of giving out to the society, especially when the country is grappling with the COVID-19 pandemic. It said the contributions included those to the Federal government, state governments, tax collection, and payment of oil royalty, and the rate would likely increase in the long run (Petronas, 2021).

1.2 Problem Statement

The global economy, Petronas gloomy and uncertain outlook have affected SME service providers in the oil and gas industry for years ahead for they were relying greatly on the Petronas contracts. SMEs as a whole constitute about 97 per cent of business organizations and contribute to GDP (31 percent), employment (65 per cent), and exports (18 per cent) (SME Annual Report 2015/16). In terms of figures, SMEs are vital for they pillar the Malaysia's economy. The SME Master Plan 2012/2020 was developed by the National SME Development Council to accelerate the Malaysian SMEs growth. The prime objectives were twofold; to change and further enhance SME through an active involvement in the SME Master Plan development and to set a higher target for SME Gross Domestic Product (GDP); from 31 per cent (2010) to 41 percent (2020). These objectives are still relevant to this date as the target have yet to be met because of the ongoing Covid-19 outbreak and further collapse of the economy due to movement control order and restriction to mostly SME business activities. Hence, taking this as a departure point, SMEs especially oil and gas service providers must be proactive to gear towards long-term sustainability and growth and review their performance continually (SME Corp, 2021).

The COVID-19 pandemic significantly impacted Malaysia's SME service providers in the oil and gas industry, leading to a decline in their value-added contribution to the economy. However, MSMEs, including those in the oil and gas sector, rebounded in 2021, showing positive growth. SME Corp's reports highlight the challenges and recovery efforts of SMEs in Malaysia during and after the pandemic, emphasizing the importance of technological adoption and digital transformation for their resilience.

Before COVID-19 : SME service providers in the oil and gas industry, alongside other SMEs, contributed significantly to Malaysia's GDP. In 2019, many SMEs reported higher sales and profit margins compared to the previous year. The oil and gas sector, while not explicitly mentioned, was likely part of the broader SME ecosystem benefiting from economic growth.

During and after COVID-19 : The pandemic triggered disruptions in global trade and supply chains, impacting SME performance. Many SMEs faced revenue declines and temporary closures, with some reporting a significant decrease in income. The government implemented various aid and stimulus packages to support SMEs, including wage subsidies. While the pandemic caused significant challenges, MSMEs began to recover in 2021, with a positive value-added growth. The recovery was evident across various sectors, including manufacturing, construction, and wholesale & retail trade. SME Corp emphasizes the need for MSMEs to adapt to the "new normal," including embracing technology and digital transformation (SME Corp, 2022).

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Moving Forward SME Corp highlights the importance of government support, including financial assistance and capacity building programs, for SMEs to navigate the challenges and seize opportunities in the post-pandemic era. It also emphasizes the need for SMEs to be resilient, proactive, and adept in responding to future shocks and uncertainties. Digitalization, automation, and participation in the value chain of high-impact industries are identified as key areas for sustainable SME growth (SME Corp, 2024).

Figure 1.2 : The SME Deteriorating Performance (SME Corp, 2023)

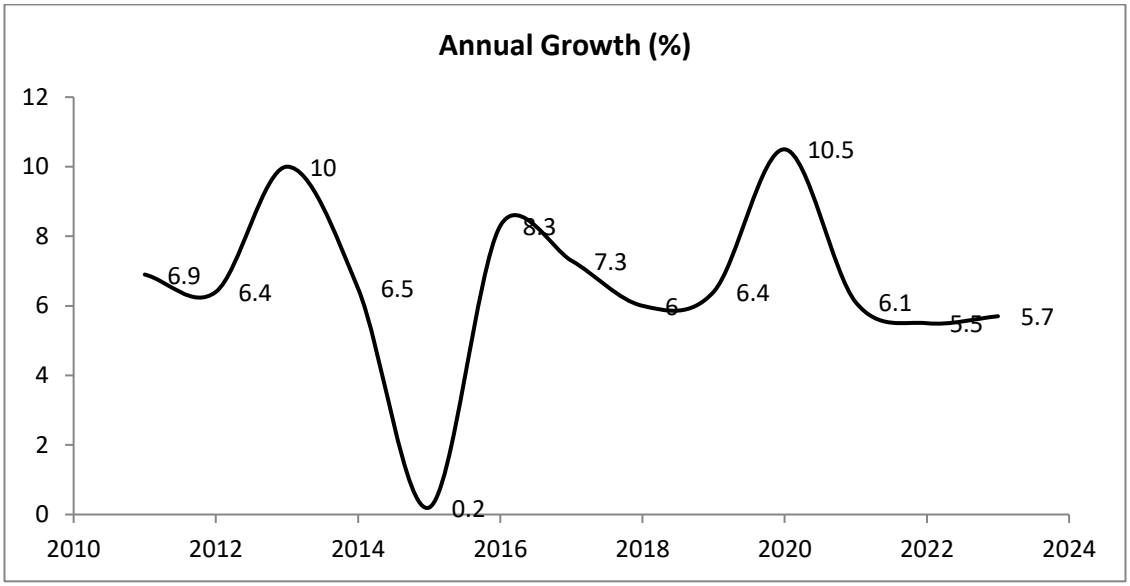

Figure 1.2 shows inconsistency and further deteriorating pattern of the SMEs' performance. Thus, this research was to examine relevant variables that can influence the SMEs' business performance focusing specifically on the SME service providers in the oil and gas industry, determining how its performance can contribute to Malaysian SMEs' businesses and economy (Kim, 2021). About 3,500 oil and gas companies are registered with Petronas and it has made countless call for alliance among these service providers including the SME firms since many years. Alliance refers to the players' reduction by merging them gradually in order to develop robust, high performing companies and the reality that Petronas is struggling with investments in the near future which will, in turn, affects the service providers and their performance enormously (Petronas, 2021).

By reviewing through past literature, it was apparent that information and data on oil and gas related activities especially with regards to the Malaysian SMEs service providers' business performance and their ability to survive in the midst of depreciating economy were scarce (Rahim & Liwan, 2012). The missing data might

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have yielded interesting input on the business performance sustainability issues within the Malaysia's oil and gas industry service providers (Yusuf, 2022).

Research on innovation within the SME context remains limited compared to studies focused on larger firms. Moreover, existing findings on the relationship between innovation and SME performance are often inconclusive, fragmented, and lack coherence. This highlights a significant research gap and underscores the need for further empirical investigation into how innovation contributes to the performance of SMEs. For instance, Becerra-Vicario et al. (2023) investigated Spanish SMEs and found that while innovation positively impacts performance, the relationship is further strengthened when Corporate Social Responsibility (CSR) practices are integrated. Their study emphasizes the mediating role of CSR in the innovation-performance linkage, suggesting that innovation alone may not fully account for performance improvements in SMEs (Becerra-Vicario, R., Ruiz-Palomo, D., León-Gómez, A., & Santos-Jaén, J. M., 2023).

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Similarly, Tran et al. (2023) examined Vietnamese SMEs and identified that different types of innovation—product, process, and distribution channel innovations—have varying effects on competitive advantage and performance. Notably, customer orientation was found to moderate these relationships, indicating that the effectiveness of innovation strategies may depend on how well they align with customer needs (Tran, D. P., Vo, T. N., & Thai, N. B. 2023).

These studies highlight that while innovation is generally beneficial for SME performance, the specific pathways and contextual factors influencing this relationship are complex and warrant further investigation. Therefore, more targeted research is needed to unravel these dynamics and provide actionable insights for SMEs aiming to

leverage innovation for performance enhancement (Oura, M. M., Zilber, S. N., & Lopes, E. L., 2021).

The relationship between market orientation (MO) and small and medium-sized enterprise (SME) performance has been a focal point in strategic management research. While numerous studies have established a positive link between MO and performance, several research gaps persist, particularly concerning SMEs in developing countries like Malaysia (Nasrah et al., 2023).

Recent studies affirm the continued importance of market orientation in driving SME performance; however, several methodological limitations have been identified that may compromise the reliability of these findings. For example, reliance on sampling frames derived from online SME directories can be problematic, as many SMEs are not formally registered with SME Corp Malaysia (Indarwati et al., 2024). Furthermore, the persistently low response rates from Malaysian SMEs in empirical surveys hinder the robustness and generalizability of research outcomes (Lestari & Supriyadi, 2023).

Furthermore, other study investigates how market orientation influence SME performance, emphasizing the mediating role of other variables. The findings suggest that while market orientation alone may not directly impact performance, its effect becomes significant when mediated by product innovation. The findings indicate that while market orientation alone may not directly influence new product performance, its impact becomes significant when combined with other influential factors (Tajudin, M. M. 2022).

While the foundational link between market orientation and SME performance is well-established, significant research gaps remain. Addressing these gaps through targeted, longitudinal, and context-specific studies will provide a more comprehensive

understanding and enable SMEs, particularly in Malaysia, to develop more effective strategies to enhance performance. These issues highlight the need for more comprehensive and representative approaches in future studies on market orientation and SME performance (Ali et al., 2020).

Recent studies have highlighted the significant role of networking as a mediating variable in enhancing small and medium-sized enterprises (SMEs) performance. While existing research predominantly focuses on inter-firm networking, there is a growing recognition of the need to explore other dimensions of firm-level networking. These include intra-firm networks, digital networking platforms, and informal social networks, which may also substantially influence SME outcomes (Duke, J. E., & Edu, A. S., 2023).

For instance, a study by Sagita et al. (2025) examined the impact of networking on business performance among Malaysian SMEs. The findings indicated that while innovation and proactivity did not significantly affect performance, attributes such as risk-taking and competitive aggressiveness did. This underscores the importance of fostering a culture that encourages autonomy and risk-taking behaviors, which could be facilitated through diverse networking avenues (Sagita, A., Yusof, M. S. M., Budiharjo, R., Nsereko, I., & Suhimi, S., 2025).

Similarly, research by Karami and Tang (2021) explored the mediating role of networking capability and experiential learning in the relationship between entrepreneurial orientation and international performance of SMEs. The study found that these factors significantly mediate the relationship, highlighting the critical role of various networking forms in enhancing international performance (Karami & Tang, 2021).

Furthermore, Sarwar et al. (2021) investigated the impact of network capability on innovation capability in entrepreneurial SMEs, emphasizing the importance of strong network connections in fostering innovation. The study also highlighted the role of social capital in enhancing innovation capabilities, suggesting that diverse networking forms contribute to the development of innovation. These studies collectively suggest that while inter-firm networking remains crucial, other forms of networking also play significant roles in mediating the relationship between various firm-level actions and SME performance. Future research should aim to explore these diverse networking dimensions to provide a more comprehensive understanding of their impact on SME outcomes (Fatima, T., & Bilal, A. R., 2020).

1.3 Research Questions

1. Is there significant relationship between innovation and SME Business Performance?
2. Is there significant relationship between market orientation and SME Business Performance?
3. Is there significant relationship between innovation and networking?
4. Is there significant relationship between market orientation and networking?
5. Does networking mediate the relationship between innovation and SME business performance?
6. Does networking mediate the relationship between market orientation and SME business performance?

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1.4 Research Objectives

The aims of this study were to investigate the innovation and SME business performance relationship and the market orientation and SME business performance of service providers in the Malaysian oil and gas service sectors and investigate the mediating effects of networking on these proposed relationships.

Specifically, the objectives of this study were :

1. To examine the significant relationship between innovation and SME business performance.
2. To examine the significant relationship between market orientation and SME business performance.
3. To examine the significant relationship between innovation and networking.
4. To examine the significant relationship between market orientation and networking.
5. To examine the mediating effect of networking on the relationship between innovation and business performance of the service providers.
6. To examine the mediating effect of networking on the relationship between market orientation and business performance of the SME service providers.

This study primarily aimed to examine the relationships between innovation, market orientation, and SME business performance, with a specific focus on the mediating role of networking. It sought to explore how these variables interact and the extent to which they influence one another within the context of SME service providers in Malaysia's oil and gas industry. By addressing practical gaps and theoretical limitations, the study intended to enhance understanding of the constraints faced by

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SMEs in sustaining performance, while offering insights grounded in the proposed conceptual framework (Ramasamy, 2024).

1.5 Significance of Study

Historically, SMEs were not viewed as key drivers of economic development and social progress. However, they are now recognized as vital engines of growth, contributing to job creation and economic dynamism. This study is significant for several reasons (Musa & Siti Haryani, 2021).

First, it will explore the various factors influencing SME business performance in Malaysia. By understanding the interactions and strategies at play, effective approaches can be developed to enhance organizational performance and provide SMEs with a competitive edge in today's economy (Zakaria, M. F. B., Sabri, N. S. A., & Abd Halim, 2025).

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Second, policy-makers, other government agencies and SME owner-managers will benefit from this study where their exposure to the present SMEs issues will help them in competing and surviving in the business realms (Ab Wahab, N. Y., Musa, R., & Siti Haryani, 2021).

Third, the findings of this study will contribute to the development of theories and improvements in models related to market orientation, aimed at enhancing organizational performance. To date, existing models on market orientation have not been fully validated in the literature, and there is a lack of empirical evidence to support their application. Recent studies have highlighted the positive impact of market orientation on business performance, emphasizing the need for further

exploration and validation of these models in the Malaysian context (Nasrah, Husin, & Salleh, 2023; Mokhtar & Yusoff, 2023).

Fourth, this study provides a platform for further short-term and longitudinal research focused on enhancing the performance of Malaysian SMEs. Given the heterogeneous nature of SMEs, the results may not be broadly generalized across all sectors. Additionally, the government's provision of funds and grants for SME development offers valuable opportunities for researchers to assess SMEs' contributions to the economy and explore strategies for sustaining business operations. The findings will also help relevant stakeholders develop more effective strategies for SMEs, particularly those in the oil and gas sector, to remain competitive **(**Mokhtar, S. S. M., & Yusoff, 2023).

A Micro SME in Malaysia is the smallest category within the SME classification, with an annual sales turnover of less than RM 300,000 and fewer than 5 full-time employees. These businesses are often sole proprietorships or family-run, with limited access to capital and technology, typically operating in local or niche markets. They benefit from government support programs such as financing and training. A Small SME has an annual sales turnover between RM 300,000 and RM 3 million and employs 5 to fewer than 30 full-time staff. These businesses are more structured, with formal premises and accounting systems, and serve local and regional markets. Many seek growth through innovation, partnerships, and digital initiatives. A Medium SME has an annual sales turnover between RM 3 million and RM 20 million, employing between 30 and 75 full-time staff. These businesses are professionally managed with formal departments and higher investment capacity, competing in national or international markets. With the right support, they have the potential to scale into large enterprises (SME Corp, 2025).

1.6 Definition of Terms

Business performance is the results of assessment of subjective self-reporting through structured questionnaire where organizations must evaluate their financial and market performances against key rivals. Assessments are based on the gross profit, return on asset (ROA), growth in sales, profitability, and overall perceived business success - Kohli & Jaworski. SMEs often assess their business performance using both financial and non-financial indicators, frequently through structured questionnaires that rely on subjective self-reporting. This approach enables SMEs to evaluate their performance relative to key competitors across various dimensions (Li, C., & Shafait, M., 2025).

Innovation is an approach that contributes significantly to performance (Niera, Lindman & Fernandez, 2009; Oke, Burke & Myers, 2007). Innovation is a company output to generate competitiveness and enhance performance (Darroch & McNaughton, 2002; Johne & Davies, 2000). Besides, studies on SMEs innovation are scarce in comparison to larger establishments (Cogliano & Spina, 2002; Mosey, 2005; Oke, Burke & Myers, 2007). Most results on the innovation and performance on SME links are not conclusive, fragmented and not collective (Dobbs & Hamilton, 2007; Li & Atuahene-Gima, 2001; Shepherd & Wiklund, 2009). Hence, it is high time to analyse the link between SMEs innovation and performance (Hafeez, M. H., Shariff, M. N. M., & Lazim, H. M., 2021).

Market orientation refers to a culture that embodies an organization that forms commendably essential behaviours leading toward superior value creation for customers, securing business constant superior performance. Superior value for customers are formed based on three elements of behaviour; orientation of competitor,

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orientation of customer and coordination of inter functional (Bamfo, B. A., & Kraa, J. J., 2024).

Numerous studies have emphasized the critical role of networking for SMEs, with early foundational contributions by Cova et al. (1994), Tikkanen (1998), and Partanen et al. (2008). Carree and Thurik (1998) further noted the increasing importance of networking in the evolving business environment. More recently, networking has been recognized as a key mediating factor linking innovation and market orientation to business performance. Han et al. (1998) assessed this relationship within the context of SMEs, specifically in relation to new product development and service performance (Sasono, E., Farida, N., & Soesanto, H., 2023).

SMEs : Referring to organizations with less than RM20 millions of sales turnover or less than 75 number of full-time staff (SME Corporation Malaysia - SME Definition, 2025).

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1.7 Scope and Limitations of Study

Malaysian SMEs are classified as micro, small, and medium enterprises based on sales turnover and number of employees (SME Corp, 2024). However, this study focuses specifically on SMEs within the oil and gas sector, as micro enterprises generally lack branding capabilities, marketing expertise, and the necessary resources to implement innovation strategies due to their informal organizational structure. In addition, surveys on the perceptions of owners/managers' are executed because they are the right individuals to provide insights for the study (Rubiyanti & Silvianita, 2024).

This study focused mainly on the central region of Peninsular Malaysia with concentration on the East Coast and Klang Valley service providers with the targeted

respondents about 200 population. The data was obtained from SME Corporation website and the database was limited to this information only because Petronas and other agencies did not reply to the formal request of list of SME service providers due to confidentiality matters.

Furthermore, this study was primarily designed using four main variables namely Innovation, Market Orientation, Networking and SME Business Performance. Therefore, the findings and discussion were only limited on effects and contributions of these factors only. In future it is recommended that other variables are proposed to test and analyse the outcomes of different constructs for the same oil and gas industry.

1.8 Organization of The Thesis

This thesis was organised into five main chapters. The first chapter was the introduction of the study, which consists of background of the study, problem statement, research questions, research objectives, scope, significance of the study and operational definitions.

Chapter 2 discussed the literature review, which addresses the definition, importance, and overview of SMEs service providers in the oil and gas industry in Malaysia. The constructs, which are innovation, market orientation, networking and business performance, are explained with the support of relevant literatures. In addition, the resource-based view theory is also elaborated. This is to gain better understanding on the overall framework in order to examine the relationship of variables.

Chapter 3 detailed out the research design and methodology. It consisted of questionnaire design, validity and reliability of instruments, measurement of variables,

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unit of analysis, population and sampling method, data collection method, tools and technique of analysis. This chapter also introduces the research framework and hypotheses development.

The analysis, results and discussion of findings were briefed in Chapter 4. This was followed by Chapter 5, which concluded the study by addressing the limitation of this study, contributions and recommendations for upcoming research.

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CHAPTER TWO

LITERATURE REVIEW

2.1 Introduction

This chapter reviews selected past studies formulates hypotheses for the study and support a theoretical framework for the model development. The chapter starts with the definition of SMEs in Malaysia, and further explains how the SMEs in Malaysia developed. The next part of the chapter discusses review of literature on the concepts and variables associated with innovation, orientation of market, networking, performance of organizations and the underpinning theory to support the research.

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2.2 Small and Medium Enterprises In Malaysia (SME)

2.2.1 Definition

SME does not have any universal definition. Definition varies from one country to another. The most common measure of the size of an enterprise or firm is the number of employees. However, a firm may be regarded as small in some countries but may not be categorized as such in other countries (Mahmood, 2001). This study adopts a definition employed by the Small and Medium Industries Development Corporation (SMIDEC), presently known as SME Corporation Malaysia which is a part of the Ministry of International Trade and Industry (MITI). MITI is a one stop center that coordinates the formulation of SME policy and measurement of its development programme.

As of 2025, the official definition of Small and Medium Enterprises (SMEs) in Malaysia remains consistent with the criteria established by SME Corporation Malaysia (SME Corp) in 2013. These definitions are based on two primary criteria: annual sales turnover and the number of full-time employees. The classification varies slightly between the manufacturing sector and the services and other sectors (SME Corp, 2025).

A Micro SME in Malaysia represents the smallest category within the SME classification, based on annual sales turnover and the number of full-time employees, with slight variations depending on the sector. In the services and other sectors, a Micro SME has an annual sales turnover of less than RM 300,000 and employs fewer than 5 full-time staff. These businesses are typically sole proprietorships or family-run, with limited access to capital, technology, and skilled labor. They often operate in local or niche markets and make up the majority of business establishments in Malaysia. Micro SMEs also benefit from various government support programs, such as financing, training, and market access assistance, provided by SME Corp and other relevant agencies.

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Meanwhile, a Small SME in the services and other sectors is defined as a business with an annual sales turnover between RM 300,000 and less than RM 3 million, employing 5 to fewer than 30 full-time staff. These enterprises are generally more structured than micro businesses, often operating with formal premises, staffing, and accounting systems. They typically make moderate capital investments, have some access to financing, and serve both local and regional markets. Many pursue growth through innovation, partnerships, or digital initiatives, and play a vital role in employment and supply chain development in both urban and rural areas.

Furthermore, a Medium SME (Medium Enterprise) in Malaysia is the largest category within the official Small and Medium Enterprise classification, representing businesses that are more established with greater resources. These enterprises may operate regionally or internationally and are defined by their annual sales turnover and the number of full-time employees, with slight variations depending on the sector. In the services and other sectors, a Medium SME has an annual sales turnover ranging from RM 3 million to not exceeding RM 20 million, and employs between 30 and 75 full-time staff. Typically, these businesses are well-structured and professionally managed, with formal departments such as HR, Finance, and Marketing. Medium SMEs have higher productivity and investment capacity compared to micro and small enterprises, and they often compete in national or international markets. With the right support, they have the potential to scale up into large enterprises (SME Corp, 2025).

Figure 2.1: SMEs New Definition in Malaysia (Source : SME Corp, 2025)

Manufacturing		Services and Other Sectors
Sales Turnover : RM15 mil to RM50 mil or Employees : From 75 to 200	Medium	Sales Turnover : RM3 mil to RM20 mil or Employees : From 30 to 75
Sales Turnover : RM300k to RM15 mil or Employees : From 5 to 75	Small	Sales Turnover : RM300k to RM3 mil or Employees : From 5 to 30
Sales Turnover : Less than RM300k or Employees less than 5	Micro	Sales Turnover : Less than RM300k or Employees less than 5

2.2.2 The Development of SMEs in Malaysia

The development of Small and Medium Enterprises (SMEs) in Malaysia began gaining prominence in the late 1960s, as the country started recognizing their potential to

support economic diversification, reduce unemployment, and promote equitable growth. Over the decades, SMEs have evolved to become a critical component of Malaysia's economy, contributing significantly to GDP, employment, and exports. With strategic support from the government—including policies, funding, capacity-building programs, and institutional frameworks—SMEs have expanded across sectors such as manufacturing, services, and agriculture, driving innovation, entrepreneurship, and regional development (SME Corp, 2020).

With the implementation of the Third Malaysia Plan (1976–1980), SMEs were formally recognized as a strategic platform for nurturing future entrepreneurs and addressing economic imbalances among racial groups. Their significance was further reinforced during the Fourth Malaysia Plan (1981–1985), where SMEs were seen as vital to mobilizing resources, developing entrepreneurship, enhancing savings, and strengthening inter-industry linkages. This period marked a pivotal institutional development with the establishment of the Small Enterprise Division (SED) under the Ministry of International Trade and Industry (MITI). Additionally, the Ministry of National and Rural Development established the Division of Small-Scale Industry, reflecting a growing governmental commitment to support and formalize the SME sector (Rahman, 2022).

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The Third Industrial Master Plan (IMP3) which began in 2006 reflected the high level of commitment in promoting SMEs in the country (MITI, 2005). In the Ninth Malaysian Plan (2006-2010), the government's continuous support was given to develop SMEs through the fund of RM2.1 billion for SME development compared with the RM1.5 billion fund allocated under the Eight Malaysian Plan. A sum of RM463 million was allotted for enhancing technology content and knowledge, venturing in capital financing for start-up companies, financing vital segments and

new areas like ICT and biotechnology services industry and offering programs tailored toward enhancing skills on entrepreneurship and know-how. A further RM927.5 million was allocated for sites of industry, RM833 million was sanctioned for business properties and Techno-Fund covered RM1.5 billion (MITI, 2005). This commitment shows the government's recognition to SMEs' on going significance and contribution to the nation's economic development to this date (SME, 2021).

2.2.3 The Development and Problems in Service Sector

SMEs' service sector is obviously dominant in domestic economic landscape. Figure 2.1 illustrates the SME concentration based on SME Corp database. Focusing on the key economic sectors, the services sector has consistently accounted for more than 80% of all MSMEs throughout the period. For the latest 2021 MSMEs profile, services sector constituted 83.8%, amounting to 1,028,403 firms. The construction sector remained to be the second largest contributor at 8.0% (98,274 firms). Meanwhile, about 5.8% of MSMEs (71,612 firms) were involved in the manufacturing sector, followed by 1.9% (23,633 firms) in the agriculture sector, with the remaining 0.4% (4,572 firms) in the mining & quarrying sector (SME Corp, 2021).

Figure 2.2 : SME Concentration, SME Corp 2021

Services	Construction	Manufacturing	Agriculture	Mining & Quarrying
83.8%	8%	5.8%	1.9%	0.4%

The New Economic Model is devised by the Government where a framework is drawn to push Malaysia to be in high-income economic status through creativity, innovation, and high value sources of expansion. Being in services sector reflects the SMEs'

capacity to contribute to the GDP share eventually. Hence, the roles of SMEs are crucial in propelling and sustaining the economy.

The services sector will continue to drive the economic expansion. The services sector assumes an increasing share of GDP as the economy matures, as is evident in the case of developed countries. As Malaysia moves towards becoming a developed nation, greater emphasis is placed on the development of the services sector to serve as the main engine of growth to propel and sustain the economy. Going forward, do look out for the New Services Sector Blueprint that will chart the next phase of growth for the services sector for the period of 2021-2025. Currently, the government is in the midst of finalising the blueprint. MIDA continues to focus on promoting the services sub-sectors by encouraging investments in relatively high value-added activities that are marketable, have a high-knowledge intensity and the potential to generate high-income jobs. Expect the overall services sector to move up the value chain and, thereby providing strong linkages to other main economic sectors. Given its importance to the nation's coffers, the services sector also plays a prominent role in the country's goal to achieve sustainable growth with enhanced prosperity and ironed-out socioeconomic disparities (MIDA, 2021).

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2.3 SME Service Providers In The Oil and Gas Industry

SME service providers in the oil and gas industry must be supported and encouraged to enhance their contribution to the Malaysian economy. In response, national-level policies and programs have been introduced to strengthen technological capabilities and improve SME competitiveness. Entrepreneurial initiatives, particularly those focused on research and development (R&D), aim to train, nurture, and support

entrepreneurs in product development. However, the success of SMEs service providers in the oil and gas industry depends on several critical factors, including competitively positioned goods and services, a strong business framework, efficient distribution networks, proactive management, accurate market forecasting, and solid financial backing (Bank Negara, 2021).

For SMEs service providers in the oil and gas industry to succeed, their services must be both profitable and sustainable, with a focus on retaining existing customers while attracting new ones. As a result, meeting customer requirements becomes a top priority. This awareness of customer importance enhances SMEs' understanding of marketing concepts, market orientation, and innovative behaviour. Such knowledge is essential for designing more effective policies and programs that support improved marketability and innovation, ultimately strengthening the SMEs' competitive advantage (World Bank, 2021).

The Malaysian government is aware of the importance of SMEs service providers especially in the oil and gas sector and has made great efforts and investments in SME development. The government is creating entrepreneur-ship programs and facilities to support the overall economic growth and sustainability of SMEs. Evidently, since the first Malaysia Plan 1966–1970, numerous efforts and initiatives have been introduced in terms of entrepreneurial facilities and support programs that have been channelled to various service providers (Rizal & Sahimi, 2022).

Additionally, the performance of SMEs service providers in Malaysia's oil and gas services and equipment (OGSE) sector presents a mixed picture, characterized by both challenges and growth opportunities (Petronas, 2023). SMEs play a critical role in Malaysia's Oil and Gas Services and Equipment (OGSE) sector, comprising

approximately 85% of core companies and 91.6% of all OGSE establishments. In 2023, these enterprises contributed RM21.2 billion in gross output, representing 26.7% of the sector's total. Despite their importance, SMEs face persistent challenges including limited access to capital, intense competition from larger firms, talent shortages, and slow technological adoption. Sustainability uptake remains low, with only 25% adopting environmental, social, and governance (ESG) practices, and 82% unaware of available ESG support programs. Regional disparities are also evident; in Sabah, over 70% of OGSE companies remain inactive due to capacity constraints and difficulties meeting tender requirements. Nevertheless, the sector is poised for growth, with projections estimating a GDP contribution of RM40–50 billion by 2030—up from RM20 billion in 2020 driven by initiatives under the National OGSE Industry Blueprint 2021–2030 (OGSE, 2021).

Moreover, recent studies on SME service providers in Malaysia's oil and gas sector reveal several key insights. The Centre for Entrepreneur Development and Research (CEDAR), in collaboration with six Malaysian universities, conducted an in-depth study addressing market dynamics, challenges, and success factors for SMEs, providing valuable guidance for policy and financing strategies. A 2022 study in Sustainability explores how SMEs leverage digital platforms to co-create value with service providers, fostering international market entry through enhanced network capital and digital tools. Research from the ICAME 2019 conference emphasizes the importance of leadership and strategic awareness for Malaysian oil and gas SMEs to navigate market volatility and globalization pressures. Universiti Teknologi MARA has developed a sustainable transformation framework to help oil and gas SMEs optimize strategy, structure, technology, culture, and rewards for better performance and sustainability. Additionally, SME Bank's report discusses global oil demand

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trends and PETRONAS's plans to boost domestic spending, providing valuable insights into the opportunities and challenges faced by local oil and gas service providers (Baharudin, 2022).

This study was to analyse the of SME service providers performance for oil and gas industry in Malaysia using the proposed research framework outlined in the end of Chapter Two and all variables as presented in this chapter.

2.4 Business Performance

2.4.1 Definition

Business performance is a measure of the achievement generated by business activities and profitable for the business (Kristinae et al., 2019). The profitability obtained from comprehensive resource-based activities must be supported by knowledge as obtained from a knowledge-based perspective (Bouwman et al., 2019). More effective and efficient the resources in the organization will have an impact on business performance. The required business performance achievement is also market orientation information to see what consumer needs (Christa & Kristinae, 2021).

Business performance is a company's ability to adapt to the business environment, accompanied by changes in the market environment that include customers, competitors and other power forces that can alter the way business works. A good strategy depends on management's ability to create harmony between the environment and internal company (Zainudin, Sugiono and Sufian, 2016) so the ability to adapt is important (Rekarti & Doktoralina, 2017).

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Business performance shows the result of an organization (Saunila et al., 2014). Measuring business performance enables companies to focus on areas that need to be improved by assessing how well the work is done in terms of cost, quality, quantity and time (Skrinjar et al., 2008). According to Hult et al. (2004), business performance shows the achievement of organizational goals. Business performance is measured by using subjective measurements based on staff and manager perceptions. Operationally, business performance is measured by indicators of sales volume, profitability, and market share (Najib and Kiminami, 2011). The level of innovation contributes to business performance and helps companies to survive in markets (Wahyuni & Sara, 2019).

2.4.2 Business Performance Importance

Business performance is an indicator that is usually used to measure the success of a company in achieving its goals (Ho, 2011), or the company's ability to meet customer satisfaction and win the market against competitors through the products and services offered. Business performance is generally measured using indicators of financial performance and market performance (Yasa, Giantari & Samarwa, 2020).

Building appropriate and measurable business performance constructs has been one of the most challenging tasks confronting academic researchers (Nawanir et al., 2013; Venkatraman and Ramanujam, 1986; Miller et al., 2013; Wall et al., 2004). Literature provides varying dimensions on the measurements of business performance (March and Sutton, 1997; Richard et al., 2009; Silvestro, 2014), including both subjective and objective measures. However, subjective measures of business performance are more accepted by business management scholars (Salhieh & Towers, 2018).

In today's economic environment, measuring business performance is an important concern for academics and practicing managers. It is important to consider aspects of differentiation that may potentially confuse subjective (also described as perceptual performance) and objective measures (Nasip et al., 2017). Performance can be defined as the result of job completion that represents the level of achievement of each job and the fulfillment of expectations, policies, or requirements for the official role of the organization (Wardani & Eliyana, 2020).

Business performance can also be interpreted as productivity which states the quantity, quality and contribution of work, so that when productivity is high, the overall performance in the organization will also be high. Meanwhile, business performance can be defined as a company's potential in adapting to the business environment, along with changes in the market environment consisting of customers, competitors and other forces that can change the way business works (Rekarti & Doktoralina, 2017). Therefore, proper management as well as a better marketing strategy, and good financial planning are required for good business performance (Yani, Eliyanah & Hamidah, 2020).

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If organisations are forecasting, strategising and re-organizing , business performance is a crucial element to take into account (Bourne et al., 2013; Dess & Robinson, 1984) for organizations endurance and success (Richard et al., 2009). Organizations in advanced nations focus more on collaboration, empowerment, composure, distribution of learning and management of performance efficiency (Ford & Fotler, 1995). Past research measure performance though multidimensional measurement. Farrell and Oczkowski (2002) and Narver and Slater (1990) stated performance as means of retaining customers, accomplishment of new goods, expansion of sales, return on investment and general performance. Likewise, Roger et al. (2002) also stated

performance as a return on investment function, assets return, sales return and general performance. Performance also refers to volume of sales, share of market and profitability (Davenport, & Richard, 2015).

Firm business performance studies have used various measures for performance. Performance is a multi-dimensional construct instead of a single performance item (Dess & Robinson, 1984), highlighting that measuring performance through a composite measure would show firm improvements more precisely in contrast with a single quantitative one. Haber and Reichel (2005) asserted that both organization performance and achievement can be determined using objective and subjective means. Objective is to a comparison of performance of organization with hard measures of finance whereas subjective refers to more private issues. In the SMEs, operators seem reluctant to share financial data or accurate objective measures to strangers.

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2.4.3 SME Business Performance

SME sector performance is sine qua non to the performance of the nation. The vast majority of firms worldwide are SMEs, and they serve as a breeding ground for entrepreneurs and a provider of solutions to address the problems of unemployment in all consuming labours and promoting marketing growth. The importance of SMEs in the evolution of economic, reduction in poverty, increase in employment, output, innovation in technology and lifting up in social position and standard is globally proven and acknowledged in emerging as well as in developed economies. Small and Medium Scale Enterprises have been acknowledged to have a prodigious potential for sustainable Development. The surplus of the workforce employees from bigger firms

was able to be reinstated back to the employment, mainly through the growth of SMEs (Eniola & Ektebang, 2015).

Furthermore, objective SMEs financial database is not in public domain, making it difficult to verify any reported figures accuracy (Covin & Slevin, 1989). Hence, subjective perceptual measure can be utilized instead. The term 'organization performance' refers to self-reported measures of owner/managers perceptions on market share improvements, profitability, sales expansion, return on performance and general performance. Subjective, self-reported performance measures have a high correlation with objective firm performance measures (Dess & Robinson, 84; Robinson & Pearce, 1988). Studies that employ the subjective assessment for performance show that the approach generates valuable findings (Curkovic, Veickery & Droge, 2000; Tan, Lyman & Wisner, 2002;). The measurement for performance includes general success perception, profitability, sales expansion and assets return (Majid, 2015).

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SMEs are commonly defined as reactive, flexible and risky organisations (Terziovski, 2010), but are also generally more innovative than their larger competitors (Gupta et al., 2013). This reflects the widespread assumption that entrepreneurs and managers of small businesses need to innovate to successfully compete with larger established firms (Rosenbusch et al., 2011). Recent studies reveal positive effects of innovation activities on a firm's business performance (Hervas-Oliver et al., 2014; Nemlioglu and Mallick, 2017; Sok et al., 2016). Most have focused on specific SME dimensions of business performance, mainly involving financial performance variables such assales, financial profit and production costs or productivity (Nemlioglu and Mallick, 2017).

SME business performance is a company's ability to adapt to the business environment, accompanied by changes in the market environment that include customers, competitors and other power forces that can alter the way business works. A good strategy depends on management's ability to create harmony between the environment and internal company so the ability to adapt is important The performance of firms can be measured in various ways; the most frequently suggested approaches include sales, employment, assets, market shares, physical outputs, and profits (Zainudin, Sugiono and Sufian, 2016).

As there is no consensus on the appropriate measures of SME performance, researchers are free to choose one best indicator, create a multiple indicator index, or use alternative measures separately. Due to this "loophole", most researchers choose indicators for which it is easy to gather information, rather than taking important variables into consideration (Shepherd and Wiklund, 2009). In addition, many researchers do not explain why they have chosen a given indicator as opposed to the others (Birley and Westhead, 1994; Shepherd and Wiklund, 2009). This tendency has partly contributed to the mixed results in small firm growth studies (Delmar and Wiklund, 2008). In this regard, Shepherd and Wiklund (2009) substantially contributed to the literature by significantly advancing understanding of firm performance. Their study found sales performance to be the most popular indicator, followed by employment, assets, and profit. This finding is further supported by the review conducted by Achtenhagen et al. (2010), who found sales performance to be a popular indicator used to measure SME performance. Most researchers have, indeed, concluded that sales SME performance in Tanzania performance is a most suitable performance measure than others (Shepherd and Wiklund, 2009; Shibia and Barako, 2017).

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SME sales performance has great relevance to many policy-makers, since firm growth has been regarded as important for income generation. Besides policy-makers, entrepreneurs themselves tend to measure growth through firm sales (Barkham and Gudgin, 2002; Asah et al., 2015). Furthermore, it is suggested that different measurement periods do influence the research findings, as performance generally depends on both short- and long-term changes (Delmar, 1997). This means that the factors responsible for short-term performance do not always determine long-term performance. Delmar (1997) and Jansen (2009) indicated the five-year period to be the most common approach, followed by periods of one year and three years. Their findings also revealed that while most studies indicate the measurement period, the authors typically failed to explain why they chose this specific measurement period. Empirically, there has been little investigation of the choice of measurement period and its effects on the outcome of analysis. The measurement used for this research were gross profit before tax, return of asset, profitably, growth and overall business success as they were commonly used in scholarly research and found to be empirically reliable (Isaga, 2018).

2.5 Innovation

2.5.1 Definition

Kao defines innovation as the individuals, company or entire nation's ability to form their preferred future. Hence, a novelty changes to innovation if it influences the future generation positively. The primary aim for innovation is process. Process refers to significantly improved production or delivery method implementation. Process change refers to implementation of new techniques, equipment or software. Innovation also

comprises two types: incremental or radical. Incremental process innovation refers to continuous optimised implementation to the remaining process of the production technology at the origin. Radical innovation arises when a process is completely changed, switching off abruptly from an old process and utilizing newer process and technique for product improvement (Dai, 2022).

Past studies suggested innovation has to be encouraged in improving business performance which has a significant positive effect on maintaining local product business performance (Falahat et al., 2020). The form of innovation must be unique, rare and difficult so that business performance can be achieved from collective action as a resource management strategy developed through knowledge of needs. The business foundation needs innovation to improve performance based on knowledge relevant to market orientation. In order to improve the performance of the product business, it requires management capabilities and expertise and resources to acquire and maintain business (Christa & Kristinae, 2021).

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Innovation also refers to a novel or significantly enhanced output implementation (e.g. properties of outputs), procedures (e.g. methods of distribution), approach of marketing (e.g. new output packaging) or organisational approach (e.g. workplace organisation) in practices of organizations, relations of workplace. Furthermore, innovation is well distributed in the market or executed to influence the economy which goes past invention. An innovation must also possess a novelty status for organizations (be it self-creation or adoption) and is novel to the marketplace or global realms (Klewitz & Hansen, 2014).

Being innovative is required for organizations as to compete and sustain in the dynamic market. Sustainability-driven innovation practices are essential ways for

organizations. Organizations need to construct, restructure, acclimatize, and delegate ecologically sound technologies. Eventually, sources of strategic change come from environmental issues, ecological features and eco-innovation strategies like eco-production, evaluation of life cycle and design of ecology. Consequently, sustainability oriented innovations research which broadly emphasize on environment, economic and social dimensions arise (Ferreira & Moutinho, 2020).

Huge and small organizations can participate in a business where SMEs innovates distinctively. More empirical studies need to be conducted in SME areas for SMEs comprise a big group globally, focus on issues of general sustainable development and create inclination for sustainability for their innovations. Sustainable development refers to development that fulfills today's requirements by accommodating the future generations' capabilities to fulfil their requirements. Innovation is a crucial element for sustainability (Wagner, 2021).

Finally, innovation processes involve complicated, vibrant and a result of collective, vibrant interaction and learning processes concerning various players. Private SMEs are a main factor – as new idea generators, as new venture entrepreneurs and collaborators for other local players. The present target for most SMEs is to create more values for innovation tasks. Hence, networks that merge various knowledge and properties are utilized for more valuable innovations. The central focus for SMEs studies is on the problems and obstacles that SMEs encounter toward generating market new solutions. Studies on obstacles on innovation are related mostly to studies on how to instil innovation at the levels of local, regional and state (Faurer & Barret, 2018).

2.5.2 Innovation Roles

Recently, several studies began analysing the influence of firm's absorptive capacity, i.e. the ability to identify, assimilate and commercially apply externally available information, using larger sets of empirical data and showing its significant importance for firm's innovation performance. On the other hand, employees with their creativity and innovativeness play an important role in idea creation as well as implementation of new and improved products and services ((Rangus & Slavec, 2017).

Innovations play a vital part in firm's competitive advantage and can substantially influence firm's performance (Salomo et al., 2007). Several studies to date have examined the influence of external and internal mechanisms, which impact firm's innovation performance, ranging from environmental factors, such as market and technological uncertainty (Sainio, 2012) to internal mechanisms, such as organizational structure, culture and leadership (Sattayaraksa & Boon-itt, 2016).

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A firm's innovation strategy plays an important role in shaping organizational priorities and supply chain wide actions (Quinn, 2000). The strategic, tactical, and operational alignment of inter-organizational actions leads to innovative services, which are commonly characterized as being novel, valuable, and frequently introduced (Kim et al., 2015). However, a managerial challenge organizations face is in developing supply chains capable of producing innovative services in an effective, efficient, and consistent manner (Roy et al., 2004). Melnyk et al. (2010) argued that acquiring sustainable competitiveness through innovation requires appropriate supply chain capabilities and practices (Jajja & Kannan, 2017).

Research on the potential of collaborative innovation in emerging markets is also limited. In 2013, emerging markets for the first time accounted for more than half of world GDP in terms of purchasing power parity (Economist, 2013). One estimate projects that by 2025 they will account for fifty percent of global consumption (Atsmon et al., 2012). These numbers suggest significant opportunity for both domestic and foreign producers seeking to establish dominant market positions. In particular, the expansion of supply chains to, and increasing innovation from emerging markets, have expanded the global innovation landscape in recent years (Lema et al., 2012). Emerging markets have different operating environments than developed markets, yet empirical evidence on innovation is based largely on developed market contexts (Lee et al., 2011, Story et al., 2015). Jean et al., (2014) in particular noted that evidence of the impact of supply chain relationships on innovation in emerging markets is limited (Ali Brah & Hassan, 2018).

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Innovation and networking systems are fundamental in establishing facilities with regard to scaffolding innovation. It highlighted the relationship between entrepreneurship and facilities and, claiming that in various cases of innovations, the facilities have to some extent established where the requirements and approaches for innovative facilitation are present, and entrepreneurs get the benefits by merely exploiting an opportunity. In short, a specific infrastructure quality might be a vital factor in the process of innovation (Dahesh & Tarbasa, 2020).

Innovation is to encourage progress, success and survival of a business and crucial for its competitive advantage which generates profit and progresses especially in the long run. Apart from financial aspects and resource depletion issue, attitude toward innovation is another hindrance faced by most SMEs. SMEs' owner-managers and related businesses play various functions where less chances exist to inculcate

innovation, leading toward poor commitment in management aspects and unsupported culture of innovation. Many organizations are resisting changes. Hence, cultivating an innovation of culture becomes the top agenda for SMEs' innovation success and family businesses (Anwar & Khan, 2018).

The merging of sustainability aspects and innovation can benefit businesses in several ways through cost reduction (e.g. management system of energy), risk reduction (e.g. improved features of safety), margin increase for sales and profit (e.g. premium organic brands acknowledgement), reputation elevation and brand value recognition, employers' lucrative offers (e.g. improved values between personal and company), and strategies of innovation capability. However, the most challenging aspect for organizations is overcoming sustainability-related issues. Consequently, various frameworks, principles and tools are designed to overcome environmental and social issues with regard to innovation. Yet, the tools are mostly devised for larger organizations' usage. SMEs, then, may need different tools or methods than those offered to large organizations to overcome their problems (Klewitz, Zeyen, & Hansen, 2012). However, studies on innovative and non-innovative small firms dissimilarities stated that innovative variations are derived from the internal rather than external traits of the businesses (Franca & Robert, 2017).

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2.5.3 The Organisation Ability

Organisations' innovativeness depends on two interrelated components: innovation and participation capability in networks of innovation. Innovation capability has drawn much interest. In spite of this wide range of interest, the innovation capability simple definition has yet to be formed. Earlier theoretical developments on absorptive

capacity trigger innovation capability. Innovation capability depends on organisations' flexibility in transforming knowledge into new outputs, systems and services that are beneficial for businesses and their stakeholders. Bougrain and Haudeville (2002) tended to relate capability of innovation to human resources and found that prior to profit margins knowledge immersion beyond a company, SMEs should build their internal strength through staff recruitments (Saunila, 2020).

Innovation capability comprises several distinguished aspects concerning organisations' internal characteristics . These aspects include (e.g., Cohen & Levinthal, 1990; Kianto, 2008):

1. capacity of absorptive and knowledge of external.
2. structures and culture of organisations.
3. communication and leadership.
4. creative individual and innovativeness.
5. learning culture of organisations (Konsti-Laakso, Pihkala, & Kraus, 2012).

2.5.4 The Role of External Factors Towards Innovation

Learning from other individuals (Al-Kwifi and Ahmed, 2013; Jones and Macpherson, 2006) are vital in the ability of a company to innovate. The ability to learn from others refers to collaborative value which is bounded by the company's comprehension of the things that other organizations are likely to convey. This knowledge-sharing together with its creativity might be the most fundamental innovation resource (Afuah ,1998; Wu et al., 2012). Geringer (1991) asserted that competency and complementarity assessments are prior to company's quest for prospective partners. Finding a good collaborator ensures synergies in operation that generate increased revenues and share

of market. These concerted efforts comprise orientation of technology, market, or management, resulting in knowledge recombination that is fundamental for innovation (Louis Troilo, 2014).

Gearing toward sustainable innovation efforts, the literature acknowledges the importance for businesses to adopt an innovative culture (Hult et al., 2004; Menor and Roth, 2007). This innovative culture, or innovativeness, determines if selected organisation is receptive toward innovations development or putting a resistance to innovativeness (Hurley and Hult, 1998). Consequently, the cultural inclination toward innovativeness signifies the level of companies' pro-activeness in discovering new prospects (Menguc and Auh, 2006). Development of innovative efforts which exceed customers' expectations will enable companies to gear toward competitive advantages (Hult et al., 2004). A crucial trait of innovative efforts is that external orientation is favored to produce innovation that includes market as a key foundation for innovative concepts (Deshpande ´ and Farley, 2004). In fact, despite efforts of development of internal traits to act on the market and/or give feedback to any transfomation before they happen lead to innovation, a true innovative business culture highlights that behaviour of market and its potential response must first be investigated prior to innovation (Leticia Santos-Vijande, González-Mieres, & Ángel López-Sánchez, 2013).

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2.5.5 The Concept of Organizational Innovation

The Oslo Manual for innovation stated that innovation comprises output, innovation of process (i.e. 'innovation of technology'), and softer innovation for example commercial and organisational. Hence, this conceptualisation allows the emphasis on

innovation by investing more in aspects of human resources (e.g. managers, designers, marketing experts, technicians, consultants) which provide richer data for the innovation process. Besides, innovations of product and organisation are analyzed to gain better insights on SMEs innovation performance. Studies are scarce on organizational innovation in business innovation literature which focuses more on technological innovations comprising (significant) new products and procedures (Damanpour and Aravind, 2012).

Additionally, in accordance to the Oslo manual, organisational innovation is new approaches being implemented in the organizations' business agendas. Those innovations can enhance organizations' work as well as ability to acquire and apply novel input and technologies. Organisational innovations are often established using processes of trial-and-error and hands-on-practices within innovation-oriented organizations. A source of organisational innovations might derive from creative problem-solving process that demands numerous partnerships and interactions between various people within organizations. Hence, the DUI drivers acquire from regular activities, interactive problem-solving and decentralized practical segregations, leading toward organisational innovations (Jensen et al., 2007). Organisational innovation refer to new approach of coordinating business activities. Formal R&D activities are not involved in this innovation type , dealing with the human resource coordination (Apanasovich, Alcalde Heras, & Parrilli, 2016).

Consequently, a question arises on the extent of innovativeness and dominant role of large organizations or SMEs in innovating and advancing technology. Solow (1956) stated that upon the saving rate rise, a temporary escalation in the capital accumulation rate and a fixed escalation in the output per capita level will occur. However, the rate output per capita does not elevate in the long run. A shocking result indicated that

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technological change contributes for 70%. economic growth in the U.S, verifying that economic development primary long-term driver is technological advancement. Two basic modes are acknowledged to accelerate technology; innovation and adoption. Each economy uses both modes yet, it harvests only little of the technologies used. Interestingly catch up, adoption and diffusion are not the hindrance factors for the needs of innovation to bridge the gap between the developing countries and developed ones (McArthur and Sachs, 2001; Warner, 2000). In terms of sources of innovation, Schumpeter (1934) recommended that new ideas and technologies can come from entrepreneurs and start-ups. However, Schumpeter (1942) asserted that activities of innovation elevates more than proportionally with organization sizes. (Noori, Bagheri Nasrabadi, Yazdi, & Babakhan, 2016)

Due to accelerating complex innovation processes, SMEs have escalated the business networks usage since the last decade. Throughout the years, the emphasis has been on organizations' abilities for innovations because of the technological change rapid rate, product life cycles time and the market globalisation. Although very large organizations boast with the amount of private R&D expenses, SMEs often produce disruptive innovations. Hence, the current discourse in terms of the fundamentals for innovations of SMEs is dynamic, business network and technovation is an essential platform for debating any issue (Chen, Tee & Chang, 2022).

Studies on innovation gap in SMEs' context are scarce in comparison with larger companies (Cogliano & Spina, 2002, Myers, 2007) and studies on relationship between innovation and performance of SME are not conclusive, incoherent and not collective. Hence, a study on SME innovation towards performance is highly recommended (Yusoff, 2016).

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2.6 Market Orientation

2.6.1 Definition and Concepts

Market orientation is information related to the market and changes in consumer behavior due to changes in the economy that affect consumer needs (Li et al., 2018). Ability to analyze markets to drive the innovations needed to sustain business, so that organizations can be sustainable and improve markets with a proactive market orientation (Al-Henzab et al., 2018).

While some scholars argue differently that market orientation is a form of knowledge and intelligence that is relevant to market and consumer needs that encourages organizations to make changes interactively and exclusively as a resource to more effectively drive organizational innovation in creating products based on consumer needs (Montiel et al., 2018). Proactive market orientation can become knowledge about changes made by business actors proactively to maintain business with consumer and competitor orientation as well as interface coordination to encourage innovation (Iyer et al., 2019; Udriyah et al., 2019).

However, the fluctuation of local services to compete competitively demands that business actors have the expertise and ability to create unique and different local services so that consumers are interested based on market orientation intelligence. Knowledge development in market orientation is related to resource effectiveness in a knowledge-based view to encourage innovation to improve business performance (Caputo et al., 2019; Iyer et al., 2019). Market orientation in practice can send information about consumer needs to create services that suit their needs. Business

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competition requires organizations to create market orientation strategies and advantages to increase sales, growth, and profits (Christa & Kristinae, 2021).

To some scholars market orientation refers to the implementation of concepts for marketing. The market orientation emphasizes the consumers' importance in the process of purchasing and selling (Houston, 1986). Kohli and Jaworski (1990) asserted that philosophical foundation of market orientation is a marketing concept and they describe market orientation as market intelligence moves by organizations regarding the present and upcoming needs, intelligent distribution across sectors and organisation-wide receptiveness toward it. They conceptualize market orientation as the generation, dissemination, and sharing of information, and the best response to changing market needs to achieve organizational goals and satisfy customer demands. For Narver and Slater (1990), market orientation is an organizational value that helps firms create significant value for their customers. Value creation that is hard to imitate can be a sustainable source of competitive advantage and will enable firms to outperform their less market-oriented competitors (Liao et al., 2011). For instance, market orientation is a source of competitive advantage for businesses, as it allows them to understand and respond to market demands effectively (Morgan et al., 2009). Research shows that market orientation increases competitive advantage and performance (Hult et al., 2005; Zhou et al., 2008). Wang et al. (2012) argue that market orientation can be a valuable firm strategy and provides a competitive advantage to respond to the competitive business environment (Jorge & Diaz, 2019).

Notably, the market orientation constructs comprise three primary stages; intelligence generation, intelligence dissemination, and responsiveness which are deemed fit to be customer focused with marketing coordinated orientation (Kohli and Jaworski, 1990). Marketing is deemed essential amid the organization's market orientation success

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through the departments collaboration. Marketing is typically close to consumers and their surroundings, hence, it functions as a connector between various units of an organization (Kara et al., 2005); it is a primary driver in an organization, acting as a platform for the firms' application of their market intelligence (Simpson and Taylor, 2002; Simpson et al., 2006). The results show that the samples (41 per cent) have good capabilities in managing marketing that categorizes them as market oriented (first cluster). Hence, verifying claims in literature that the SMEs are able to compete through market orientation (Kara et al., 2005).

2.6.2 Types of Market Orientation

Various marketing activities exist in literature for SMEs to adopt, for example, the primary marketing activities (Jobber, 2004 and Kotler, Armstrong, Sunders, & Wong, 2001) comprise strategizing and distributing marketing mixed activities. Those marketing activities are as follows:

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Planning marketing activities. Review activities of marketing and sales, manage category of product , fix goals of marketing and approaches (Fuller, 1994; Keeble, Bryson, & Wood, 1992; Lipparini & Sobrero, 1994).

Elevation of market knowledge. Gather data on rivals' activities and market's fluctuations (Gilmore & Carson, 1999; Yanagida, 1992).

Distribution Management . Search for and store new products, increase direct and indirect level of distribution of channels, draw new clients, manage channel control level, increase discipline level within the channel, increase the sales force usage and target new market sectors when necessary (Piercy & Cravens, 1995; Rylander, Strutton, & Pelton, 1997).

Management of decisions on product. Develop branded products, support local outputs, develop own output labels, rationalise range of product, make packaging decisions and manage new output development (Carson & Cromie, 1989; Gilmore & Carson, 1999; Stokes, 1995).

Management of promotion. Promote activities of sales and public relation, promote loyal customers and manage events involving media (Hogarth-Scott, 1996; Hogarth-Scott, Watson, & Wilson, 1996).

Management of pricing. Reduce margin pressure, meet or prevent competitive pricing and set policies (Brodie, Coviello, Brookes, & Little, 1997; Carson, Gilmore, O'Donnell, Cummins, & Grant, 1998).

Acquisition of marketing resources. Obtain and provide advice, promote collaborations, gain funding (Johannisson & Nilsson, 1989; Smeltzer & Fann, 1989).

Innovation of Marketing. Encourage new ideas, identify opportunities of marketing and confirm usefulness of new ideas which are included in SMEs innovation marketing (Cummins, Gilmore, O'Donnell, & Carson, 2000; Davis & Klassen, 1991).

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2.6.3 The Role of Market Orientation

The relationship between market orientation and business performance has been widely reported in literature, although few studies analyzed the intermediate effects of service quality in this relationship. For instance, service quality was found to have a positive intermediate effect on the relationship between market orientation and business performance in the retail stock brokerage firms in Taiwan (Chang and Chen, 1998) and a partial mediating effect in service companies, such as banks, finance

companies, insurance companies, private and public utility service organizations, higher learning institutions, consulting service companies and other related service organizations, of the northern region of Malaysia, Kedah, Perak, Penang and Perlis States (Carlos & Rodriguez, 2018).

Market-oriented perspectives support the statement that organizations that perform self-improvement in ways to cater the demands of the market and forecast the dynamic state can acquire above the average revenues and long- term competitive advantages (Day, 1994) Narver and Slater (1990) and Kohli and Jaworski (1990) provide two fundamental market orientation conceptualisations .The former considers market orientation as a marketing concept implementation whereas the latter considers it as an organizational culture. Kohli and Jaworski (1990) asserted that orientation of market as the market intelligence organisation-wide generation, intelligence distribution across units and organisation-wide reactions to it. The study also regards marketing concept as a philosophy of business and "market orientation" as a marketing concept actual execution. In addition, a market orientation emphasises on the individuals and departments within the organisations' efforts and projects. On the contrary, Narver and Slater (1990) refer to market orientation as culture of organizations that is able to create the required behaviors for buyers superior value creation and generate constant higher business performance. They are in agreement that the market orientation basis not only provides major competitive advantages but also integrates customers and competitors information along with the processes of businesses (Zehir, Köle, & Yıldız, 2015).

Importantly, a market orientation approach is to gear for SMEs' competitiveness (Gellynck et al., 2012; Seilov, 2015; Tsiotsou & Vlachopoulou, 2011; Zebal & Saber, 2014). Market orientation is the organisation-wide feedback to market intelligence

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(Liao et al., 2010) which leads to high degree of satisfaction of customers and business repetition (Sørensen, 2009). Nevertheless, learning orientation also complements market orientation where organisations can increase competitiveness through a various activities related to knowledge creation (Liao et al., 2010), stated that learning orientation is impacting organisational performance significantly (Grinstein, 2008) and might intensify the prior connection between marketing orientation and organisational performance (Ha, Lo, & Ramayah, 2017).

A market-oriented strategy can be applied by SMEs to exploit the market opportunities growth (Shapiro, 1988; Kohli and Jaworski, 1990). In fact, many studies demonstrate the market orientation and superior performance of business direct relationship (Simpson and Taylor, 2002; Kara et al., 2005; Spillan and Parnell, 2006). The term "market orientation" is used to indicate the concept of marketing implementation (Kohli and Jaworski, 1990). This term refers to business management philosophy which includes recognition of the customer orientation importance, revenue orientation, and marketing communication throughout the business units (McNamara, 1972). Companies that implement market orientation tend to produce a solid brand by fulfilling customers' demands. Abdul Ghani (2011) found positive relationship between market orientation and brand equity and recommended the conceptual studies between market orientation and brand equity to be applied from the SMEs' perspectives (Murjan[1] & Salleh[2], 2012).

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2.6.4 Factors Related to Market Orientation

Market orientation research on the services sector was scarce, and the developed literature was based on the manufacturing sector (Tajeddini, 2010). Nevertheless, in

recent years, several studies testing the relationship between market orientation and business performance on the service industry were developed (Carlos & Rodriguez, 2018).

Siguaw, Brown and Widing (1994) analysed the market orientation impact on the salespersons' attitudes and behaviours and found that market orientation affects the salespersons' attitudes and customer orientation. They also found that organizations that have high market orientations would have employees that implement high customer orientation, low work conflict, and high job satisfaction and organisational commitment. Pitt, Caruana and Berton (1996) analysed relationship between market orientation and performance in organizations located in the UK and Malta. Organisational performance is measured through subjective perceptual measures. The results yielded that market orientation affected performance in organizations positively for both countries. Moreover, Pelham and Wilson (1996) investigated the market orientation effect on performance of small businesses in through longitudinal data. Performance measures comprised product quality, new output success, growth/share, and profitability. The results yielded that product quality, new output success, and profitability except growth/share are positively related to market orientation (Katharina & Hofer, 2015).

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2.6.5 The Effects of Market Orientation

Market orientation and its relationship with business performance have sparked much scientific interest in strategy and marketing research, notably in terms of its definition, antecedents, consequences and possible mediation and moderation relationships (Filatotchev et al., 2016; Menguc and Auh, 2006; Riswanto et al., 2019; Zahra, 2008).

It has been shown that market orientation is positively and directly related to business performance (Correia, 2019).

Notwithstanding, the understanding of market orientation's contribution to business performance is still inconclusive, as some studies find it to be a non-significant relation (Caruana et al., 1999; Lonial et al., 2008). Recent research has concluded that the causal link between market orientation and performance is not direct (Murray et al., 2011; Taylor et al., 2008; Zahra, 2008). Consequently, the impact of the firm's market orientation on its growth remains unclear (Liao et al., 2011). Nevertheless, the literature supports indirect links between the firm's market orientation and business performance (Teixeira, 2019).

Narver and Slater (1990) analysed the impact of market orientation comprises primary determinants; competitor orientation, customer orientation, and inter functional coordination. The results showed a positive relationship between them as measured by return on investment. Besides, the results also showed that companies with the highest level of market orientation generate the highest revenues. Orientation of customer is understanding organizations' customers and their obligation to constantly provide superior values for their customers and it entails organizations to gather data and gain comprehension of each customers' value (Day & Wensley, 1988). It also promotes a constant, positive outlook in fulfilling customers' requirements. Hence, customer orientation is positively affecting organizational performance (Deshpande, Farley & Webster, 1993; Lukas & Ferrell, 2000).

Competitor orientation is an appropriate and a precise comprehension of an organization's present and prospective competitors. Organizations with competitor orientation measure themselves against target rivals (Day & Wensley, 1988), and

acknowledge their own merits and flaws (Han, Kim & Srivastava, 1998). Benchmarking and simulation are effective resources deployment (Vorhies & Morgan, 2005; Zott, 2003;). Hence, competitor orientation is positively affecting organizational performance.

Inter-functional coordination is all the organizations' resources coordination to form super value for clients. Narver and Slater (1990) insisted that to implement market orientation, organizations should convey input collected from customers and rivals , and set on approaches to provide superior values to customers (Jogaratnam, 2017).

Jaworski and Kohli (1993) examined market orientation in terms of its determinants and effects. Three sets of determinants used are: top management high commitment; low conflict within inter-departments; less formal and centralized organisational structure and two sets of effects: elevated organizational performance and elevated employees' organisational commitment. The results of the study showed that investments on efforts to increase firms' market orientation are beneficial for a better performance. Kohli, Jaworski and Kumar (1993 developed MARKOR scale using properties of sound psychometric. This MARKOR scale measures the levels that firms engage in executing activities of multi-departmental market intelligence generation, disseminating this intelligence vertically and horizontally and developing and implementing marketing programs based on the intelligence generation. The MARKOR instrument periodically reviews the impact of business environment changes like technology or regulation changes on customers, thus, enabling the measurement of market orientation and improving both market orientation and organizational performance (Le Meunier-FitzHugh & Le Meunier-FitzHugh, 2017).

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Deng and Dart (1994) designed a measurement scale to assess market orientation to overcome the inconsistency in the literature in terms of defining 'marketing concept' and 'market orientation'. The scale comprised 25 items and exhibited constructs of sound psychometric. The Deng and Dart scale were designed based on organizations structured programme that obtained responses or comments from their customers to understand them better, hence, improving the market orientation and business performance relationship. Additionally, managerial approach is also covered to better comprehend how to achieve and sustain market orientation. Furthermore, understanding and satisfying customers must take into account the superior business performance Two capabilities are also needed to improve organizations' market orientation; market sensing capability is referring to the organizations' capability to constantly trace changes in the market and to predict the response to market movements; a customer-linking capability comprising the skills, capabilities, and procedures required to obtain customer collaborative-inclined relationships so individual customer requirements are transparent to all purposes and extensive procedures are taken into account for reacting to them. Businesses must have superior skills in relation to the understanding, satisfying, and retaining of customers or they will never gain their full potential (Beneke, Blampied, Dewar, & Soriano, 2017).

Kumar, Subramaniam and Yauger conducted a study on market orientation and performance in health care industry. The authors used a market orientation scale which was based on a 25 items scale revised from Narver and Slater. The industry performance criteria was accessed; growth in revenue, return on capital, success of new services or facilities, in retaining patients, in controlling expenses. The results yielded that all the criteria are positively related to market orientation. Ngai and Ellis (1998) found a positive relationship between growth of sales and profitability.

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Following these two studies, it was found that market orientation was positive but insignificant on performance. However, when innovations were accounted for, market orientation was a primary contributor to superior performance. The study also found that market orientation is significant to innovations of technical and administrative oriented, which in turn helps corporate performance (Mukhtar, Aliyu; Mahmood, 2014).

However, literature is limited in studies on market orientation for small businesses. Past studies do not emphasize on the relationship between small business market orientation and environmental uncertainties. The organizations need to project market orientation construct development in terms of premised behavior that organizations must collect market intelligence, organize this intelligence internally and provide feedback through a manner of customer-orientation. It is a business feedback to the external environment covering consumers and rivals. Small businesses flourish in the economic development context and affect global economy, contributing 80 per cent to economic evolution and comprising the massive majority of industries operating in global realms (Reijonen and Komppula, 2007). However, studies on small business on market orientation are still scarce (Didonet, Simmons, Díaz-Villavicencio, & Palmer, 2012).

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Marketing concept, the basis of management and strategy of modern marketing is embedded within market orientation realms for satisfaction of customers. Market orientation appeals to many researchers for its role as the key driver for high-quality practices of marketing. Many doctrines are attributed to market orientation which include parallelism with allowance of resource and processes of decision making (Zebal & Saber, 2014), involvement of executives in strategic decisions and

attentiveness of consumers. It has a wide-ranging conceptualisation but the crux of the aim is to align organisations with market principles (Baker, Sinkula, Seilov, 2015).

Past studies on market orientation and firm performance in Europe and North America are using frameworks and cultural diversity of organisations will affect its usage in Malaysian SMEs. In addition, Chao & Spillan (2010) argued that market orientation scales established in one nation might be able to assess sentiments of market orientation in another nation. Thus, various entrepreneurial orientation determinants and organizational performance scale of diverse industry might vary across countries (Ferreira et al., 2015). To bridge the gap, pertinent items from each area can be adapted and embedded. In addition, market orientation can also be treated as a mediator between orientation of entrepreneurship and performance of SMEs (Amin, Thurasamy, Aldakhil, & Kaswuri, 2016).

Two strategic options to improve performance are found in literature (Kuivalainen et al., 2007) namely establishing managerial ties and networks (Kwon, 2010) and superior customer value (Zhou et al., 2006, 2008). Both aim to increase a competitive advantage (Li, 2009). Hence, firms face uncertainty of high demand, variability and diversity of infrastructure among their customers (Dawar and Chattopadhyay, 2002). The more familiar the organization is to observing customers, the better is the necessary adjustments for new curves of demand (Slater and Narver, 1995) (Katharina & Hofer, 2015).

Studies of market orientation were needed for recent studies suggested that it still affects SME performance. Yet, few hindrances might mislead the results such as the sampling frame usage as the samples are taken from the SMEs online directory where not all SMEs are officially registered with the SME Corp. Moreover, this study

showed the low response rate from the Malaysian SMEs (Mokhtar, Sany Sanuri Mohd; Yusoff, Rushami Zien, 2014).

2.7 Networking

2.7.1 Definition

Managers utilize networking to comprehend existing issues occuring in complex markets and gain insights into inter-organisational relationships (Olkonnen, Tikkanen, & Alajoutsijarvi, 2000). Networking is vital in business realms due to constraints in resources (Gilmore, Carson, & Grant, 2001; Johannisson, 1990). In terms of SMEs marketing decisions , operators use their limited resources in effective ways to be at par with dominant rivals (Falemo, 1989; Welsch & Young, 1983). This study focused on networking of SME owner/ managers pertaining to their procedures of marketing in the turbulent economy.

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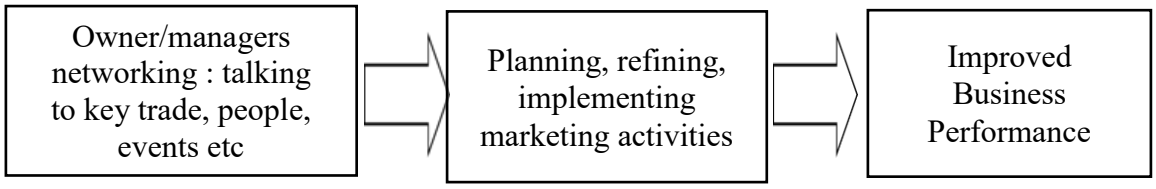
Networking activities are held by SME owners like conversing with other owners, participating in trade events, gathering data with regard to decision-making of marketing and executing activities of marketing. Consequently, networking can be used to plan, improve and apply their marketing activities gain competitive advantage. Figure 2.2 illustrates the SME networking, marketing activities and performance. Figure 2.3 : SME Networking, Marketing Activities And Performance



Importantly, networking is an alternative choice for most SMEs to overcome threats and focus on their core competency and strengths. For networking advantages to be fully exploited, an enterprise framework illustrating the main organisational structure and relationships, flow of information, roles of management, behavior of players and constraints are needed. Networking might be primarily associated with radical innovativeness among SMEs with high response to customer demands. In addition networks are essential for firms which implement activities of innovation and those with lack resources of tangible nature and depend mostly on intangible resources (Nordman & Tolstoy, 2016).

Additionally, organizations operating in technologically turbulent industry realms might have strong positive effect of networking. Internal resources and network position of organizations may affect performance, hence possessing those traits will lead organizations to perform better (Zaheer & Bell, 2005).Shared vision can also activate the relational properties derived from networking and internal properties from absorptive capacity. A shared vision is a bond which glue various components of an organisational network as such to merge properties (Eggers, Kraus, & Covin, 2014).

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Competitive advantage can be gained through cooperation with external organisations to access technology. SMEs project their network offering to stabilize organizations' flaws, decrease expenditure and risks and exchange knowledge and prospective talents. Hence, network relationship is the key for performance of SMEs (Cao & Zhang, 2011). Gils & Zwart stated that learning is the contemporary economic competition . Initially, SMEs' network relationship triggers sharing of knowledge to widen learning dimensions and combination of input and talents. Then, the collected data are used to produce market skills and knowledge (Spithoven, 2017).

Accessing external resources and technological assets is lacking in SMEs. Yet, many studies claim that the SMEs success depends on their efficient utilization of external networks (Rothwell & Dodgson, 1994). SMEs' flexibility and specificity drive innovation. Edwards et al., (2005) stated that SMEs tend to merge with other organizations to handle the whole innovation process . Few studies indicate that network relationships expedite an business innovation process (Lin & Lin, 2016).

Some studies argue that the relationship between SME performance and networking is disputable. The drawback is that they share the same contacts and input (the "echo-chamber" syndrome). Moreover weak ties are short-lived but the individual can get information, advice and assistance from a large, diverse pool of bigger size of network (Saunders, E. Gray, & Goregaokar, 2013).

2.7.2 The Networking Theory

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Social capital theory proposes that owners' securing resources not within their grasp in terms of cost effectiveness by networking medium can affect their joint-ventures success. Networking projects value by giving access for social resources to members of a network (Florin, 2003). Julien stated that this type of cooperation can assist the economies of scale achievement in small organizations 'without producing the dis-economies caused by large size. Likewise, innovation theory proposes that networks are vital in disseminating innovations and, hence, SMEs managers who involve in depth with networking should be excel than SMEs with limited network connections. In a nutshell, social capital theory and innovation theory outline that networking has potential to decrease an organization's threat of failure. (Havnes and Senneseth, 2001).

2.7.3 Networking Types

More studies are focused on networking principles rather than its process. The results tend to be distinctive, not consistent on adopted terminology and concepts, and not conclusive. However, a research synthesis revealed that in general, networking varies among individuals and other individuals during the business transaction. Previous studies discovered that small firm networking varies in several aspects as follows: networking level; networking proactivity and network ties strength. The determinants vary according to entrepreneurs' perceptions and the types of network actor. Each factor is as follows (O'Donnell, 2004).

1. Networking Level

   The owner-managers' networking level for organization vary. Birley et al. (1991) stated that owner-managers possess wide range of networks and spend more time in them compared with their counterparts. On the other hand, Curran et al. (1993) argued that owners are extremely busy to spend time in networking realms.

   A study shows that owner-managers spend longer time with several individuals than others (Curran and Blackburn, 1994; Hill et al., 1999; Joyce et al., 1995; McGowan, 2000). Hence, a networking level for an owner-manager in communicating with a specific party is indicated from "limited" to "extensive' along a continuum.

2. Networking Proactivity

   Arguments also arise on the networking level of small business owners' proactiveness or reactiveness. Curran et al. (1993) insisted that networking for

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small business is very restricted and more reactive than general perception. McGowan and Rocks (1995) also agreed that owners of small businesses often operationalize their networks subconsciously and are not skillful in planning networking activities. The results yielded that the business owners' networking are mostly not structured and coincidental in nature. On the other hand, other studies yielded that planned and deliberate network building is transparent in certain businesses (MacMillan, 1983; Shaw, 1997). These results reflect the fact that the degree of owner-managers' reactive or proactive networking is a determinant related to the owner-manager, in contrast to a determinant for specific network actor, with whom the owner-manager interacts. Shaw (1997) found that his respondents have the awareness of particular network relationships benefits for their organizations which leads to deliberate attempts to engage with these actors. Hence, level of networking proactivity of an owner-manager with a particular network actor is indicated from "reactiveness" to "proactiveness".

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3. Network Tie Strength

Several factors of Network Tie Strength can be found in literature. It is a merging of time, an emotional intensity, an intimacy and reciprocal services which depict the tie (Granovetter, 1973); the regularity usage of the relationship, its level of maturity and the degree of trust and history between them (Johannisson ,1986). It is divided to two aspects strong and weak ties; strong ties are relations that the small firm owner can rely on and weak ties as superficial relations, where people have low emotional investment (Dubini and

Aldrich,1991). All these factors are to be viewed as a set of continuum along which owner-manager networking can vary.

2.7.4 Networking Dimensions

The resource-based view illustrates that an organization's competitive advantage depends on the ability of taking advantage of innovativeness and differentiated external networks (Barney 1991). Kasch and Dowling (2008) also suggest the value of firm networks in expediting the business process, leading to improved outcomes.

Network diversity or range refers to the number of networks a firm belongs to (Baum et al. 2000; Burt 1982; Hansen 1995;). It is suggested that SMEs strategically build various business relationships as an effort to commercialize their technologies or patents as the connections allow firms to access complementary resources which are critical for profitability and growth (Baum et al. 2000). From this point of view, it is postulated that SMEs are better able to effectively commercialize technologies when they obtain a range of knowledge and resources such as technology, R&D and marketing help from various networks. They are :

1. closely working with our suppliers
2. enjoy Government support
3. closely work with University
4. possess a good relationship with Agencies
5. possess a good relationships with our competitors
6. receive feedback from our customers

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Network intensity is the extent of a firm collaborates with a network partner (Hansen 1995). Uzzi (1997) proposes that the concept of intensity is driven by network frequency and time spent. It is also likely to be important to focus on the intensity of networks in assessing the extent to which a network is useful (Jones, Hesterly, and Borgatti 1997; Uzzi 1997), in that resource exchange and collaboration among firms that engage in networks can be facilitated when a network is strongly tied (Hansen 1995; Jones et al. 1997). It appears that complementary knowledge and resources such as R&D and market-related information acquired through such intensified collaborations also help to raise the level of technology commercialization activities (Haanes and Fjeldstad 2000; Lowik, Rossum, Kraaijenbrink, and Greon 2012). Literature suggests for instance that, in the case of R&D network, the degree of network intensity is considered a determinant for performance improvement (Nummela 2003; Clarke 2006). It is plausible to assume, therefore, that network diversity and intensity is likely to be served for SMEs as significant factors of their technology commercialization activities. They are :

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Intimacy and Meeting Frequency

i. Intimacy Level - We keep a close relationship with each other

ii. Meeting Frequency - We meet each other frequently

2.7.5 The Importance of Networking

The networking can be defined as the extent individuals, firms, management or entrepreneurs of the same network tie to each other. These can be either strong or weak. Strong-tie relationships are described by frequent interaction between individuals, entrepreneurs and firms with similar interest. This tends to reinforce and

develop insights and new ideas. Weak-tie relationships, however, are characterized by infrequent interactions between casual acquaintances (Barringer and Ireland, 2016). Arguably strong network ties facilitate communication, cooperation, frequent exchanges of information and greater dissemination of knowledge across the organization. This results significant reductions in total costs (Kraatz, 1998), stable and balanced business operations (Gavirneni, 2002) and improves innovation (Goes and Park, 1997). According to Lee et al. (2009), strong-tie relationships are triggered by a sense of companionship, comfort, security and are part of a multi-layered strategic relationship (Martin, 2020).

Evidently and importantly, SMEs are gaining access to resources of other organisations, hence, emphasizing the importance of networking (Partanen, Möller, Westerlund, Rajala, & Rajala, 2008; Tikkanen, 1998) and activities of entrepreneurship have become more critical today (Carree & Thurik, 1998). SMEs are the key role in rebuilding economy after the recession (Soininen, Martikainen, Puumalainen, & Kyläheiko, 2012). SMEs' external networking has become the main research agenda (Gilmore, Carson, & Rocks, 2006; Partanen et al., 2008). Yet, these studies are not based on empirical findings on determining drivers for SME performance (e.g. Li, Huang, & Tsai, 2009; Merrilees, Rundle-Thiele, & Lye, 2011). Networks and business relationships are able to affect organizations' ability for sustainable competitive advantage (Ford, Gadde, Håkansson, & Snehota, 2006). Another trait of CEOs' behavioral characteristic is external networking behavior. Literature recounts that social networking relationships can be beneficial (Morlacchi, Wilkinson, & Young, 2005). Thompson (2005) found that behavior of external networking is linked to performance of work. Behavior of external networking refers

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to attemps to create, cultivate, retain and use established networks (Ford et al., 2003; Naudé, Zaefarian, Najafi Tavani, Neghabi, & Zaefarian, 2014).

Furthermore, an organization's network is rich with knowledge source and competitive advantage (Dyer and Singh 1998). Recently, the likely impacts of networking on organization success have been extensively analysed. In addition, studies have analysed networking advantages. Overall, networks are worthwhile assets to organizations' resources and knowledge acquisition for organization sustainability. It is beneficial for SMEs in overcoming the lack of sufficient resources and knowledge in the dynamic and turbulent economy. Previously, networking studies have overlooked the advantages of formal business to business networks (Parker 2008). Resource-based view of organization performance states that the unique networking resources and capabilities propel a SME business toward superior performance (Kingsley, 2018).

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2.7.6 The Effects of Networking on Business Performance

Network ties can be viewed from the point of business or social relationships. Entrepreneurial firms utilize business networking as avehicle to connect more with each other counterparts to enhance efficiency operation (Barringer and Ireland, 2016). Business network ties are recognized as key facilitators of the effectiveness and efficiencies of entrepreneurial strategic orientation activities to capture emerging business opportunities (Barringer and Ireland, 2016; Li and Zhou, 2010). As Menor and Roth (2008) stress, world-class organizations are able to create dynamic processes through strong network ties that foster accelerated information flows along with other

capabilities providing sustainable competitive position in the global market (Tajeddini & Ali, 2020).

Interesting to note, entrepreneurial firms have a propensity to be more innovative where information flows establish an arrangement and relationship for quick interactions between agents (Tajeddini and Trueman, 2016). Business networking has been well documented particularly the networks contribution to destination development and knowledge exchange within networks are seen as the creation of learning communities. Indeed, as Kelliher et al. (2009) point out tourism development agencies have specifically facilitated these business networks in small hospitality firms to proactively help these entrepreneurs learn and regions develop (Ali & Martin, 2020).

Organizations' behaviour and performance are closely related to their social context. Social networking is associated with other values like resources and capabilities (Dyer and Singh, 1998). Burt (1997) and Elfring and Hulsink (2003) highlighted that social interaction is the means of organizations to acknowledge and use opportunities and cater to their ecological uncertainties . Besides, networking enables organizations to gain knowledge and resources access in a short time and less costly. Zaheer and Bell (2005) asserted that resources of network enable the development of organizations' internal capabilities leading toward improved organizational performance. (Schoonjans, Van Cauwenberge, & Vander Bauwhede, 2013).

Networking is a complement to internal capability generating synergistic effects. Technology investment strategic importance has a vital direct effect and moderates positively the networking and business performance relationship. Previous studies stated that determinants to technological capabilities exist at the level of organization and network (e.g. Grimpe and Kaiser, 2010; Lin et al., 2009; Rothaermel and

Alexandre, 2009). In addition, a study argued in order for the resources and knowledge exploitation through networking, a sufficient level of internal capability is required. (Voudouris, Lioukas, Iatrelli, & Caloghirou, 2012). Yet, empirical evidence is scarce for studies related to the effectiveness of networking and SME business performance Even though the internal capability independence and networking have been examined (e.g. Veugelers, 1997), the issue of their interaction status of being complementary or substitutive in nature requires more studies (Cassiman and Veugelers, 2006; Rothaermel and Hess, 2007).

Many studies have highlighted the networks and networking roles for SMEs (Cova et al., 1994; Partanen et al., 2008;Tikkanen, 1998;) and has become even more crucial nowadays (Carree and Thurik, 1998). Networking serves as a mediator between innovation, orientation of market and performance of business which is assessed in relation to SMEs new product scale and services (Han et al.,1998).

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2.8 Clarification On Constructs Are Unidimensional Or Multidimensional

To determine whether a construct is unidimensional or multidimensional, researchers commonly rely on theoretical foundations and statistical techniques such as factor analysis. As Hair et al. (2019) explain, exploratory and confirmatory factor analyses help identify whether indicators load onto one or multiple underlying factors. Unidimensional constructs reflect a single underlying concept, while multidimensional constructs comprise several interrelated dimensions (DeVellis, 2016). Bollen (1989) and Nunnally and Bernstein (1994) further emphasize the importance of construct validity and internal consistency in establishing sound measurement models. In developing performance measures, researchers must ensure alignment between

theoretical definitions and operational indicators (Churchill, 1979). Justification is also strengthened through evidence of reliability, validity, and relevance to business outcomes (Peter, 1981).

2.8.1 Justification On The Choice of Performance Measurement

Justifying performance measurement begins with clearly defining the construct to ensure that the concept being measured is conceptually and operationally aligned (Churchill, 1979). The selected performance metrics must reflect the theoretical underpinnings of the construct and be supported by empirical literature (Peter, 1981). According to DeVellis (2016), reliability and validity are essential to ensure that the measures consistently and accurately capture the intended construct. Furthermore, Hair et al. (2019) argue that performance metrics must be empirically tested through factor analysis or structural modeling to confirm their dimensional structure. Importantly, the justification of performance measures should also involve demonstrating how the metrics are linked to strategic objectives or organizational outcomes, thereby ensuring their practical relevance and utility (Kaplan & Norton, 1996; Busi & Bititci, 2006). This approach ensures that measurement systems are both scientifically robust and aligned with managerial goals.

2.9 Underpinning Theory – Resource-based View (RBV)

2.9.1 Definition

The Resource-based View (RBV), a strategic management theory. is commonly utilized in project management, examining the role of resources in driving competitive

advantage. Competitive advantage refers to the ability to construct more value than competitors generating higher revenues. To create sustainable competitive advantage, enduring advantages through capabilities that are not easily cloned are needed (Killen et al., 2012). The RBV is derived from a principle that resources and capabilities are not heterogeneous across other businesses and this concept utilization may clarify the success rate variations between organisations.

RBV suggests that with the smaller organizations' limited resource or knowledge, obtaining resources externally is an option (Hadjimanolis, 2000). RBV is concerned on how an organization's resources or knowledge are being generated and affecting its performance (McIvor, 2009). Performance of SME is enhanced through reception of data and advice (Bennett & Robson, 2004). Nevertheless, few studies on determining utilization of advisory services for professional accountants and performance of SME relationship in the UK have produced inconclusive results (Bennett & Robson, 1999; Berry, Sweeting & Goto, 2006; Robson & Bennett, 2000). Hence, the firms with RBV orientation pillar a theoretical ground for the organization-specific determinants measurement that have potential in influencing performance of SMEs (Irwin, Hoffman & Lamont, 1998). The RBV caters to the dominant issues on ways in which to achieve superior performance among other rivals and claims that better performance is secured if the organizations' unique resources are obtained and utilized (Bennett & Robson, 2004; Kamyabi & Devi, 2012Marshall et al., 2007; McIvor, 2009; Gainey & Klaas, 2003; Roy & Aubert, 2002).

RBV emphasizes that resources owned by organizations can potentially provide continuing competitive advantage when they are not nonimitable and not substitutable. Nevertheless, the process of creating value-generating resources is limited in literature. Indeed, a firm's network is creating non imitable and non-substitutable value

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as a nonimitable resource by itself, and as a means for resources of nonimitability and access of capabilities. Gulati (1999) described these as "network resources", closely linked to social capital, aiming to understand individual networks. Hence, from the RBV perspective, organization's relationships network is a primary source for the inception of resources of inimitable value-generation. Such networks'strategic implications at the organization level can be measured using similar frame. For example, structure of network, membership, and modality of tie are analysed in relation to ways and which an individual view each aspect of this network as inimitable resources (Gulati et al., 2000). At a formal level, an organization's resources refer to assets with tangible and intangible nature which are knotted temporarily to the organization (see Caves, 1980). Examples of resources include brand names, technological in-house knowledge, skilled workers employment, contacts of trade, machinery, efficiency of procedures, capital and others (Wernerfelt, 1984).

2.9.2 VRIO – Valuable, Rare, Costly To Immitate and Organized

VRIO, a tool developed by Barney, J. B. (1991), is to analyze organization's internal resources. Four attributes of resources include rare, valuable, non-substitutable and imperfectly imitable. VRIO analysis includes four questions; Is the resource: rare?, costly to imitate? valuable? and is a firm organized to capture the value of the resources? A resource that meets all the criteria will lead to sustainable competitive advantage for organizations (Bloodgood, 2014).

Valuable – The resource of organization adds value by allowing organizations to utilize opportunities or protect against threats. The resources value of the must be

reviewed constantly for internal or external conditions dynamism tend to decrease or eliminate the valuable resources.

Rare - Resources that are gained by only one or more organizations are treated as rare. Rare and valuable resources offer provisional competitive advantage. In contrast, if only few businesses possess the resource and use them in the similar way, competitive parity will emerge. If organizations can utilize similar resources to implement similar strategies, superior performance is not attainable for organizations. Networking,then, can be utilized to develop and improve competitive advantage.

Costly to Imitate - If other organizations cannot duplicate, purchase or replace a product at a reasonable price, a resource is considered costly to duplicate. This types of resource is able to secure sustainable competitive advantage. Hence, process innovation within organizations can produce highly competitive players.

Organized to Capture Value - The resources need well-balanced organization to give competitive advantage. Systems of Management, processes of standard operating procedure, policies, structure and culture of organizations must be organized effectively to achieve the potential of rare, valuable, capabilities and costly to imitate resources.

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2.9.3 Objective of Proposing RBV

RBV comprises tangible and intangible assets. Tangible assets refer to physical objects like land, premise, equipment, machinery, and capital. Intangible assets are abstract in nature like brand reputation, trademarks, intellectual property, experience, skills, exposure in multi discipline projects, licensing and competency certificates. These

assets are developed over a long run and precious where other organizations cannot duplicate and purchase in the open market.

This thesis is utilizing RBV theory to support the proposed theoretical framework and clarify the impacts of innovation, market orientation and networking to improve organization's competitive advantage and enhance business performance of Malaysian SMEs in the oil and gas industry.

2.10 Research Framework

The research theoretical framework was constructed to explain the problems being examined and thus, the framework is guiding this research. However, it is also can be an adept model used in previous research with some changes in current situations. Aside from showing direction of the research, through the framework, the researcher has demonstrated the relationships of the different variables that were needed for this research investigation.

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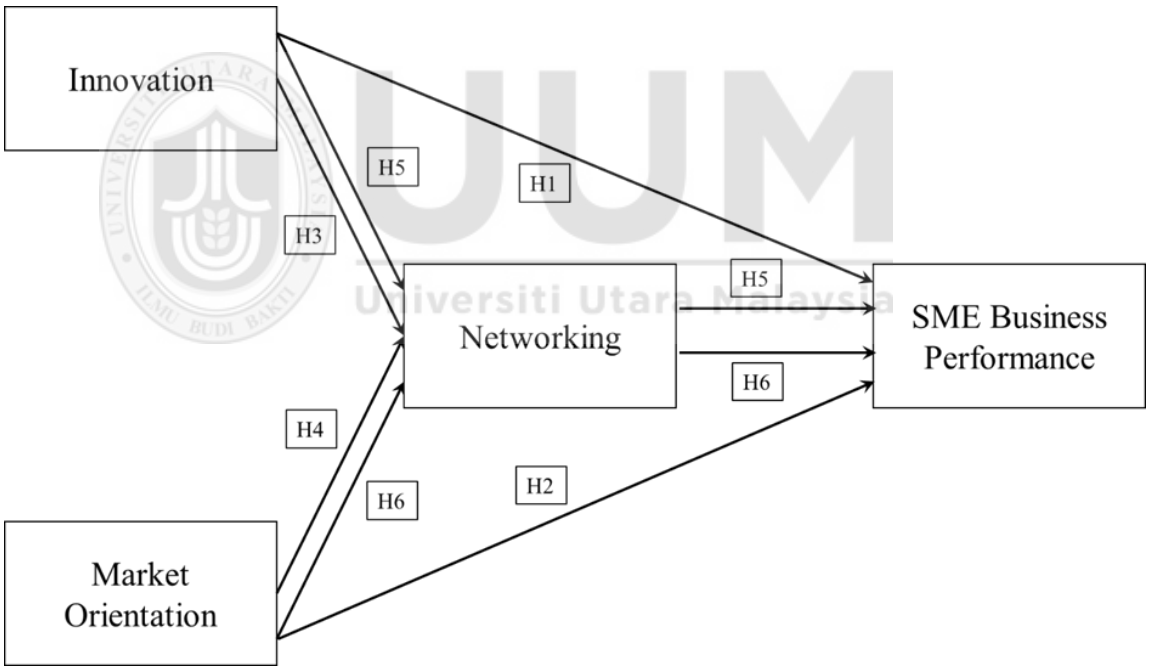
The framework can be defined as established hypothetic-deductive research as it is the foundation of the hypotheses that the researcher developed (Sekaran & Bougie, 2010). Therefore, a defined research framework was guided by a specific set of hypotheses supported by underpinning theory.

This research aimed to study how innovation and market orientation interact with SME performance. In particular, the researcher proposed measuring effect of a mediator, namely networking on innovation, market orientation and SME performance. The central question underlying the research from the mediating perspective was whether networking influenced the oil and gas service providers SME business performance. Throughout the literature review, a thorough analysis was conducted covering

innovation, market orientation, networking and SME performance. The resource-based view (RBV) theory supported these variable and patterns.

Figure 3.1 illustrated the research framework in planning particular and measurable research questions. The model comprised of innovation and market orientation constructs as independent variables whereas SME performance as a dependent variable. The model suggested that innovation and market orientation influenced SME performance, which needed to be measured. It also proposed that networking mediated relationship between innovation, market orientation and SME performance.

Figure 3.1 :Research Framework For The Research



2.11 Chapter Summary

This chapter reviewed extant literature that was relevant to the research questions and objectives. It provided the background of SMEs and the development of the industry in the Malaysian context. The chapter further reviewed the literature on constructs used

for this research namely innovation, market orientation, networking and SME business performance, and their direct and indirect relationships. Hypotheses were formulated in Chapter Three to answer the research questions and a research model as previously developed.

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CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter discussed the methodology used in the research. It began with the research framework and thereafter, it discussed the hypothetical development. Hypotheses were built on innovation, market orientation, networking and SME performance relationship. Then, followed by research design and procedures used to generate participation from respondents. Measurements and instrumentations, procedure of data collection, techniques of data analysis, validity and reliability issues of the variables were addressed to answer the research questions.

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3.2 Hypotheses Development

This study was significant by studying many interacting variables with the business performance of the Malaysian oil and gas SME service providers. The comprehension of these relationships and new methods, strategies could be developed to improve the firms' performance, which can directly help them to be more competitive in today's market. This section explained the hypotheses development of this research.

This research comprised three types, including the mediating variable. The variables for this research were innovation, market orientation, networking and SME business performance. Independent variables consisted of innovation and market orientation whereas dependent variable was SME business performance. A mediating variable for innovation, market orientation and SME business performance was networking, basing

on rigorous literature review that the hypotheses developed for this research would provide significant and valuable insight of the SMEs performance in the Malaysian oil and gas industry service providers.

3.2.1 Innovation and SME Performance

The structure, cultural characteristics and procedural styles of organizations were considered a hotbed for innovation. Innovativeness showed a significant relationship with participative decision-making and organisational learning (Hurley & Hult, 1998). A collaborative culture inspires the development of organisational learning and enhances performance of competitiveness (Lopez, Peon & Ordas, 2004). Strong inter-functional coordination oriented businesses are more able to innovate, sustain, and transfer knowledge (Argote, McEvily & Reagans, 2003). Hence, a smooth and tight inter functional coordination in and of itself affects organization performance positively.

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Processes of innovation involve various players and are multifaceted, vibrant, and resulted in cumulative dynamic interaction. Private small- and medium-sized businesses (SMEs) are the key players for new idea generators, new venturing entrepreneurs and partners for other local players. Today's innovation activities focus on value creation for organizations where innovations use the network platform which merges various knowledge and properties (Jørgensen & Ulhøi, 2010).

Studies on SME innovations (Grabher, 1993; McAdam, McConvery & Armstrong, 2004) emphasize on hurdles faced by small companies to innovate their products and are closely related to the assessments to inculcate innovation at the levels of local, regional and national (Asheim & Coenen, 2006). Indeed, systems of innovation and

SME business performance were vital in scaffolding infrastructure for innovative purposes. Van de Ven (1993) stated that infrastructure has developed to an extent that the facilitating innovation needs and methods already present to be exploited by present entrepreneurs. A specific infrastructure quality might act as a primary factor in the innovation process. Nevertheless, studies on the variation of innovative and non-innovative small companies showed that innovative variations are caused primarily by internal traits of the businesses rather than the external ones (e.g., Forsman & Rantanen, 2011; McAdam, McConvery & Armstrong, 2004;).

Previous studies also indicated clear synergies between innovation and SME business performance. More studies were needed to ensure that the performance nexus and innovation operate visibly for larger organizations and SMEs ; however, lessons for policy also need to be organized (Love & Roper, 2015).

H1: There was a significant relationship between innovation and SME performance.

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3.2.2 Market Orientation and SME Performance

Performance was vital for organisations to plan, strategise and re-structure (Bourne et al., 2013; Dess & Robinson, 1984) for their sustainability and eventual success (Richard et al., 2009). Businesses in advanced nations focus on effective empowerment, teamwork, delegation learning, level-headedness and performance management (Ford & Fotler, 1995). Past studies use multidimensional measures to assess performance. Farrell and Oczkowski (2002) and Narver and Slater (1990) asserted that performance acts as a means of retaining customers, producing new product, expanding sale , returning on investment and attaining performance. Roger et al.'s (2002) study also regard it as a function of return on investment, assets, sales and

overall performance. Volume of sales, share of market and profitability are other common inputs (Kropp et al., 2006; Renton, Daellenbach, Davenport, & Richard, 2015).

Kumar, Subramaniam and Yauger (1998) conducted a study on the market orientation and performance relationship in health care industry. The authors used a market orientation scale which was based on a 25 items scale revised from Narver and Slater (1990). The industry performance criteria was accessed including growth in revenue, return on capital, success of new services or facilities, success in retaining patients, and success in controlling expenses. The results found that market orientation was positively related to all of the performance criteria. Ngai and Ellis (1998) the performance measures in Hong Kong include sales growth/market share growth and profitability. The authors found a positive relationship between market orientation and performance in Hong Kong. Han, Kim and Srivastava (1998) found that market orientation was positive but insignificant on performance. However, when innovations are accounted for, market orientation is a primary contributor to superior performance. The study also found that market orientation is significant to innovations of technical and administrative oriented, which in turn helps corporate performance(Mukhtar, Aliyu; Mahmood, 2014).

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Ruekert (1992) studied the degree of market orientation, processes of organisations, attitudes of individuals and long run financial performance relationships. The results provided support on earlier studies that market orientation is significant to a broader organisational process, individual attitudes towards their job and networking business unit performance over the long run. However, Diamantopoulos and Hart (1993) who replicated the earlier study of Kohli and Jaworski (1990) could not find a positive relationship between the two variables.

Previous studies suggested that the organizational processes in becoming market-oriented assists the business to retain its competitiveness and relevance in business realms ,thus, verifying that market orientation is a precursor to competitive advantage (Jaworski and Kohli, 1993; Narver and Slater, 1990). Other studies also indicate that franchise organizations that inherit competitive advantage are more lucrative to franchisees, which in turn draw new members (grow the business) and elevate franchisee satisfaction (sustain the business). In addition, an emphasis on market-oriented approach by a franchise firm is injecting awareness of business environment to all franchisees and to share any thoughts or ideas with the parent company. Hence, a two-way communication connection between franchisors and franchisees will instill trust-oriented relationships (Chiou et al., 2004; Mohr et al., 1999). Findings from the study show the market orientation and business performance relationship, verifying that market orientation is a prerequisite tool in achieving a competitive advantage, and a competitive advantage is beneficial in attaining satisfaction of franchisee(Lee, Kim, Seo, & Hight, 2015).

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H2: There was a significant relationship between market orientation and SME performance

3.2.3 Innovation and Networking

Studies on SME innovations (Grabher, 1993; McAdam, McConvery & Armstrong, 2004) emphasize on hurdles faced by small companies to innovate their products and are closely related to the assessments to inculcate innovation at the levels of local, regional and national (Cooke, 2001; Asheim & Coenen, 2006). Studies on the innovative and non-innovative small companies variation showed that innovative

variations are caused primarily by internal traits of the businesses rather than the external ones (e.g., Forsman & Rantanen, 2011; McAdam, McConvery & Armstrong, 2004).The relationship between SME business performance and networking is disputed. Strong et al. (1993) argued that SMEs are lacking business networks or engagement in any networking activities beyond those of direct relevance to the business. Granovetter (1985) proposed business networks of family "strong ties" and the weak ties . Strong ties refers to relations that the small firm owner can rely on and weak ties as superficial relations where people have low emotional investment. Today's innovation activities focus on value creation for organizations where innovations use the network platform which merges various knowledge and properties (Jørgensen & Ulhøi, 2010).

Previous research has focused on the relationship between innovation and networking. Findings of past studies indicated organization networking has positively affected organizations 'product and process innovation. In short, networks are positively significant to organizations' innovations (Schøtt & Jensen, 2016). Staber (2001) found a contextual influence networking and innovation performance. Nevertheless, he also found that clusters elevate the innovation level if not networking activities. Networks are a key driver of innovation within clusters as inter-firm relations quality is more effective for innovation as clusters are molded (Schott & Jensen, 2016).

H3: There was a significant relationship between innovation and networking.

3.2.4 Market Orientation and Networking

Networks are essential for today's organizations specifically for market-oriented ones (Hagedoorn et al., 2000; Zeng et al., 2010) and for those that depend on intangible

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resources that are accessed and employed beyond the organization's limitations (Knight and Kim, 2009; Nordman & Tolstoy, 2016; van de Vrande et al., 2009; Zeng et al., 2010) .

In their study, Slater and Narver (1994a) found that components of market orientation are not only positively related to sales growth but new product success as well. The study gave little support for the proposition that competitive environment has an effect on the strength of the market and performance relationship, and that businesses that are more market oriented are best positioned for success under any environmental conditions. Networks are becoming increasingly important for firms, especially those that undertake innovative activities (Hagedoorn et al., 2000; Zeng et al., 2010). Networks are also particularly central for SMEs, which often lack tangible which often lack tangible resources (e. g., financial and human-capital resources) and, therefore, rely heavily on intangible resources that are accessed and employed outside the boundaries of the firm (Knight and Kim, 2009; Rovira Nordman and Melén, 2008; van de Vrande et al., 2009; Zeng et al., 2010; Zhou et al., 2007) (Nordman & Tolstoy, 2016).

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H4: There was a significant relationship between market orientation and networking

3.2.5 Networking as Mediator Between Innovation and SME Business Performance and Market Orientation and SME Business Performance

A strategic SME network acts as a platform to gain insights on their projects and behavior, provide means to act proactively in cooperation, and get ideas for innovation and support for risk taking in entrepreneurial activities. Networking refers as the degree a firm (that is, the individuals and the groups within it) relates with other

organizations for development of business in a strategic network of SMEs (Chell and Baines, 2000; Covin and Slevin, 1991). Hence, networking can gear for chances (for example ascertain relationships of new means-ends) and assist other organizations in the network (by cost reduction or scope enhancement). This networking mode enables organizations within the circle of SME network to experience a contextual "mismatch" because they do not readily exploit the entrepreneurial chances offered. Thus, networking is required for innovation to be fully exploited, taking risks and acting proactively relative to the marketplace opportunities (i.e. to produce entrepreneurial behavior) for firms listed in the networks.

Previous studies show that behaviors of external networking significantly affect structure of network which is in agreement with current results showing that behavior of networking is a significant determinant of structure of network (Thompson, 2005; Wolff and Moser, 2006). Hence, emotional intelligence is preferable for CEOs in the information technology field rather than to act in entrepreneurial ways: their utilization of emotion in their interaction with people is more important than their entrepreneurial acts in exploiting their networks, leading toward improved SME business performance. The findings are in rhyme with the notion that networks benefits more for organizations operating in an intrinsic weakness. Hence, for the SMEs, encouraging sharing of resources and organizations' exchanging of interactions or input through networking can gear toward a win-win situation. Networking can be another alternative to dimensional expansion in achieving resources, information and experiences. Nevertheless, networks can be a valid way to hinder the lack of infrastructures and isolation which characterize less developed areas' issues. Likewise, networking is a valid instrument for performance sustainability in a turbulent market. Formal networks are more effective in elevating value added during the high volatility

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sales whereas the export propensity effects do not differ from the ones reported for more established sectors. Furthermore, the clear reflection of the common features between weak and strong forms of networking exists. Studies showed that network agreements formalization through contracts has a higher effect on value added for organizations localized outside industrial districts (Cisi, Devicienti, Carlo, Manello, & Vannoni, 2016).

In this research, networking referred to a mediating variable. A mediator described the ways in which external physical events take on an internal psychological significance and took on important role in predictions (Shmueli, Ray, Velaquez Estrada & Chatla, 2016). While moderator variables specify when specific effects will keep, mediators lead to such implements (Baron & Kenny, 1986). Some researchers such as Wincent and Weterberg (2005) used networking as mediator in their study as well. Therefore, in this research, networking proposed as a mediator and two hypotheses were developed as follows :

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H5: There was a significant relationship between innovation and SME performance, with a mediating effect by networking.

H6: There was a significant relationship between market orientation and SME performance, with a mediating effect by networking.

3.3 Research Paradigm

A research paradigm represents the philosophical framework that guides how research is conducted, influencing ontology (nature of reality), epistemology (nature of knowledge), and methodology (approach to inquiry). The three dominant paradigms are positivism, interpretivism, and pragmatism. Positivism emphasizes objective

reality and quantifiable observations, often using experimental or survey methods. Interpretivism, on the other hand, seeks to understand phenomena through the subjective meanings of participants, commonly using qualitative approaches (Guba & Lincoln, 1994). Pragmatism allows the integration of both qualitative and quantitative methods, prioritizing the research problem over adherence to a single methodological stance (Creswell & Creswell, 2018; Morgan, 2007).

3.4 Research Design

Undertaking research required creating a proper design on how the research can best be carried out. This has led to all for clear understanding of existing research designs and thus suggested an appropriate design to undertake research. A plan to conduct a research, which comprised the elements to research and procedures to take is known as a research design (Sproull, 1955). However, according to Singh (2006) and Sekaran (2009), it is a set of decisions and comprehensive mapping strategy that are chosen to coordinate and integrate the different constituent parts of research in asymmetric and logical way, hence providing the basis for addressing the research tools, techniques for collecting data and evidence and the appropriate statistical techniques for data analysis. This is in line with Saunders, Lewis and Thornhill (2009) and Zickmund, Babin, Cari and Griffin's (2010) studies. A research design confirmed by Kumar (2011), who claims there are two major components that require careful and adequate attention in undertaking a research work on the research design perspective, identification and development of procedures begin with the research and assuring that validity, objectivity and accuracy because of selection and techniques and procedures.

3.4.1 Type of Research Design

This study utilizes a quantitative cross-sectional survey research type. The survey method is deemed fit for it utilizes few basic procedures to gain data from respondents in their natural setting (Graziano & Ravlin, 1997). A survey will also conducted aiming to generalize the results to the population (Girden, 2001). Few advantages of survey research include (1) controllable method , (2) easy access to data, and (3) intentional ways of obtaining a general sense respondents' feelings (Shankar & Davenport, 2018).

Besides, survey method shows high levels of validity because questions are posed directly, indicating the underlying nature of constructs (Lyon, Lumpkin & Dess, 2000). Surveys comprise a sufficiently comprehensive set of items depicting the relevant subject matter. Moreover, techniques of convergent and discriminant validity can be utilized to ascertain the accuracy of such assessments (Mason & Bramble, 1989). Besides, multi-item scales and survey instruments assess present conditions within organizations with a high degree of specificity (Lyon, Lumpkin & Dess, 2000). Scale items for choice responses provide greater measure of validity. In addition, the survey approach is efficient in collecting large amount of data at relatively low cost and is subject to statistical analysis (Snow & Thomas, 1994).

Online survey was employed as the means for data collection for several reasons. First, it was a common and fastest way utilized by similar types of research nowadays. Second, wider geographic areas can be covered to ease data collection process. Lastly, self-administered questionnaires were able to prevent interviewer bias (Jobber, 1991). Thus, the selected research design met the requirements of this study in providing reliable and valid outputs (Kocjan, Laftar &Socan, 2022).

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3.5 Sampling Procedure

3.5.1 Unit of Analysis

The unit of analysis is the major entity that is being studied in a research project—such as individuals, groups, organizations, or events. It determines the level at which data is collected and conclusions are drawn (Babbie, 2020). Accurately identifying the unit of analysis ensures that the research questions align with the data structure and avoids common errors such as ecological fallacy (applying group-level conclusions to individuals) or individualistic fallacy (vice versa). In this study the unit of analysis is the firm and the respondents are the owners and managers.

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3.5.2 Sample Size

The population of this study was based on the oil and gas service industry's SMEs currently operating in the east coast cities of Malaysia specifically Kuantan in Pahang as well as Kertih and Kemaman in Terengganu. The concentration of O&G regional players were mainly in East Coast of Peninsular Malaysia, Miri and Bintulu in Sarawak and Labuan in Sabah. This particular service industry was chosen because of its reputation as a niche, competitive, quickly changing and innovative service industry requiring diligence on the part of its members to establish and sustain competitive advantage through their dynamism and entrepreneurial edges. The list of these service providers was obtained through SME Corporation vendors list.

At present, approximately over 3,500 Malaysian oil and gas (O&G) companies consisting of international oil corporations, independents, services and manufacturing organizations that supported the O&G value chain needs both in domestic and regional

markets and it was estimated roughly about 1,000 of them were SME service providers supporting the oil and gas industry (MIDA, 2017). Hence, the sample size deemed appropriate as suggested by Saunders, Lewis and Thornhill (2007) should be 278 while Sekaran (2003) suggested 254. The sample sizes obtained for this study also adhere to the rule of thumb proposed by Roscoe (1975) that sample sizes larger than 30 and less than 500 is appropriate for most studies. Other studies stated that small, size represents less than 100 samples is regarded as medium samples are between 100 and 200 whereas large sample size is more than 200 (Hair et al., 1995; Hulland, Chow & Lam 1996; Kline 1998). Hence, 200 samples were deemed appropriate and sufficient. Nevertheless, to prevent the non-response probability which can reach to 70 to 80 per cent (Malhotra, 1996), the number of questionnaires sent as the intended samples needed. In this study, the questionnaires were sent to all the 200 SMEs via email using online survey such as SurveyMonkey and Google Form.

A simple random sampling method enables the findings' generalisation to the population (Bryman & Bell, 2003) and its ability in providing data of a given sample size. Creswell (2003) suggested a random sample where each sample has an equal probability of being chosen. Saunders, Lewis and Thornhill (2007) stated that probability sampling is a compromise between the accuracy of results and the amount of time and money invested in collecting, checking and analyzing the data.

The sample size should be adequate to the study by being large enough to approximate the population characteristics satisfactorily and provide results credibly (McMillan & Schumacher, 2001). The sample size choice is often based on the following elements; the researchers' confidence of needs for the data, the margin of error that is tolerable, the analysis types selected by researcher and the population size from which the samples are being extracted (Hair, Anderson, Tatham & Black, 1995 ; Kline, 1996).

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3.6 Measurement and Instrumentation

3.6.1 Measurement

This research adopts measures from the past research subject to the measures' suitability. The questionnaires utilise the five-point Likert scale which ranges from "strongly disagree", "disagree", "agree", "neutral, "agree" and "strongly disagree". Although there are varying degrees of intensity measured, most of them settle for a minimum of four to five dimensions (Wolfer, 20017; Neuman, 2014) and five point Likert scale is one of the common ranges where respondents locate their attitudes (Wolfer; 2007). The range of scoring is from 1 to 5. It is designed in such a manner that the respondents select the best option that reflects themselves by providing only "closed-ended questions". According to Zikmund et al. (2010), this question encourages respondents to answer and consume lesser time for completion. In addition, it helps in better comparison and analysis of data, allowing an efficient analysis of the data collected.

3.6.1.1 Innovation

Innovation scale comprises eight (8) items. These items measure the progress and execution of new outputs, services, production methods , marketing methods and marketing establishment in small business procedures listed in Table 3.1. The items of assessing innovation are adapted from studies of Han, Kim and Srivastava (1998), Cosh, Hughes and Wood (1999), and Lipparini and Sobrero (1994). The items are also assessed based on five (5) point Likert type scale ; 1 indicates 'strongly disagree' and 5 indicates 'strongly agree' The scale items on innovation are listed in Table 3.2.

Table 3.1 : Innovation

Innovation
1. For the past 5 years the business has developed many new products or services.
2. For the past 5 years, the business has improved the product or service it offers.
3. For the past 5 years, the business has improved its method of production.
4. For the past 5 years, the business has developed new methods of marketing.
5. For the past 5 years, the business has established new markets.
6. Knowledge allow firm to develop and implement innovation strategies in marketing.

Table 3.2 : Likert Scale

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

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3.6.1.2 Market Orientation

Market orientation can be measured using two approaches; Narver and Slater's (1990) cultural perspective and Jaworski and Kohli's (1993) behavioral approach. Each study develops a valid assessment of market orientation and assesses its influence on performance of organizations in empirical way. Narver and Slater (1990) classified market orientation into three constructs; customer orientation, competitor orientation and inter-functional coordination. Customer orientation is how an organization understand it's target buyers so the organizations can create superior value for its

customers. Competitor orientation is where an organization comprehends the short-term and long-term strengths and weaknesses, capabilities and strategies of the key current and potential rivals. Competitor orientation refers to the interfunctional coordination as the coordinated utilisation of an organization's resources in creating superior value for target customers. Organizations also require long-term focus on profits and implementation of each of three behavioral components from a long-term perspective in order to attain long-term survival (Narver & Slater, 1990).

Jaworski and Kohli (1993) define market orientation as three components of market information processing; market intelligence generation, dissemination and responsiveness in a learning organisation. Intelligence generation includes exogenous factors analysis that affect customers' needs, preferences and changing needs throughout the organisation. Intelligence dissemination is the communication or dissemination of market information to relevant departments and individuals in the organisation. Responsiveness is the actions performed in response to market intelligence that is generated and disseminated.

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Narver and Slater's (1990) market orientation constructs because they are categorized into diverse elements. Hence, the effect of each component on performance of business can be clearly seen. Even though market orientation is regarded as a single construct, some researchers have analyzed each component separately (Lukas & Ferrell, 2000). The market orientation measures consist of the following items: six (6): customer orientation, seven (7) : competitor orientation, and five (5): inter-functional coordination, totalling 18 items. A five-point Likert-type scale is used and the scale ranges from 1 (strongly disagree) to 5 (strongly agree).

Competitor Orientation

1. Managerial staff regularly shares information within our organisation regarding our competitors' actions.
2. We keep informed and analyze the product offers by our competitors.
3. Managerial staff targets customer where we can have an opportunity for competitive advantage.
4. Top management often discusses competitors' strengths and strategies.
5. We usually anticipate how our competitors will response to our competitive move.
6. We rapidly response to competitive action that threatens us.
7. When I am faced with decision making situation, I am willing to take risk.

Customer Orientation

8. Our business strategy is driven by our beliefs about how we can create greater value for customers.
9. We measure customer satisfaction systematically and frequently.
10. Our business objectives are driven primarily by customer satisfaction.
11. Our competitive advantage is based on our understanding of customer needs.
12. We constantly monitor our level of commitment and orientation to serving customer needs.
13. We give close attention to after sales services.

Inter-functional Coordination

14. Our top managers business function regularly visit our current and prospective customers.
15. We freely communicate information about our successful and unsuccessful customer experiences across all business functions.

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16. All our business functions (sales, marketing, R&D, finance) are integrated in serving the needs of our target markets.
17. All our managers understand how everyone in our business can contribute to creating customer value.
18. We share resources with others business units.

3.6.1.3 Networking

The objective of this research is to propose networking as a mediator to provide ample comprehension on the networking process nature of SMEs. The interactional or process dimensions of SMEs are rarely examined compared with their structure (Araujo and Easton, 1996; DiMaggio,1992). Harland (1996) justified that network structural dimensions are open to quantitative methods Yet, networks comprehension extended by such quantitative methods is limited and, in some cases, puzzling. As Blackburn et al. (1990) asserted that the link diagrams connecting the members of a network postulate the number of links between them and the actual relations is shown in ways in which they cluster.

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Network Intensity and Network Range

1. We keep a close relationship with each other
2. We meet each other frequently
3. We closely work with our suppliers
4. We enjoy Government support
5. We closely work with University
6. We have a good relationship with Agencies
7. We have a good relationship with our competitors We receive feedback from our customers

3.6.1.4 Business Performance

The performance measures used in this study are also adapted from literature. Performance is assessed based on two perspectives namely objective and subjective concepts. The former measures performance whereas the latter measures selves (Tse, Sin, Yau, Lee & Chow, 2004). Subjective approach requires samples to reveal their organization's performance for criteria such as market share and profitability relative to that their rivals. Subjective performance measures are utilized for four main purposes. First, a selected multi-item subjective measure has more accuracy than a single quantitative factor (Gupta and Govindarajan, 1984). Second, subjective assessments might elevate the response rate where objective data either are not available or organizations are reluctant to disclose any data (Dess & Robinson, 1984). Third, subjective measures are strongly correlated with performance objective measures (Dawes, 1999; Dess, Lumpkin & Covin, 1997; Narver & Slater, 1994; Dess & Robinson, 1984). Fourth, subjective measures are commonly applied in previous market orientation and performance research (Slater & Narver, 1994; Jaworski & Kohli, 1993; Narver & Slater, 1990). Pearce, Robbins and Robinson (1987) suggested that subjective evaluations are deemed reliable in assessing performance. A sample of the item includes 'Overall how successful is your business as a whole?' The items are rated on a five-point Likert type scale ranging from (1) which indicated 'much worse than competitors' (2) 'worse than competitors' (3) 'about the same', (4) 'better than

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competitors', (5) 'much better than competitors'. The scale items for performance are listed in Table 3.3.

Table 3.3 : Business Performance Scale

1	2	3	4	5
much worse than competitors	worse than competitors	about the same	better than competitors	much better than competitors

1. Gross Profit (before tax)
2. Return on Asset (ROA)
3. Profitability
4. Growth
5. Overall Business Success

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3.6.2 Reliability

Reliability refers to how far a measurement process produces consistent results over an extended time frame (Carmines & Zeller, 1979). Any measurement of a concept comprises a certain amount of opportunities or random error. Since measurement of error free is not theoretically possible, researchers seek to minimize random error. Thus, the random error amount is inversely associated to the reliability degree of the measuring tool.

Coefficient alpha is a commonly used measurement tool for internal consistency of a set of items (Churchill, 1979). It ascertains the coefficient of mean reliability for all possible ways of splitting a set of items in half. If the average correlation among items increases, the number of items increases, elevating the alpha value (Nunnally, 1978).

Thus, a high alpha shows that the items correlate well with the true scores whereas a low alpha shows that the items perform poorly on the construct of interest (Nunnally, 1978). Cronbach's alphas of 0.80 or higher are considered good and alphas of at least 0.70 are deemed acceptable (Nunnally & Bernstein, 1994).

Narver and Slater (1990) reported the scores for competitor orientation, customer orientation and inter-functional coordination as 0.73, 0.87 and 0.73 respectively. Since this study's measures are adapted from those of Narver and Slater (1990), the same Cronbach alpha method for assessing reliability is utilized for innovation and performance measures. Masroor (2009) reported that reliability scores for competitor orientation, customer orientation, inter-functional coordination, innovation and business performance measures are 0.76, 0.83, 0.65, 0.90 and 0.75 respectively. Reliability scores indicated by Sartika (2001) for competitor orientation, customer orientation, and business performance are 0.733, 0.65 and 0.827 respectively. The reliability scores for all measures used in this study are presented in Table 3.6.

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3.6.3 Instrument Validity

A valid measurement refers to a condition when it actually measures what it is intended to measure (Nunnally, 1978), and thus, the measures utilized in this study is deemed to be valid too. Invalid measurements occur when non-random error is present which hinders the measures from representing what they are intended for (Carmines & Zeller, 1979) and might represent something deviated than the intended concept or even a contrastive concept.

For this research, the validity is conducted to assess the dimension by correlating (the extent to which two or more variables are associated with one another) each of the

indicators with the total score result. The methods for measuring correlation include the intraclass correlation the Pearson product-moment correlation coefficient (Ghozali, 2005; Ghozali, 2008). The results are then compared statistically with critical number of the r value of the correlation table. If the r-count is greater than r-table (r-count > r-table), the data is considered significant (valid), and the indicator is deserved to be used in the next analysis (r- table is referred from Pearson product-moment correlation coefficient (Ghozali, 2005; Ghozali, 2008)).

This research content is validated by identifying the defined variables and applied in past studies (Churchill, 1988; Green, Tull & Albaum, 1988; Churchill & Iacobucci, 2004). the variables are identified from the dimensions of marketing orientation, innovation and business performance. The field experts' insights are collected to generate appropriate data in addition to those identified in literature.

Validity of construct is assessed through confirmatory factor analysis (CFA). Confirmatory factor analysis will ascertain whether items are loaded on the appropriate factors as stated in literature (Venkatraman, 1989). Confirmatory factor analysis using PLS-SEM is applied because this study seeks to assess variables 'potential relationships. Furthermore, the measurement should exhibit convergent validity and discriminant validity to achieve construct validity featured in correlation matrixes.

Similarly, confirmatory factor analysis is utilized to validate market orientation, innovation and business performance components. Confirmatory factor analysis is used to validate all the scales in this study and to measure the extent to which the data fulfil the expected structure A subscale consisting of several highly correlated items has high construct validity. Only the factor loading scores with an acceptable value are deemed significant in describing the factor. Factor loadings greater

than 0.30 are considered to meet the minimal level, loadings of 0.40 are considered more important and if the loadings are 0.50 or greater, they are considered practically significant (Hair, Anderson, Tatham and Black ,1995) ; loadings in excess of 0.71 are considered excellent, 0.63 very good, 0.55 good, 0.45 fair and 0.32 poor (Comrey and Lee,1992) ; a cut-off point of 0.40 and greater was considered as significant factor loadings for this study (Tabachnick and Fidell,2001). Results of the CFA analyses are discussed in Chapter Four.

3.6.3.1 Face Validity

Face validity refers to the degree to which an instrument appears, at face value, to measure what it intends to measure. Unlike other forms of validity, face validity is not statistically tested but is based on subjective judgment—often by researchers or a panel of experts—to determine if the items seem appropriate and relevant (Haynes et al., 1995). Although considered the weakest form of validity, it is important for increasing respondent engagement and initial acceptance of a measurement instrument.

3.6.3.2 Content Validity

Content validity assesses whether a measurement instrument comprehensively captures the full scope of the construct being measured. This is typically established through expert judgment and literature review to ensure that no essential domain of the construct is omitted (Polit & Beck, 2006). It is particularly critical in early stages of scale development to avoid construct underrepresentation or irrelevance. A common method to quantify content validity is the Content Validity Index (CVI), where experts rate each item's relevance and clarity.

3.6.3.3 Construct Validity

Construct validity is the most important form of validity in social science research and refers to how well a test or instrument measures the theoretical construct it claims to measure (Cronbach & Meehl, 1955). This involves both convergent validity (the extent to which the construct correlates with other measures of the same construct) and discriminant validity (ensuring it does not correlate with unrelated constructs). Techniques such as exploratory and confirmatory factor analysis (EFA/CFA) are commonly used to evaluate construct validity in empirical studies (Hair et al., 2019).

3.6.4 Pilot Test

A pilot study involving the administration of the measures to a random sample of 50 owner /managers of the SMEs is run before the execution of the main study. The purposes of the pilot study are to first predict the potential respondents feedback on the length, format and content of the survey instrument. Secondly, to request participants 'critical feedback on the survey scales clarity, and finally to enhance the measurement scales reliability and validity. The prime purpose of the pilot study is to enhance the survey instrument face validity and to improve the scales of psychometric properties. The pilot study execution is in rhyme with Nunnally's (1978) recommendation that subjective assessments must be done on a survey instrument to ensure that the questions are comprehensible and that the scale items are representing the underlying constructs of interest.

The results of the pilot test are helpful in two areas. First, several improvements are made in the questions wording and scale items in accordance to suggestions made by individual respondents. Second, the results revealed the strengths and

weaknesses in the operationalisation of the variables and dimensions in the study. From 50 respondents, 34 business owners and executives who hold higher position in company responded the survey. Findings of pilot study postulates all variable have good score of reliability. The reliability scores for pilot study summarized as Table 3.4 below.

Table 3.4 : Reliability scores of pilot study

Variables	Items Number	Cronbach Alpha
Business Performance (BP)	5	0.91
Market Orientation (MO)	18	0.916
Competitors Orientation (COMP)	7	0.8
Customer Orientation (CUST)	6	0.832
Inter-functional Coordination (INTERF)	5	0.749
Innovation (INNO)	8	0.923
Networking	8	0.894

Note. N = 34.

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3.7 Data Collection Procedure

3.7.1 Data Collection and Survey Response

Upon the completion of the pilot study, a revised survey instrument was prepared and emailed to the selected SMEs obtained from the SME Corporation. The

respondents were owner/managers of the firms who are considered the most likely informants as they were responsible in the overall firms operation. The owner/managers in small firms often represent the entire firm's view (Chandler & Hanks, 1994; Brush & Vanderwerf, 1992) (Majid, 2010).

The online survey method was used such as Google Form or SurveyMonkey to reach the respondents faster. The questionnaires were distributed; accordingly, 100 questionnaires were sent on the first month from the start of the research, 50 questionnaires were circulated on the second month and the final 50 questionnaires were given out on the third month. The distribution was purposely staggered for three months because the researcher wanted to see the respondents' feedback and have a time to follow up since mail survey takes longer period to respond. (Sekaran, 2003).

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3.7.2 Data Cleaning and Screening

3.7.2.1 Missing case

Hair et al. (2006) suggested that missing data is the information which is not available for a case about whom other information is available. Missing data exists due to the errors in data collection or data entry or from the omission of answers by respondents (Hair et al., 2006, 2010; Pallant, 2007). Additionally, missing data also must be addressed, regardless of the reason, since it can also seriously bias the conclusions drawn from an empirical study (Byrne, 2010). Therefore, at this stage, any incomplete questionnaires received from the respondents should be judged as unusable and would be disposed (Hair et al., 2006, 2010).

Upon performing the screening of data in this study, frequency distribution and missing value analysis for every variable had been carried out to detect any missing

responses. According to this, all the returned questionnaires were found to be no missing response. The process of data screening was preceded to the next step which was the detection for outliers.

3.7.2.2 Outlier

Outlier refers to the data that has clearly deviated away from the others in sample (Grubbs, 1969). The presence of outliers can be simply caused by human error, such as during data entry (Tabachnick & Fidell, 2007), or because it comes from a different population (Grubbs, 1969). Outlier can also be part of the population itself, but it simply has more extreme value than normal distribution (Tabachnick & Fidell, 2007). Since human error is assured not to exist in this study, any presence of outliers was genuinely because of the latter reasons. This study employed the Mahalanobis distance (D2) method to detect outliers, as suggested by Tabachnick and Fidell (2007, 2013).

Mahalanobis D2 is a multidimensional version of a z-score, which measures the distance of a case from the centroid (multidimensional mean) of a distribution, given the covariance (multidimensional variance) of the distribution (Tabachnick & Fidell, 2007, 2013). Hence, in this study, outliers were examined through Mahalanobis distance (D2) of multidimensional mean. The result showed that there is no extreme case of outlier detected in this dataset.

3.7.2.3 Data Normality

Data normality is the most fundamental assumption in multivariate analysis. It is referred to as the shape of the data distribution for an individual metric variable and its correspondence to the normal distribution as the benchmark for statistical methods (Hair et al., 2010). Normality also refers to a description of a symmetrical, bell-shaped

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curve, which has the greatest frequency of scores in the middle with smaller frequencies towards the extremes. Normality can be assessed to some extent by obtaining skewness and kurtosis values (Pallant, 2013). There are also other techniques in SPSS to run the normality test. If the variation from the normal distribution is sufficiently large, all resulting statistical tests were deemed invalid since normality is required to use the F- and t-statistics (Hair et al., 2010). Normality is an issue as it is one of the basic assumptions required for the purpose of carrying out structural equation modelling (SEM) analysis (Byrne, 2010). However, the normality problem is less of an issue when using PLS-SEM because PLS-SEM applies the bootstrapping method for obtaining the significant relationship from a model dataset (Hair et al., 2013). PLS-SEM does not require any normal-distributed input data (Urbach & Ahlemann, 2010). This is an added advantage using PLS-SEM.

3.7.3 Data Analysis

3.7.3.1 Partial Least Squares (PLS) Technique

The PLS-SEM technique is described by Wold (1982) as a second generation structural equation modelling that performs effectively with structural equation models containing latent variables and a series of cause-and-effect relations (Latan & Ramli, 2013; Hair, Sarstedt, Hopkins, & Kuppelwieser, 2014). Statistical model development and prediction often use this approach for its effectiveness and flexibility (Hair et al., 2017; Henseler et al., 2016; Kwong & Wong, 2013). The present study utilizes the PLS-SEM for several reasons.

Firstly, data in a majority of social science studies often have issues of normality (Osborn, 2010) and the PLS path modelling does not need normal data; in other words,

PLS views non-normal data just as effectively as normal data. Overall, this study chooses to use the PLS path modelling to steer clear of normality issues that may occur during the data analysis (Chin, 2010).

Secondly, PLS-SEM is capable of providing meaningful and valid outcomes, according to Bollen (1989), while other analysis methods like SPSS frequently provide ambiguous conclusions that would call for other analyses. Moreover, SEM is one of the top effective statistical tools used in the field of social and behavioural sciences that is capable of the simultaneous examination of multiple relationships (Latan & Ramli, 2013; Tabachnick & Fidel, 2014; Hair et al., 2014).

Thirdly, Hulland (1999) explained that the PLS path modelling fits real world applications and is beneficial for complex models. Its assumptions of soft modelling, such as flexibility in developing and validating complex models, provide its strength in estimating complex models (Hair, Ringle, & Sarstedt, 2013; Latan & Ramli, 2013). In the current study, the relationship among four models within the structural model is examined and PLS-SEM is employed for accurate prediction.

Fourthly, structural equation models have been shown to be superior in estimating as compared to regressions, particularly, in mediation assessments (Preacher & Hayes, 2004; Hair et al., 2013). Its strength comes from providing measurement errors and providing accurate mediating effect estimates (Nitzl, Roldan, & Cepeda, 2016).

Hence, the present study uses the SmartPLS path modelling to confirm measurement and structural models. A measurement model explains the reliability and validity of the constructs, while a structural model is used to carry out the bivariate correlation analysis as well as regressions analysis simultaneously to clarify relations and their effects among constructs under study (Latan & Ramli, 2013; Henseler, Ringle &

Sarstedt, 2015). More importantly, the PLS algorithm and bootstrapping method (Preacher & Hayes, 2004; 2008), determine the mediating effects of learning orientation on the organisational characteristics-employee entrepreneurial orientation and knowledge management enabler relationship.

3.7.3.2 Evaluate PLS Models

Hair et al. (2013) proposed two primary methodological elements in the evaluation of PLS models:

1. Evaluation of Measurement Model – The evaluation of reflective measurement models is based on their internal consistency, construct unidimensionality, convergent validity, and discriminant validity as summarised below:

    a) Construct Validity – where indicator loadings have to be higher than 0.70. It is also referred to as exploratory factor analysis (EFA).

    b) Convergent Validity – where the average variance extracted (AVE) should have a value greater than 0.50 (Hair et al., 2014).

    c) Discriminant Validity – where the AVE of every latent construct should have a value greater than the construct's greater squared correlation with another latent construct as proposed by Fornell-Larcker (1981). Moreover, the loadings of the indicator have to be greater as compared to all of its cross loadings. However, the heterotrait-monotrait ratio (HTMT) of the correlation is considered (Henseler et al., 2015).

d) Internal Consistency Reliability – Cronbach's alpha is considered as the lower bound of the internal consistency reliability and composite reliability is considered as the upper bound of the true reliability, which is unknown. The two measures have to be higher than 0.70 (Cronbach & Meehl, 1955; Hair et al., 2014).

2. Evaluation of the Structural Model – the primary criteria for evaluating the structural model are listed as follows:

a) R Square (R^2) – R square values of 0.75, 0.50, or 0.25 are considered as substantial, moderate, and weak, respectively, in the field of marketing research studies (Henseler; Ringle & Sinkovics, 2009; Chin, 2010; Hair et al., 2011).

b) Effective Size (f^2) – the impact of the effective sizes of the specific latent variables upon the dependent latent variables are obtained with the help of an f^2 analysis. According to MacKinnon and Fairchild (2010), f^2 values of 0.10, 0.30, and 0.50 are considered as small, medium, and large effect sizes of predictive variables, respectively (Cohen, 1988).

c) Predictive Relevance of the Model – According to Tenenhaus, Esposito, Chatelin and Lauro (2005), the model's quality can be examined through the use of a blindfolding procedure in order to obtain Q^2=1-SSE/SSO. A positive Q^2 indicates that the model

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possesses predictive validity and a negative one indicates the absence of predictive validity (Ringle, Wende, & Becker, 2015).

d) Goodness of Fit (GoF) of the Model – GoF is defined as PLS-SEM's sole measure of goodness of fit. Such a measure is the endogenous variables' geometric mean of AVE and average R^2. According to Latan and Ghozali, (2012), goodness of fit values of 0.10, 0.25, and 0.36 are considered as small, medium, and large, respectively (Tenenhaus et al., 2005; Henseler & Sarstedt, 2013).

e) Hypothesis Testing – the path coefficients' significance is assessed with the help of the bootstrapping method (Preacher & Hayes, 2004; 2008), where the least number of bootstrap samples is 5,000, and it is important that the number of cases equalises the number of observations in the initial sample. The critical t-values for three-tailed tests are provided as follows: 1.65 at 0.10 significance level, 1.96 at 0.05 significance level, and 2.58 at 0.01 significance level (Helm, Eggert, & Garnefeld, 2009; Hair et al., 2014)

In this study, confirmatory factor analysis is accomplished by using exogenous and endogenous variables. There are three endogenous variables; innovation, market orientation and business performance and three exogenous variables; competitors orientation (COMP), customer orientation (CUST) and interfunctional coordination (INTERF), which will be the variable indicators in measuring market orientation (MO).

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3.8 Chapter Summary

This Chapter Three examined the relationships between innovation, market orientation, marketing and business performance of the SMEs. The research design, sampling procedure, instrumentation, validity and reliability, data collection and data analyses were presented. The methodologies adopted from Cosh et al. (1999), Lipparini and Sobrero (1994), Han et al. (1998), Narver and Slater (1990) were applied. Finally, analyses rigorously conducted in this chapter were further discussed in the following Chapter Four.

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CHAPTER FOUR

ANALYSIS AND FINDINGS

4.1 Chapter Overview

The results are discussed here accordingly. It contains relevant analyses and results which were both descriptive and inferential analyses–hypothesis testing on correlation and effects between market orientation (competition orientation, customer orientation, inter-functional coordination), innovation and business performance as well as mediating variable, which is networking, as explained in the previous chapters. Data was analysed using Smart PLS 3.0.

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4.2 Response Rate

The 84 respondents represented 42 percent out of 200 questionnaires sent. However, 11 of the responses were discarded due to incomplete submission, where more than 25% of the questions were left unanswered (Cavana et al., 2000). Only 73 samples were deemed usable which resulted in an effective response rate of 36.5 percent. These data were analysed and keyed-in using IBM Statistical Package for Social Sciences version 21 (IBM SPSS ver. 21).

4.3 Demographic Profile of Respondents

The summary of demographic profiles showed the gender, age, education, type of business, employee number and position. The respondents were business owner or management employees in company. The employees comprised of senior management, management, manager, senior executive, executive and non-executive. It was essential in research to measure respondent's characteristics and to check the internal consistency of all variables.

There were 46 female respondents who contributed to more than half of the percentage which was 63.0%, while male respondents were 27 which was about 27.0% of the total gender. Based on age distribution, the highest respondents were in ages of 30 to 39 years at 28.8%. The second group of respondents were of age 40 to 49 years old with a percentage of 26.0%, followed by ages between 25 to 29 years old (24.7%) and above 50 years old (20.5%).

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Under the education background, the higher respondents were the bachelor holders which contributed to 52.1%, followed by respondents with master's degree at 28.8%. The next ranking was the respondents who possessed certificate/diploma at 13.7%. The fourth ranking was from the PMR/SPM certificate respondents with a percentage of 9.6% and lastly was respondents who have Doctorate's at 4.1%. Additionally, there are four major type of business which are engineering, procurement, construction and commissioning, general supply and trading, ICT hardware and/or software, business process outsourcing and others. The results appeared that majority of respondent were from commissioning (30.1%) and ICT hardware and/or software (34.2%) and engineering, procurement, construction.

According to findings of number of employees, most business have between 30 to 75 employees (35.6%), 20 businesses have employees between 5 to 30 employees (27.4%), 8 businesses have employees less than 5 (11.0%) and 6 businesses have employees more than 75 (8.2%). Meanwhile, majority of respondents are manager in charge who knows the overall firm operation (75.3%) and only 18 respondents are owner of the business (24.7%). Table 4.1 below represent the demographic profile of respondents.

Table 4.1 : *The Demographic Profile of Respondent*

Particulars	**Categories**	**Frequency**	**Percentage**
Gender	Male	46	63
	Female	27	27
Age	25 to 29 years old	18	24.7
	30 to 39 years old	21	28.8
	40 to 49 years old	19	26
	50 years old and above	15	20.5
Education	SPM/MCE	7	9.6
	Diploma	10	13.7
	Bachelors	38	52.1
	Masters	15	20.5
	PhD	3	4.1
Type of Business	Engineering, Procurement, Construction and Commissioning	22	30.1
	General Supply and Trading	9	12.3

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	ICT Hardware and/or Software	25	34.2
	Business Process Outsourcing	6	8.2
	others	11	15.1
Employees Number	less than 5	8	11
	5 to 30	20	27.4
	30 to 75	26	35.6
	more than 75	6	8.2
	others	13	17.8
Position	Owner	18	24.7
	Manager in charge who knows the overall firm operation	55	75.3
Total		73	100

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4.4 Descriptive Statistics

Descriptive statistics was used to display and understand specific set of data by giving the summaries of data. Descriptive statistics is useful and is widely used to provide information. An amount of 73 usable cases were obtained from the survey. They were measured by the five-point Likert scale. Table 4.2 showed means that ranged from 3.61 to 4.04. Hair et al. (2010) mentioned that mean values can be categorised into three levels: low = 1.00 to 2.25; moderate = 2.26 to 3.75 and high = 3.76 to 5.00. Descriptive results indicated that independent variables, dependent variable and mediator were at a moderate and high level on the point scale. The standard deviations

produced a good data at lower than one (1). Sekaran (2003) concurred the same. The data analysis of variables were as shown below.

Table 4.2 : *Descriptive Analysis of the Variables*

Construct	Mean	Standard Deviation
Innovation	4.01	0.67
Market Orientation	3.68	0.79
Networking	3.61	0.8
Business Performance	4.04	0.67

4.5 PLS-SEM Path Modelling

Partial least squares structural equation Modelling (PLS-SEM) was used for the measurements and assessments models. There were several advantages. PLS-SEM was able to accept and interacted very well with smaller number of sample size, no assumption on the non-normality data, capable to run data measurement with both reflective and formative items and could also handle single-item constructs and implies no identification problems (Hair et al., 2014a, 2014b). PLS-SEM was also known to be efficient in estimating parameters which resulted in the outcome of high statistical power than the CB-SEM (Hair et al., 2014a, 2014b). Thus, PLS-SEM received the most and highest ranking of popularity and favourable approach to researchers from various disciplines.

In addition, PLS path modelling provided a more accurate estimates for mediating and moderating effects (Chin et al., 2003; Helm et al., 2010; Henseler & Fassoft, 2010).

According to Wetzels et al. (2009) in Akter et al. (2013), this approach has allowed the deriveation of the (indirect) effects of lower-order constructs or dimensions, on outcomes of the higher-order construct.

This study employed PLS-SEM due to the complex model of reflective constructs. It was also beneficial to use the PLS-SEM as the more perfect statistical technique as compared to covariance based structural equation modelling (CB-SEM) or others. Therefore, PLS-SEM was used for the assessment of the measurement model and the evaluation of the structural model. The study applied a two-step process of PLS path model assessment as suggested by Henseler et al. (2009).

4.5.1 Assessment of the Measurement Model

Partial least squares structural equation Modelling (PLS-SEM) was used for the measurements and assessments models. There were several advantages. PLS-SEM was able to accept and interacted very well with smaller number of sample size, no assumption on the non-normality data, capable to run data measurement with both reflective and formative items and could also handle single-item constructs and implies no identification problems (Hair et al., 2014a, 2014b). PLS-SEM was also known to be efficient in estimating parameters which resulted in the outcome of high statistical power than the CB-SEM (Hair et al., 2014a, 2014b). Thus, PLS-SEM received the most and highest ranking of popularity and favourable approach to researchers from various disciplines.

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the deriveation of the (indirect) effects of lower-order constructs or dimensions, on outcomes of the higher-order construct.

This study employed PLS-SEM due to the complex model of reflective constructs. It was also beneficial to use the PLS-SEM as the more perfect statistical technique as compared to covariance based structural equation modelling (CB-SEM) or others. Therefore, PLS-SEM was used for the assessment of the measurement model and the evaluation of the structural model. The study applied a two-step process of PLS path model assessment as suggested by Henseler et al. (2009).

4.5.1.1 Individual Item Reliability of Reflective Measurement Models

For the purpose of determining the individual item reliability and other measurement model assessment, this study applied PLS algorithm (Hair et al., 2014a) and was illustrated in Figure 4.1. The individual item or factor reliability of reflective constructs was assessed using the outer loadings of each construct's indicators (Hair et al., 2014a). The higher outer loading on a construct indicates that the associated indicators have much in common, which was captured by the construct (Hair et al., 2014a).

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According to Hair et al. (2014a), a common rule of thumb that is standardised, an indicator with 0.70 outer loading is acceptable and reliable for the established developed scale. However, it was also stated that rather than automatically eliminating indicators with their outer loading of below 0.70, researchers should be concern on the composite reliability, as well as the construct's content validity. As such, to remain the indicators, the outer loadings must be between 0.40 and 0.70 and it should be considered for removal only if the deletion leads to the increment of the composite reliability (CR) and average variance extracted (AVE) value.

Based on Hair et al., (2014) common rule of thumb, out of the 53 items measuring seven (7) reflective constructs in this study, 16 items were deleted leaving the study with the remaining items which were considered acceptable for further analyses of PLS-SEM (refer Table 4.3-Results summary for reliability and validity of the constructs). Assessment of reflective measurement model includes reliability to evaluate internal consistency, individual indicator reliability and average variance extracted (AVE) to evaluate convergent validity. Following this, the Fornell-Larcker criterion and cross-loadings were used to assess discriminant validity. The following section addresses each criterion for the assessment of reflective measurement models.

4.5.1.2 Measurement Model

As mentioned in chapter three, this study employed "two-stage approach" as suggested by Ringle, Sarstedt, & Straub, (2012). Figure 4.1 illustrated Stage One of the measurement model assessment, while Figure 4.2 illustrated the Stage Two assessment. Figure 4.1 illustrated the first stage of measurement model assessment, whereby there are 4 latent variables with one latent have three dimensions (Innovation, Networking, and Market Orientation). First order constructs represent the dimensions of second order constructs. The dimensions for market orientation are customer orientation, customer satisfaction and inter-function coordination. Meanwhile, Figure 4.2 illustrated the second stage of measurement model assessment, whereby there were only four latent variables (i.e.Business Performance, Innovation, Networking, and Market Orientation). Table 4.3 presents these values in detailed.

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Figure 4.1 – Measurement Model (stage one)

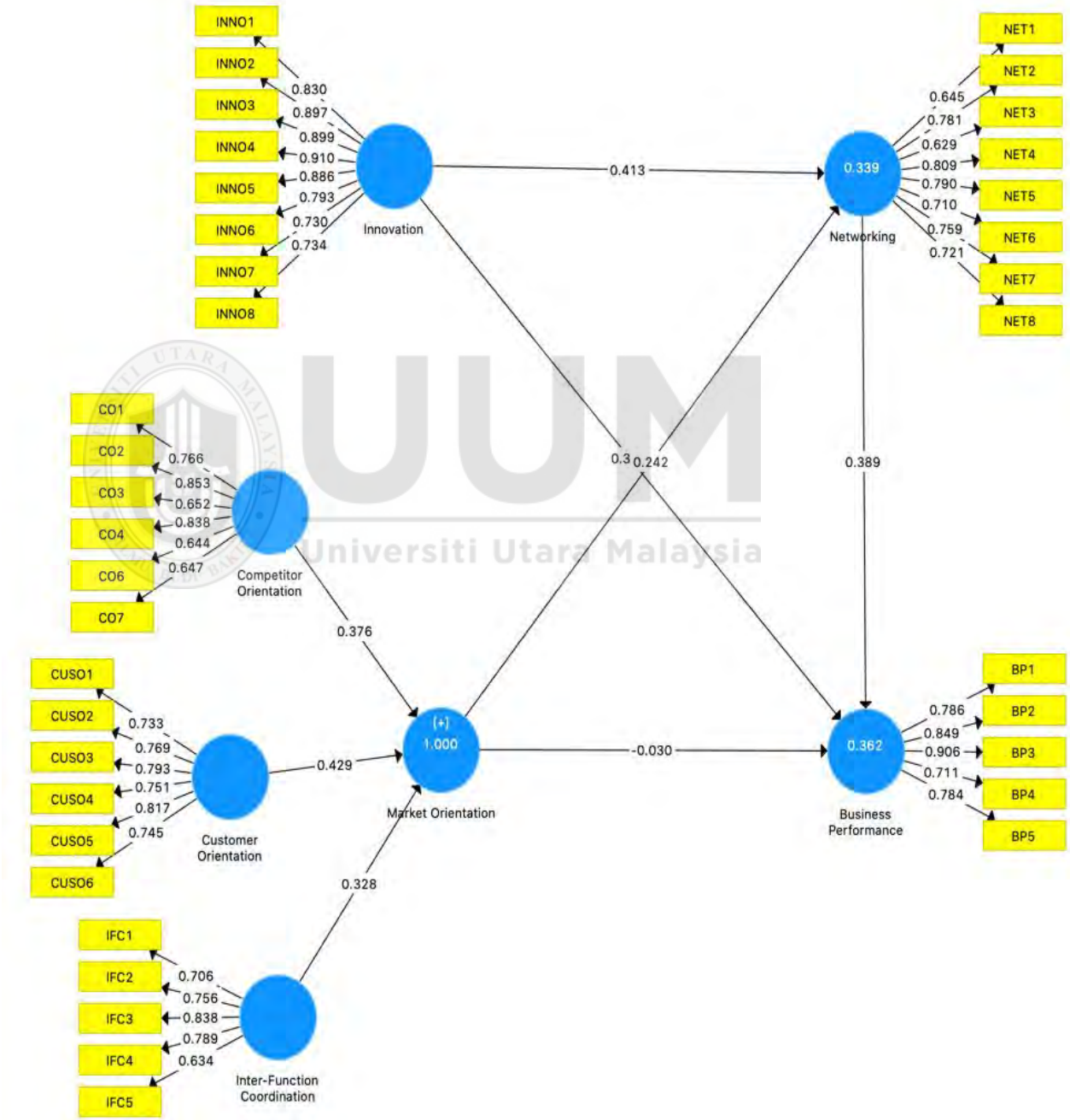

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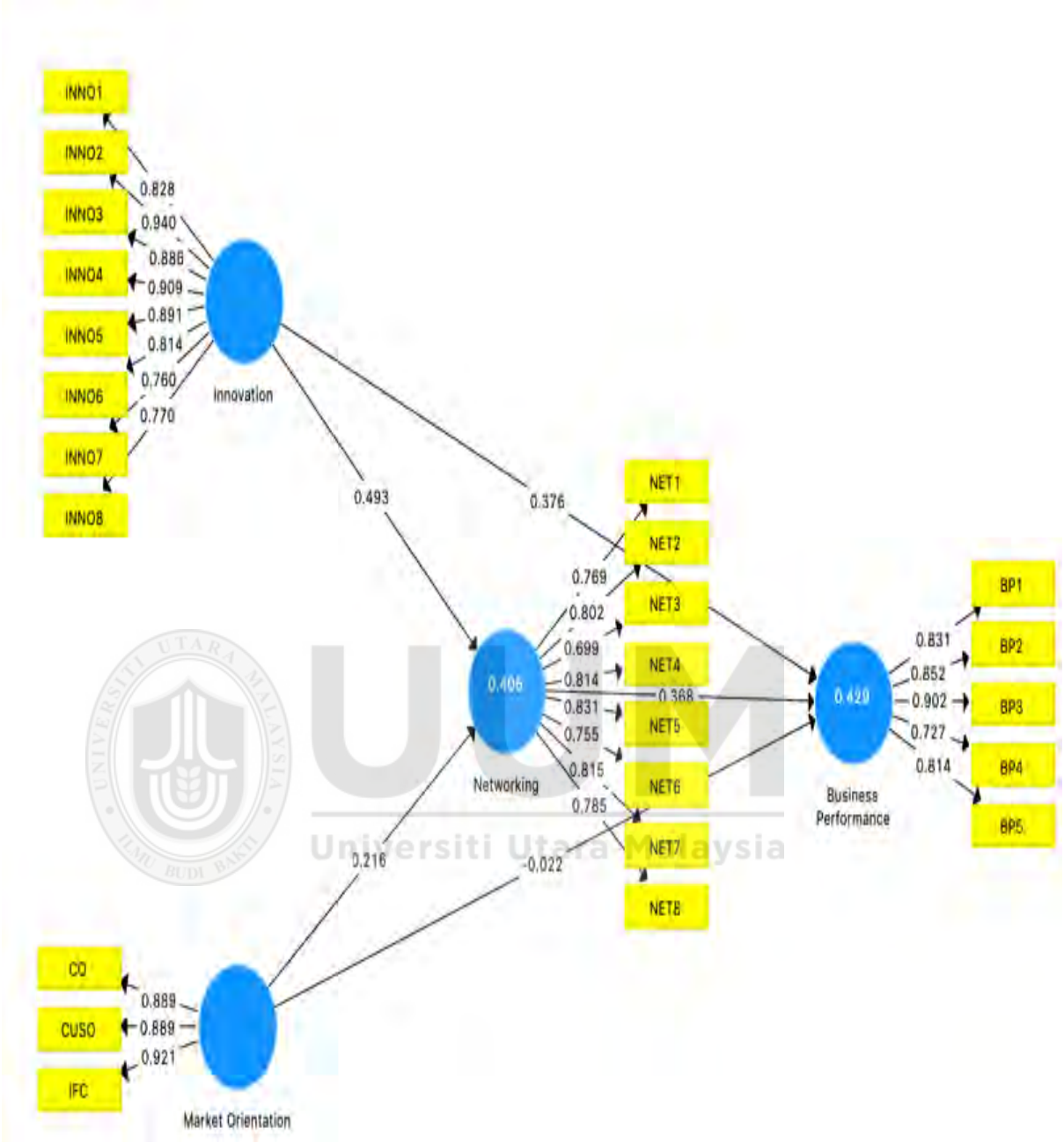
Figure 4. 2 *Measurement Model (stage two)*



Note. For better visual, see Appendix 4

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Table 4.3 : Measurement Model of Online Re-patronage Intention (n=73)

Construct			Composite Reliability	AVE			
1st Order	**2nd Order**	**Items**	**loading**	**1st Order**	**2nd Order**	**1st Order**	**2nd Order**
Business Performance		BP1	0.786		0.904		0.656
		BP2	0.849				
		BP3	0.906				
		BP4	0.711				
		BP5	0.784				
Networking		NET 1	0.645		0.902		0.537
		NET 2	0.781				
		NET 3	0.629				
		NET 4	0.809				
		NET 5	0.79				
		NET 6	0.71				
		NET 7	0.759				
		NET 8	0.721				
Innovation		INNO 1	0.83		0.949		0.702
		INNO 2	0.897				
		INNO 3	0.899				
		INNO 4	0.91				
		INNO 5	0.886				

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		INNO 6	0.793				
		INNO 7	0.73				
		INNO 8	0.83				
Market Orientation	Competitor Orientation	CO 1	0.766	0.877	0.915	0.546	0.781
		CO 2	0.853				
		CO 4	0.652				
		CO 5	0.838				
		CO 6	0.644				
		CO 7	0.647				
	Customer Orientation	CUSO 1	0.733	0.986		0.591	
		CUSO 2	0.769				
		CUSO 3	0.793				
		CUSO 4	0.751				
		CUSO 5	0.817				
		CUSO 6	0.745				
	Inter-Function Coordination	IFC 1	0.706	0.863		0.559	
		IFC 2	0.756				
		IFC 3	0.838				
		IFC 4	0.789				
		IFC 5	0.634				

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Notes: AVE=Average Variance Extracted (summation of the square of the factor loadings) / {(summation of the square of the factor loadings)} / {(summation of the error variances)}; CR= Composite Reliability (square of the summation of the factor loadings) / {(square of the summation of the factor loadings)} / {(square of the summation of the error variances)}.

4.5.1.3 Internal Consistency Reliability of Reflective Models

The first criterion evaluated was internal consistency reliability. The traditional criterion for internal consistency is Cronbach's alpha, which estimated the reliability based on intercorrelations of the observed indicator variables. Cronbach's alpha assumed that all indicators were equally reliable (i.e. all the indicators have equal outer loadings on the construct). Cronbach's alpha is sensitive to the number of items in the scale and generally tends to underestimate the internal consistency reliability. As such, it may be applied as a conservative measure of internal consistency reliability. However, due to Cronbach alpha's limitation in the population, it was more practical to apply a different measure of internal consistency reliability, which is referred as composite reliability (CR) (Hair et al., 2014a).

The composite reliability takes into account the different outer loadings of the indicator variables. The CR varies between 0 and 1, with higher values indicating higher levels of reliability. Commonly, the CR values of 0.60 to 0.70 were acceptable in exploratory research, while in more advanced stages of research, values between 0.70 and 0.90 can be regarded as satisfactory (Nunnally & Bernstein, 1994). In contrast, composite reliability values below 0.60 indicated a lack of internal consistency reliability (Hair et al., 2014a).

Results of composite reliability postulated in this study showed a satisfactory value of composite reliability. The composite reliability coefficient of each latent constructs

ranged from 0.863 to 0.986, with each exceeding the minimum acceptable level of 0.70, suggesting satisfactory internal consistency reliability of the measures used in this study (Hair et al., 2014a).

4.5.1.4 Convergent Validity of Reflective Models

Convergent validity refers to the extent which a measure correlates positively with alternative measures of the same constructs (Hair et al., 2014a). To establish convergent validity, the outer loadings of the indicators, as well as the average variance extracted (AVE) should be considered. This value was referred as the grand mean value of the squared loadings of the indicators associated with a construct. Hence, the AVE is equivalent to the communality of a construct. High outer loadings on a construct indicated that the associated indicators have much in common, which was captured by the constructs. In order to achieve the adequate convergent validity, Chin (1998) recommended that the AVE of each latent construct should be 0.5 or higher.

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Based on Chin (1998), the AVE values (see Table 4.3) exhibited high loadings (>0.5) indicating that on average, the constructs explained more than half of the variance of its indicators. However, for an AVE of less than 0.50, it indicated that on average, more error remained in the items than the variance as explained by the constructs. The results of this investigation showed that this study's measurement model has demonstrated an adequate convergent validity.

4.5.1.5 Discriminant Validity of Reflective Model

Discriminant validity refers to the extent to which a construct is truly distinct from other constructs by empirical standards (Hair et al., 2014a). Establishing discriminant validity implied that a construct is unique and the captured phenomena were not

represented by other constructs in the model. Hair et al. (2014a) proposed two measures of discriminant validity.

The first assessment of discriminant validity is to examine the indicators' loadings with respect to all construct correlations. For the reflective latent variable to have discriminant validity using cross-loadings method, the indicator's outer loadings should be greater than all of its loadings on other constructs (i.e. the cross-loadings) (Hair et al., 2014a). This criterion was generally considered rather liberal in terms of establishing discriminant validity (Hair et al., 2011). The assessment of the discriminant validity based on the cross-loadings criterion is presented in Table 4.4 and Table 4.5.

Table 4.4 below showed the cross loading of items. Cross loadings refer to an indicator's (i.e. item's) correlations with other constructs in the first stage model. In order to establish the discriminant validity, indicator's (i.e. item's) outer loading on the associated construct must be greater that any of its cross loadings on other construct (Hair Jr et al., 2014, 2017). Meanwhile, Table 4.5 portray indicator's (i.e. item's) correlations with other constructs in the second stage model. As can be seen in Table 4.4 and Table 4.5, the outer loadings always exceeded the cross loadings, thus indicating that discriminant validity between all constructs in the model has already been established.

Table 4.4 Loadings and cross loadings 1st stage

	BP	**CO**	**CUSO**	**IFC**	**INNO**	**NET**
BP1	0.786	0.21	0.345	0.227	0.325	0.454
BP2	0.849	0.23	0.456	0.345	0.418	0.407

BP3	0.906	0.26	0.33	0.298	0.477	0.505
BP4	0.711	0.137	0.131	0.191	0.226	0.337
BP5	0.784	0.056	0.104	0.125	0.532	0.471
CO1	0.214	0.766	0.398	0.529	0.497	0.289
CO1	0.214	0.766	0.398	0.529	0.497	0.289
CO2	0.143	0.853	0.516	0.666	0.423	0.229
CO2	0.143	0.853	0.516	0.666	0.423	0.229
CO3	0.24	0.652	0.368	0.347	0.254	0.375
CO3	0.24	0.652	0.368	0.347	0.254	0.375
CO4	0.17	0.838	0.442	0.521	0.509	0.359
CO4	0.17	0.838	0.442	0.521	0.509	0.359
CO6	0.112	0.644	0.417	0.466	0.273	0.361
CO6	0.112	0.644	0.417	0.466	0.273	0.361
CO7	0.107	0.647	0.507	0.524	0.322	0.264
CO7	0.107	0.647	0.507	0.524	0.322	0.264
CUSO1	0.25	0.363	0.733	0.489	0.249	0.363
CUSO1	0.25	0.363	0.733	0.489	0.249	0.363
CUSO2	0.297	0.589	0.769	0.538	0.57	0.431
CUSO2	0.297	0.589	0.769	0.538	0.57	0.431
CUSO3	0.236	0.504	0.793	0.592	0.295	0.284
CUSO3	0.236	0.504	0.793	0.592	0.295	0.284
CUSO4	0.15	0.432	0.751	0.494	0.226	0.223
CUSO4	0.15	0.432	0.751	0.494	0.226	0.223
CUSO5	0.273	0.468	0.817	0.613	0.383	0.353
CUSO5	0.273	0.468	0.817	0.613	0.383	0.353
CUSO6	0.343	0.395	0.745	0.555	0.403	0.273
CUSO6	0.343	0.395	0.745	0.555	0.403	0.273
IFC1	0.196	0.541	0.509	0.706	0.336	0.372
IFC1	0.196	0.541	0.509	0.706	0.336	0.372
IFC2	0.242	0.566	0.496	0.756	0.373	0.267
IFC2	0.242	0.566	0.496	0.756	0.373	0.267
IFC3	0.242	0.607	0.511	0.838	0.325	0.242
IFC3	0.242	0.607	0.511	0.838	0.325	0.242
IFC4	0.262	0.469	0.63	0.789	0.396	0.34
IFC4	0.262	0.469	0.63	0.789	0.396	0.34
IFC5	0.132	0.424	0.522	0.634	0.293	0.245
IFC5	0.132	0.424	0.522	0.634	0.293	0.245
INNO1	0.443	0.508	0.398	0.454	0.83	0.44
INNO2	0.371	0.52	0.386	0.438	0.897	0.368

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INNO3	0.476	0.5	0.419	0.423	0.899	0.505
INNO4	0.501	0.511	0.421	0.449	0.91	0.465
INNO5	0.469	0.444	0.448	0.47	0.886	0.463
INNO6	0.317	0.467	0.512	0.405	0.793	0.347
INNO7	0.242	0.367	0.39	0.351	0.73	0.351
INNO8	0.476	0.221	0.22	0.149	0.734	0.606
NET1	0.336	0.287	0.261	0.261	0.305	0.645
NET2	0.475	0.4	0.268	0.361	0.407	0.781
NET3	0.31	0.221	0.249	0.308	0.167	0.629
NET4	0.422	0.29	0.271	0.245	0.486	0.809
NET5	0.459	0.396	0.321	0.375	0.606	0.79
NET6	0.37	0.254	0.326	0.146	0.383	0.71
NET7	0.39	0.175	0.341	0.212	0.442	0.759
NET8	0.4	0.367	0.437	0.384	0.267	0.721

Note: BP- Business Performance, CO-Competitor's Orientation, CUSO-Customer Orienttion, IFC- Inter-Function Coordination, INNO-Innovation, NET- Networking. Highlighted values are loadings for items that are above the recommend value of 0.5.

Table 4.5 : Loadings and cross loadings 2nd stage

	BP	**INNO**	**MO**	**NET**
BP1	0.786	0.325	0.299	0.454
BP2	0.849	0.418	0.395	0.407
BP3	0.906	0.477	0.337	0.505
BP4	0.711	0.226	0.172	0.337
BP5	0.784	0.532	0.109	0.472
INNO1	0.443	0.83	0.51	0.44

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INNO2	0.371	0.897	0.503	0.368
INNO3	0.476	0.899	0.505	0.505
INNO4	0.501	0.91	0.518	0.465
INNO5	0.469	0.886	0.513	0.463
INNO6	0.317	0.793	0.524	0.348
INNO7	0.242	0.731	0.418	0.351
INNO8	0.476	0.734	0.223	0.606
Competitor Orientation	0.219	0.522	0.858	0.415
Customer Orientation	0.337	0.467	0.884	0.42
Inter-Function Coordination	0.291	0.462	0.909	0.392
NET1	0.336	0.305	0.305	0.645
NET2	0.475	0.407	0.384	0.781
NET3	0.31	0.167	0.293	0.628
NET4	0.422	0.486	0.303	0.81
NET5	0.459	0.606	0.409	0.79
NET6	0.37	0.383	0.277	0.71
NET7	0.39	0.442	0.279	0.759
NET8	0.4	0.267	0.45	0.721

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Note: BP- Business Performance, CO-Competitor's Orientation, CUSO-Customer Orienttion, IFC- Inter-Function Coordination, INNO-Innovation, NET- Networking. Highlighted values are loadings for items that are above the recommend value of 0.5.

Next, to examine the second assessment of measurement model's discriminant validity, the Fornell-Larcker criterion was applied. According to this method, the square root of the AVE values was compared with the latent variable correlations (Fornell & Larcker, 1981). Generally, the square root of each reflective construct's AVE should be greater than its highest correlation with any other construct. The logic behind this method is based on the idea that a construct shared more variance with its associated indicators than with any other latent constructs of the model (Hair et al., 2014a). From the results, all square roots of AVE exceeded the off-diagonal elements in their corresponding row and column. Table 4.6 represented the square roots of the AVE and non-bolded values represented the intercorrelation value between constructs.

Table 4.6 : Measurement Model: Discriminant Validity (Fornell-Larcker Criterion)

	BP	**INNO**	**MO**	**NET**
Business Performance	0.81			
Innovation	0.509	0.838		
Market Orientation	0.322	0.546	0.884	
Networking	0.546	0.546	0.463	0.733

Note: BP- Business Performance, INNO-Innovation, NET- Networking.

Based on the results presented in Table 4.6, all square roots of AVEs (bolded) were larger than inter-constructs correlations, indicating that the variance explained by the

respective construct was larger than the measurement error variance (Fornell & Bookstein, 1982). Hence, this result confirmed that Fornell and Larcker's criterion was met. Therefore, all the latent constructs of this study had their discriminant validity using both methods.

4.5.1.6 Multicollinearity Test

The multicollinearity of this study was examined by the VIF. Hair et al. (2016) and Kline (2015) suggested the VIF should be between 0.1 and less than 10. The findings presented that the VIF values of all the constructs were between those figures. According to O'Brien (2007) and Rogerson (2001), the VIF should be lower than 5.0. This was depicted in the study as shown in Table 4.7.

Table 4.7 : Multicollinearity Assessment

Construct	Inner VIF Values
Business Performance	
Innovation	1.688
Market Orientation	1.508
Networking	1.508

With that, all the tests which include internal consistency, convergent validity, discriminant validity and multicollinearity have been fulfilled and presented.

4.5.2 Assessment of Structural Model

Since the measurement model has been tested and the validity and reliability conducted, the next test was to assess the model's predictive abilities and the

construct's relationships. The direct paths and moderation analysis are presented in the next section. In this part of the findings, how well the empirical data supports the theory and if the theory has been empirically confirmed were decided.

4.5.2.1 Assessment of Structural Model of Direct Determinants on Business Performance

The results of the structural model based on the direct relationships between the predictors and criterion variables of this study were illustrated in Table 4.8 below. The results were interpreted based on the coefficients (Std. Beta) for the path relationship, the standard error (SE) and t-value (t-statistics). The popular critical (theoretical) t-values for two-tailed test are 1.65 (<0.10), 1.96 (<0.05) or 2.57 (<0.01) (Hair et al., 2014a). The hypotheses for direct relationship were as below:

- H1: There is a significant relationship between innovation and SME performance.
- H2: There is a significant relationship between market orientation and SME performance
- H3: There is a significant relationship between innovation and networking.
- H4: There is a significant relationship between market orientation and networking

Results of direct relationship in Table 4.8 below indicated that from the four hypotheses, only one hypothesis was found to be not significant with business performance. Market Orientation was not significantly related to business performance in oil and gas industry (ß=-0.028, t=0.198, p>0.01). While innovation was significantly related to business performance (ß=0.313, t=2.531, p<0.05). Networking was

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significantly related to business performance (ß=0.388, t=3.496, p<0.01) and innovation was significantly related to business performance (ß=0.418, t=2.849, p<0.01).

Table 4.8 : Structural Model: Test of Significance for direct relationship

Hypothesis	Relationship	Direct Effect (ß)	Standard Deviation	T-Value	P-Value	Result
H1	Innovation -> Business Performance	0.313	0.124	2.531	0.006	Significant
H2	Market Orientation -> Business Performance	-0.028	0.143	0.198	0.422	Not Significant
H3	Networking -> Business Performance	0.388	0.111	3.496	0	Significant
H4	Innovation -> Networking	0.418	0.147	2.849	0.002	Significant

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4.5.2.2 Mediating effect of Networking

Mediating tests are conducted on networking. In this study, it is found that networking only mediates the relationship between innovation and business performance (ß=0.162, t=2.194, p<0.01). Hence, we accepted H5. Meanwhile, networking is found not to mediate the relationship between the market orientation and business performance (ß=0.091, t=1.329, p>0.01). Thus, we reject H6. The results are presented in Table 4.9.

Table 4.9 : Structural Model: Test of Significance for indirect relationship

	Beta	Standard Deviation	T Values	P Values	Status
H5 Innovation -> Networking -> Business Performance	0.162	0.074	2.194	0.014	Mediate
H6 Market Orientation -> Networking -> Business Performance	0.091	0.069	1.329	0.092	Not Mediate

Note: **:p<0.01, t>1.96.

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4.5.2.3 Assessment of Variance Explained in the Endogenous Latent Variables

Another important criterion for assessing the structural model in PLS-SEM is the R-squared value, which is also known as the coefficient of determination (Hair et al., 2011, Hair et al., 2012a; Henseler et al., 2009). The R-square value represents the exogenous latent variables' combined effects on the endogenous latent variable. Since the coefficient is the squared correlation of actual and predicted values, it also

represents the amount of variance in the endogenous constructs explained by all the exogenous constructs linked to it. The R^2 value ranges from 0 to 1 with higher levels indicating higher levels of predictive accuracy. Even though the acceptable level of R^2 value depended on the research discipline (Hair et al., 2014a), Falk and Miller (1992) proposed R-square value of 0.10 as a minimum acceptable level. Chin (1998) suggested that the R-square values of 0.67, 0.33 and 0.19 in PLS-SEM can be considered as substantial, moderate and weak, respectively. Table 4.10 illustrated the R-square values of one endogenous latent variable.

Table 4.10 : Coefficient of Determination for Direct Relationships: R-Square.

Variance explained in the Endogenous Latent Variables	
Latent Variables	**Variance Explained (R^2)**
Business performance	0.429

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As indicated in Table 4.10, the research model found a 42.9.0% of the total variance in business performance. Thus, based on Falk and Miller's (1992) and Chin's (1998) suggestions, R^2 value as explained by these latent variables on the target endogenous latent variable (i.e. business performance) was moderate.

4.5.2.4 Assessment of the Effect Size (f^2)

Effect size (f^2) is a measure applied to examine the relative impact of a predictor construct on an endogenous construct (Hair et al., 2014a). As an addition to examining the R^2 values of all endogenous constructs, the change in the R^2 value when a specified exogenous construct is omitted from the model could be used to evaluate whether the

omitted construct has a substantive impact on the endogenous constructs (Hair et al., 2014a). The effect size can be calculated as:

$$f^2 = \frac{R^2 \text{ included} - R^2 \text{ excluded}}{1 - R^2 \text{ included}}$$

Where R^2 included and R^2 excluded are the R^2 values of the endogenous latent variable when a selected exogenous latent variable is included in or excluded from the model. The change in the R^2 values is calculated by estimating the PLS path model twice. It is estimated the first time with the exogenous latent variable included (yielding R^2 included) and the second time with the exogenous latent variable excluded (yielding R^2 excluded). Cohen (1988) provides f^2 of 0.02, 0.15 and 0.35, respectively; represented small, medium and large effects of the exogenous latent variable.

Table 4.11 indicated the effect size assessments of the respective exogenous latent variables on the endogenous variable in their direct relationships. From the table, all the exogenous latent constructs that significantly affected the endogenous latent variables (refer Table 4.11) have a small effect on the endogenous latent variable (i.e. business performance). Additionally, Market Orientation also have small effect towards networking. However, market orientation was found not to have an effect towards business performance. Specifically, innovation (0.153) and networking (0.141) were considered as having a small effect size toward business performance while only innovation (0.288) has been considered as having a medium effect size on networking based on Cohen's (1988) formula.

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Table 4.11 : The assessment of effect size (f 2)

Relationship	Effect Size (f 2)	Explanation
Innovation à Business Performance	0.135	Small
Market Orientation à Business Performance	0.001	None
Networking à Business Performance	0.141	Small
Innovation à Networking	0.288	Medium
Market Orientation à Networking	0.055	Small

4.5.2.5 Assessment of Predictive Relevance (Q^2)

This study also examined the Stone-Geisser's Q^2 value (Geisser, 1974; Stone, 1974) in order to evaluate the magnitude of the R^2 values as a criterion of predictive accuracy (Hair et al., 2014a). However, this criterion could be reflected as a value-added assessment of the model fit in the PLS-SEM analysis (Duarte & Roposo, 2010; Stone, 1974). Q^2 value larger than 0 suggests that the model has predictive relevance for a certain endogenous construct, while values of 0 and below show the absence of predictive relevance (Chin, 1998).

The suggested approach to test predictive relevance is called the blindfolding procedure. According to Wold (1982, p. 30), the cross-validation test of Stone (1974) and Geisser (1975) fits soft modelling like hand in glove. Specifically, 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. Reflective measurement model specifies that a latent or unobservable concept causes variation in a set of observable indicators (McMillan & Conner, 2003). Since all endogenous latent variables in this study were reflective in nature, a blindfolding procedure was applied mainly to this endogenous latent variable.

Table 4.12 : Predictive Relevance (Q-Square) Value

Total	**1-SSE/SSO**
Business Performance	0.211
Networking	0.168

Table 4.12 qualified the blindfolding outcome of the cross-validated redundancy (Q^2) test of the latent endogenous variable of the relationships model of this study. Since the cross-validated redundancy (Q^2) is greater than zero (0), it showed that there is a path model predictive relevance (Chin, 1998; Hair et. al., 2014a; Hayes, 2009; Hair et al., 2016).

Table 4.13 presented a summary of findings of the hypotheses testing. The findings indicated that only innovation and networking have influenced on business performance. Nevertheless, when the bootstrapping analysis was used to test whether networking mediated the relationship between independent variables and business performance, the findings revealed that the only mediates in the relationship between innovation and business performance.

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Table 4.13 : Summary of Hypotheses Testing

	Hypotheses	Findings
H1	Innovation à Business Performance	Supported
H2	Market Orientation à Business Performance	Not supported
H3	Networking à Business Performance	Supported
H4	Innovation à Networking	Supported
H5	Innovation à Networking à Business Performance	Supported
H6	Market Orientation à Networking à Business Performance	Not supported

4.6 Summary of the Chapter

In summary, the statistical analysis results were presented. The findings were further discussed along with the implications for theories and policy making in chapter five. Recommendations for future research will also be presented in the next chapter.

CHAPTER FIVE

CONCLUSION AND RECOMMENDATIONS

5.1 Introduction

The main purpose of this chapter is to summarize the results, discuss the findings and elaborate the contributions of the study to literature. This thesis also provides useful, additional insights and knowledge for the regulators namely Petronas, various stakeholders, financial institutions, SME service providers and agencies that are responsible for the SME firms growth in Malaysia's oil and gas industry in term of performance which includes the future direction, skills set and capability of the firms facing the same highly volatile environment in future. This chapter highlights the limitations upon completion of the thesis and future research avenues based on that specified limitations. Finally, this chapter also presents the conclusion of the thesis.

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5.2 Recapitulation of the Study's findings

The main focus of this thesis is to examine two predictors of SMEs performance of the oil and gas service providers and the determining factor whether the networking as mediator influences the predictors-performance relationship. Many determinants have been identified by previous studies that have contributed to the superior SMEs performance. This study focuses only on two variables namely innovation and market orientation. The study tends to determine whether the determinants of SMEs performance are also applied to oil and gas sector. The introduction of mediating construct of networking makes this study more intriguing and valuable because this is

the first attempt ever the combination of theses models being analysed and also one the very few oil and gas studies being conducted in Malaysia. Hence this study fills the theoretical and practical gaps.

The raw data has been screened and undergone a preliminary analysis before they are run through multiple regression in SPSS software. Then, the empirical results of this study were further regressed using SEM-PLS of Smart PLS v3.2.6. Structural Model Assessment and other evaluations have been executed in order to test seven hypotheses and they show that four direct relationships and one mediating effects are supported. However, one direct relationship and one mediating effect show non-significance and negative relationship.

5.3 Discussion of the Findings

The following subsection discusses the findings of the study which are aligned with the research objectives and questions provided in an earlier chapter.

5.3.1 Innovation and SME Performance

The first objective of this thesis is to examine the direct relationship hypothesis between innovation and SMEs performance for the oil and gas service providers in Malaysia (H1).

Focusing mainly on the central region of Peninsular Malaysia. Based on previous literature that mostly shows significant positive effect of innovation-performance relationship, a positive relationship has been hypothesised. Rigorous tests and analyses using SEM-PLS path modelling have been executed on the respondents' data files.

The results suggested that innovations contribute towards the creation of value for the SME entrepreneur in terms of better business performance. Nevertheless, innovation asserts a wide range of effects on different performance dimensions. In this sense, results highlight the convenience of discriminating among innovation types and performance measures to guide innovation policies more efficiently. Therefore, it was argued that the concept of business performance has different dimensions and that the effect of innovation can differ noticeably depending on the type of innovation and the performance dimension considered. Most of the attention given by scholars to the effects of innovation on business performance has focused upon the relationship between technological innovation (e.g. product innovation) and business growth measures (e.g. sales; Jaumandreu and Mairesse, 2016; Walker et al., 2015). The consideration of other performance dimensions (e.g. quality improvement) and non-technological innovations (e.g. organisational innovation) has traditionally been overlooked (Lichtenthaler, 2016). This article indicates that the relationship between innovation and business performance has to be analysed from a multi-dimensional analytical approach, since technical and non-technical innovations exert different impacts on alternative dimensions of the business performance of SMEs.

In the financial dimension, it is worth mentioning that product innovation causes a clear and significant positive impact on sales increase, while organisational innovation increases the probability that a cost reduction occurs. With respect to the operational performance dimension of SMEs, we find that all innovation types assert significant and positive impacts on both performance indicators. In addition, our findings suggest that innovation might operate as a booster of the competitive advantage of SMEs that are seeking to expand their service capacity, as size also appears to be a relevant factor

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towards enjoying better business performance, and improves the quality of services offered by the firm (Exposito & Sanchis-Llopis, 2018).

These findings are worthy of note as they improve the comprehension of an SME's relationship between innovation and business performance through the recognition of the multi-dimensional impacts of innovation upon business performance. In addition, this evidence has implications for policymakers and managers as the aid to the design of more effective innovation strategies aimed at achieving specific business outcomes. In particular, many firms overlook the positive effects of different types of innovation, usually focusing only on technological innovations. Yet, organisational innovation has a significant impact particularly with regard to the operational dimension of business performance. Thus, the limited attention afforded to non-technological innovation might miss opportunities to improve business performance. Further, non-technological innovations do not necessarily require extensive investment; this offers opportunities for firms with limited funds or scarce options to develop effective innovative projects.

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Hence, this research found and concluded that innovation is significant and has direct and positive relationship to the SMEs performance.

5.3.2 Market Orientation and SME Performance

The second hypothesis for this research is to examine the direct relationship between market orientation and business performance (H2).

Recent research from 2021 to 2025 indicates that the relationship between market orientation (MO) and SME business performance is not always straightforward or significant. Razak et al. (2024) found that while market orientation positively influenced product innovation, it had an insignificant direct effect on SME

performance, suggesting that innovation acts as a mediating factor. Similarly, Nasrah et al. (2023) reported that innovation did not mediate the link between market orientation and performance among Indonesian MSMEs, weakening the assumed direct path. D'souza et al. (2022) also observed that competitor orientation—a sub-dimension of MO—showed no significant impact on firm performance unless mediated by innovation. Additionally, Saleh et al. (2024) demonstrated that marketing ethics moderated the relationship, meaning MO only influenced performance under ethical marketing practices. These studies highlight that while market orientation may play a role in shaping internal processes, its direct effect on business performance is often conditional or mediated by other capabilities like innovation or ethics.

Notwithstanding, the understanding of market orientation's contribution to business performance is still inconclusive, as some studies find it to be a non-significant relation (Caruana et al., 1999; Lonial et al., 2008). Recent research has concluded that the causal link between market orientation and performance is not direct (Murray et al., 2011; Taylor et al., 2008; Zahra, 2008). Consequently, the impact of the firm's market orientation on its growth remains unclear (Liao et al., 2011). Nevertheless, the literature supports indirect links between the firm's market orientation and business performance (Teixeira, 2019).

Previous research between 2021 and 2025 have shown that market orientation (MO) does not always lead to improved SME business performance. For instance, Nuvriasari and Sari (2023) found that MO had no significant effect on the marketing performance of Batik SMEs in Indonesia, suggesting other factors like innovation and competitive advantage played a more central role. Similarly, Dahmiri et al. (2024) noted that while competitive advantage impacted performance, market orientation elements showed an insignificant direct effect on SMEs in Jambi City (Dahmiri, 2024).

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Therefore, in this particular research found and concluded that market orientation is not significant and has indirect and negative relationship to the SMEs performance.

5.3.3 Innovation and Networking

The third hypothesis for this research is to examine the direct relationship innovation and networking (H3).

Innovation is expected to be linked not only to contextual factors such as those discussed earlier, but also to informal social structures. Business networking based on interpersonal communication generate embedded resources such as social capital and trust relations. The importance of networking in facilitating innovation and shaping innovation pathways at the organizational, sectoral and national levels has long been recognized within the private sector innovation literature, and networks are now also increasingly being acknowledged as crucial in the public sector (Lewis et al., 2011). Previous empirical studies show that innovation in local governments occurs when individuals can meet each other without the burden of formal responsibilities, positions and rules (Considine et al., 2009; Nooteboom, 2006; Van der Voort et al, 2011). The presence of more external networking (which gives rise to access to a wider variety of information from outside the organization) is postulated to be positively associated with self-rated innovation capacity (Lewis & Ricard, 2018).

Innovation is closely related to business networking because either new or modified ideas aimed at enhancing customer value may result from interactions with business work through economic ties (inter-firm connection based on business transactions) and/or social ties (individual connection based on economic transactions). We argue that the business networking-innovation relationship is particularly important when

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Asian firms operate in a Western host market. As webs of interconnected business parties are developed through social and economic ties, new ideas and incremental innovations emerge through network knowledge sharing and exchange (Wang & Chung 2020).

Meanwhile, innovation can also come from non-economic or non-purposed based business networks. For example, research on Asian business networking and cultures demonstrates that social ties may provide additional sources of business intelligence (Chung et al., 2016; Wang & Chung, 2013). Interacting with a wide variety of people, from different backgrounds and with different mindsets can generate more varied and insightful ideas (Henry, 2020).

Therefore, this research found and concluded that innovation is significant and has positive and direct relationship with SMEs performance.,

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5.3.4 Market orientation and Networking

The fourth hypothesis for this research is to examine the direct relationship between market orientation and networking (H4).

Networking is an important tool that assists the firm's understanding of the market requirements and improves strategic emphasis on customer-led specificities by guiding the firm to focus on the needs and preferences of buyers (Piercy and Cravens, 1995; Musteen et al., 2010). Networks also help disseminate the knowledge generated by the core understandings of markets and agents functioning within it. Strategic networking with local governmental bodies, peer organizations, industry analysts and other stakeholders generates marketing intelligence that persuades the marketing orientation attitude of firms (Acquaah, 2007). This very acquisition and dissemination of

knowledge is a vital resource to uphold marketing strategies for local contexts as it enhances the firm's overall competency in a foreign market (Wang and Chung, 2013). Ruzzier et al. (2006) expounded that when firms come in contact with others, they increase their possibilities for market penetration, international extension and integration. Networks also provide for social relationships of firms and generate possibilities to co-create and innovate with local agents (Billore, 2019).

The core argument in support of this claim is that firms with high levels of market orientation and business networking benefit from the notion that 'who you know is more important than what you know' (Luo, 2003; Takyi-Aseidu, 1993). Entrepreneurs gain institutional favor and support from local public officials, traditional authorities and peers, and in return, entrepreneurs notice that the success of their business operations (including EO and MO activities) is influenced by the level of ties they cultivate (Acquaah, 2007; Luo et al., 2008). Given that public authorities (including government officials, and local kings and chiefs) in developing economies tend to hold tight control of local resource allocations, building network ties with such governing authorities may enable the entrepreneur to gain favorable access to unpublished (and potentially controlled) market intelligence, and benefit from fewer bureaucratic delays (Luo et al., 2008). Furthermore, because effective responses to local market needs are viewed through a communal lens (Viswanathan et al., 2010), it can be argued that entrepreneurial firms with appropriate social network ties may enjoy considerable local advantages in terms of local market intelligence generation and dissemination. In leveraging the benefits of social network ties, entrepreneurs may gain richer knowledge of target markets on top of market intelligence from market-oriented efforts. Acquaah (2007, p. 1241) argues that firms should focus on building institutional credibility using strong social ties in less developed markets because such

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ties may provide entrepreneurs “valuable access to resources and information as community leaders endorse the [firm] and its activities and refer it to their communities”.

Some research shows that an alignment of high levels of market orientation and business networking produces differential or mixed SMEs performance outcomes for business firms in a developing economy. In particular, networking was found to play an important role in shaping the complex relationship between firms' market orientation and business success. There are several avenues that offer rich potential for researchers looking to advance understanding of strategic market orientations, particularly in SMEs performance contexts. For instance, a question that needs answering concerns the generalization of the findings, especially the importance that networking may have in economies that are at different stages in the development of their legal and regulatory institutions. Specifically, the view that market orientation and networking are more crucial for the success of businesses in less developed economies than in more developed economies has been debated for some time now (North, 1990; Williamson, 2009). However, very little comparative research has been conducted to empirically verify the latter notion.

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Hence, this research found and concluded that market orientation is not significant and has indirect and negative relationship to SMEs performance.

5.3.5 Networking as Mediator Between Innovation and SME Performance

The fifth hypothesis for this research is to examine the relationship between innovation and SME performance and mediated by networking (H5).

The innovative capacity of SMEs is essential for sustainable competitive advantage in a rapidly changing market, where the continuous development of new products and processes is the key to survival, growth and profitability (Nieto and Santamaría, 2010). Due to their limited resources, SMEs use a variety of sources and are connected to different networks to obtain the information they need to develop their strategy and gradually organize their environoment. Social networks keep SMEs up to date with changes in the economy, letting them take advantage of opportunities to innovate. For Varis and Littunen (2010), the introduction of different types of innovation in SMEs is associated with the use of different types of information sources and collaborative relationships.

A new venture in the initial phase undergoes many challenges; networking enables it to access the valuable resources to meet those challenges effectively. Noteworthy, results reveals that building ties play a key role in the success and performance of young medium-sized SMEs in the emerging economies. Business owners and managers have to build strong connections with external bodies to make effective innovation and improve business performance. There is adequate evidence that innovation mediated networking significantly and positively contributes to performance and outcomes of SMEs operating in the emerging economy Pakistan (Anwar 2018).

Networking has become a major source for new ventures' success and survival. It helps firms to access new resources needed for development and growth. The study examined the impact of networking on business innovation. Data were collected through structure questionnaire using sample size of 311 young medium-sized enterprises operated in the emerging economy Pakistan. Hypotheses were tested through structural equation modeling (SEM). The results indicate that all the

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networking mediates the business firm innovation and business performance. Managers and owners of newly established medium-sized firms need to strengthen their ties with financial institutions, business partners and government officials to access valuable resources and knowledge that lead to innovation which in turn helps to improve the firm's performance (Anwar, Shah, Zulfiqar & Muhammad, 2019).

Hence, this research found and concluded that networking mediates relationship between innovation and SMEs performance.

5.3.6 Networking as Mediator Between Market Orientation and SME Performance

The sixth hypothesis for this research is to examine the relationship between market orientation and SME performance and mediated by networking (H6).

The networking is also an important part of marketing strategies in business life (Öztamur and Karakadılar, 2014). It is an advantage to build trust between customers and the firm in a way never seen before with traditional means of communication. Awareness, trust and reputation are the most important benefits of using social networks for SMEs to strengthen their market position (Gligorijevic and Leong, 2011). It is true that given its viral characteristics, social network marketing can be more effective in building up knowledge of the brand, strengthening its reputation and increasing sales. It is difficult to determine its contribution in relation to paid advertising and other types of promotion. What is important for SMEs is following the most influential users through related topics and analyzing strategic methods for their own benefit.

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Market orientation with business networks was positive but that the interaction was unable to increase significant positive effects market orientation could also have on the firms' growth performance. In summary, the interaction was positive but not necessary, as it is not useful for increasing the firms' growth performance effects. Thus, networking mediates the market orientation was not confirmed. Finally, while the interaction effect with generic experience was not significant, the interactive effect of market orientation and the firms' performance growth was negative., confirming the hypothesis (Presutti & Odorici, 2018).

Following a longitudinal perspective, this study focuses on the direct and indirect effects of market orientation on the SMEs performance growth. By including the mediating role of business networking, this study also brings into play entrepreneurial traits in terms of accumulated previous experience and networks to complement firm level dimensions to better explain the performance growth of SMEs.

Therefore, this research found and concluded that networking does not mediate relationship between market orientation and SMEs performance.

5.4 Contribution and Implications of the Study

During the course of this study, many insights have been revealed regarding predictors of the form's performance. This study is one of the founding research in a developing country that outlines the effects of innovation and market orientation on the oil and gas service providers performance. In addition, this study endeavours to expand the boundary of current literature by investigating whether networking influences those relationships. By integrating the exogenous constructs, the present study claims significant relevant contributions to the body of knowledge and propose suggestions

for the considerations of agencies regulating SMEs and oil and gas firms. The main contributions of this study are elaborated in the subsequent sub-sections.

This thesis also strengthens the resource-based view (RBV) which theorises that unique resources generate the competitive advantage and enhance performance of a firm. This supports the views of Wernerfelt, 1984; Caves, 1980; Barney, 1991 and Peteraf and Barney, 2003 on RBV. RBV also theorises that one construct alone cannot contribute to improved performance (Kajalo & Lindblom, 2015).

5.4.1 Theoretical and Methodological Contributions

As per discussion in the significance of the study section in Chapter 1, the contributions of this study come in various forms and can be explained as follows.

Previous studies have also examined the effect of innovation and market orientation either in combination of constructs or by individual construct which is a basis in improving performance of SMEs (such as Covin & Slevin, 1989; Gupta & Batra, 2015; Hong *et al.,* 2013; Najafi-Tavani *et al.,* 2016; Kajalo & Lindblom, 2015; Suliyanto & Rahab, 2012; Amin *et al.*, 2016). This study has extended the theoretical framework and literature by combining other mediating variable construct, namely networking in order to determine whether the new construct is also a contributor to SMEs performance, specifically to oil and gas subsector. This study makes a significant addition to a scarce list of qualitative studies linking the SMEs performance with networking. A number of case studies were conducted but only on functional level, however very seldom on the organizational level as well as the shortage of quantitative studies in this industry.

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Furthermore, this study has been executed during the period of highly volatile environment that existed once in a few years such as during the global financial crisis in 1998, Asia financial crisis in 2008 and current period of economic crisis (2015-2018). Hence, this study has added a mediating effect of high networking towards the determination of independent variables relationship with performance. The study of the mediator becomes a notable contribution to literature because the occasion exists rarely.

Moreover, rigorous tests have been conducted to validate the hypotheses. The result yields a very strong relationship between innovation and SMEs performance, indicating that innovation plays pivotal roles in weathering the challenging environment.

The Resource-Based View (RBV) theory posits that a firm's sustainable competitive advantage stems from its unique resources and capabilities that are valuable, rare, inimitable, and non-substitutable (Barney, 1991). In the Malaysian oil and gas sector, SME service providers often operate in a highly competitive and capital-intensive environment. To gain strategic advantage, these firms must develop internal capabilities such as skilled human capital, technological expertise, innovation capacity, and strategic partnerships (Ismail et al., 2020; Abdul Wahab et al., 2021).

Given the challenges SMEs face—limited access to funding, talent constraints, and dependence on large players like PETRONAS, the RBV provides a useful lens to analyse how intangible assets (e.g., R&D capabilities, knowledge management, relationship capital) contribute to resilience and performance. Studies show that SMEs leveraging digital technologies and forming co-creation platforms with larger players can transform their internal capabilities into market advantage (Zakaria et al., 2022).

Moreover, government interventions such as the OGSE Blueprint 2021–2030 aim to enhance these resource-based capacities, indicating a policy-level recognition of RBV in sectoral development strategies.

On the perspective of methodological implication, this thesis contributes in enhancing the quantitative methodological approach starting with the preliminary analysis, measurement model and structural model techniques. A combination of recent techniques suggested by Pallant (2016) for data streaming using SPSS tools and Hair *et al.* (2017) for further analyses using PLS-SEM have been executed in order to obtain accurate and reliable results. For example, instead of using mean or median replacement for missing values employed by many researchers, this study further assesses the use of Little's MCAR and expectation-maximisation (EM) for missing values that are proven as missing completely at random. Similarly, a suggestion by Hair *et al.* (2017) to execute rigorous tests for outer and inner models have been performed.

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Most previous studies in strategic management and performance literature employ SPSS, SEM and AMOS. Traditional approaches through correlation analysis and multiple regression through SPSS have some limitations in explaining the effects between variables. This is due to the SPSS features that are capable to regress mostly on the variables level but unable to regress on the individual measurement items concurrently (Chua, 2014; Awang, Aftanorhan, & Mamat, 2015). This thesis employs PLS-SEM path modelling to assess the psychometric properties of each latent variable sourcing from its items. Convergent validity, and discriminant validity have been assessed through this application. Convergent validity is assessed by examining the value of AVE for each latent variable. Discriminant validity is determined by

comparing the correlation among constructs and moderating effects are realised through bootstrapping of PLS path modelling. PLS path modelling provides an opportunity for testing the robustness and predictive power of tools used in a study that explores performance of SMEs in Malaysia. Hence, the present dissertation represents a unique methodological contribution.

Even though PLS-SEM has received remarkable applications in the recent past, only a few of its applications estimate some advanced level of PLS analysis such as effect sizes (f^2), predictive relevance (Q^2) and effect size of the predictive relevance (q^2). Calculating these further enhances the understanding on the most important exogenous variable in explaining the R^2 of the endogenous latent variable in a given model and the predictive capability of the model. Furthermore, a graphical representation of the moderation plots is provided in the current thesis. This further enriches understanding on the moderation effects. Consequently, using PLS path modelling in the study of strategic orientations and dynamic capabilities constructs of SMEs provides a new framework for comparisons of results attained from past studies that use different tools of analysis and results.

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5.4.2 Practical and Managerial Implications on Oil and Gas SME Service Providers

The results of this study have important practical contributions and managerial implications for policy makers and firms' owners-managers. With regards to the implications, policy makers generally and firms' owners-managers specifically may take significantly important measures for alleviating the performance of oil and gas service providers in developing countries such as in Malaysia.

Studies on the predictors of oil and gas firms' performance especially during challenging environment are scarce. Hence, this study provides scholarly and practical insights on whether innovation and market orientation, influenced by networking can enhance the overall SMEs performance of the oil and gas firms.

For the practitioners, results of this study indicate that there is a significant effect of innovation on oil and gas SME service providers. This is in line with the findings of (Grissemann, 2013) who concluded that the more employees and managers are open toward the new idea and the change, the more the innovation will take place into the SME. The representatives (managers and/or owners) of SMEs believe that if their staff is open and has a positive attitude toward the new idea and the change, the implemented innovation in practice within SME will increase. In addition, it is suggested that managers identify and value new ideas to encourage employees to "think out of the box" and share their creativity (Tajeddini, 2010), which in turn will facilitate and encourages practical implementation of innovation. This result is a practical implication in terms of SMEs management, suggesting that if SMEs managers/owners will be open towards innovation, accepting new ideas, encouraging new resources for innovation and transforming the study's results into the innovation, the more innovation into the SMEs will take place. Thus, innovativeness is an attitude for allowing the business to achieve sustainable competitive advantage. In this line, SMEs managers/owners must consider innovativeness as an integral part of their strategy. However, to facilitate attitudinal dimension of innovation, SMEs managers have to consider the values and beliefs of employees, as well.

In term of practical implications of market orientation on SME business performance, developing and practicing a sound recruitment and selection process to get high-skilled employees who understand about the industry's market profile are the key factors to

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effective coordination and hence business performance (Domi & Remzi, 2019). Furthermore, SMEs should try to bring more flexibility to the system so that SMEs can react against volatile demand in a better manner. It will ensure high customer orientation, which will yield superior performance. Along with customer orientation, it is also essential to make organisation competitive because customer compares offerings from copeting companies and many time these comparisons created a base for purchase decisions hence SMEs owner/manager should try to tap new customer, and they should not focus only on current customers. As the prerequisite of all, effort should be made to strengthen infrastructural support, financial support and other resources.

From the networking point of view, the practical implications were twofold. Firstly, it encourages business owners to develop a customer-oriented approach as a key strategic objective in their pursuit for optimal SME business performance. Secondly, business owners and managers should increasingly exploit their business and social networking circle to accumulate vital resources for effectively exploiting their customer-oriented capabilities as a means to improve their performance (Danso, 2016). Further practical implication of this outcome is that by working with their businesses' associates or depending on human and financial capital from networking, SME owners can be able to develop innovative products to exploit opportunities arising from customer needs. Networking has tangible effects on SME business performance such as cost savings, in addition to the intangible impacts, such as learning, which is mentioned in the literature. Besides few studies that have directly addressed co-learning (e.g., Kale and Singh, 2007; Santoro et al., 2018a, 2018b), some other studies have also emphasized the role of inter-organizational collaborations in enhancing colearning (Kale et al., 2002; Huang, 2010). Learning perspective to

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collaborations views knowledge acquisition and assimilation as the main goal of inter-organizational relationships (Peronard and Brix, 2019). Therefore, the main motivation for participating in networking is learning how to share knowledge and positioning in a way that guarantees access to the maximum knowledge available in the network so that business performance can be improved (Sadeghi & Cardinali, 2020).

To summarize the practical implication to oil and gas service providers SME business performance, the framework and findings of this research could have some meaningful contributions to the industry practitioners so that their view on sustaining and improving the performance shall be influenced by this academic and industry research collaboration.

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5.5 Limitation of the Study

This study, like any other quantitative research, suffers from methodological limitations. Non-probability sampling and low sample size are likely to compromise the conclusions of the study. Besides, the context of the study may also influence findings and conclusions and challenge their generalization. Future studies can focus on specific other industries such as pharmaceutical, software, and travel that have dissimilar innovation patterns and provide better conditions by changing the population and sampling procedures. Although this study contributes to clarifying the relationship between innovation, market orientation, networking and SME performance, it should be noted that the black box of this process requires further reopening. Therefore, it is recommended researchers to apply more qualitative approaches such as indepth case studies to more accurately explain the causal

mechanism between these constructs. In addressing this issue, this study was minimalist and merely focused on introducing intermediary actions, rather than being holistic and able to uncover all unknown aspects of the process (Beach and Pedersen, 2019). However, it is recommended to do research similar to this study and introduce resources, including financial, human, market, etc., and intermediary actions, including coopetition mechanisms, ecosystem mechanisms, termination mechanisms, etc. in different contexts (country, Industry, etc.) within longitudinal designs. The relevant literature emphasizes that knowledge synthesis requires personal experiences, learning through complex social interactions and socialization processes. Future studies can consider knowledge synthesis mechanisms as strategic actions and examine their intermediary role in the relationship between networking and performance. Feller et al. (2009) also believe that the more contractual protections in collaborations, the less the effectiveness of inter-organizational knowledge mechanisms. Moreover, future research is suggested to examine the mediating effect of this factor on the relationship between strategic actions and performance. Harryson (2008) also indicates that innovations are more likely to emerge from networks with poor communications and that such communications are more suitable for exploratory and creative activities. Furthermore, it is proposed to examine the mediating effect of the tie strength between networking and appropriate strategic actions to improve business performance. It is hoped that this study will be able to take a small step toward the theoretical development of the literature (Mokhtarzadeh, Mahdiraji & Jafarpanah, 2020).

Research on entrepreneur, social science and economic studies often encounter many limitations. The present dissertation focuses on the performance of the SMEs in oil and gas industry subsector. Objective financial data are lacking which restricts an

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analysis as far as firm's performance is concerned. It is measured based on the owner-managers' subjective assessment on the given measures. However, according to Keh, Nguyen and Ping (2007), "the use of perceptual measures is a common issue in organizational research and as reflected in other studies, objective and subjective measures are highly correlated, even though they are separate constructs"

The performance of SMEs in oil and gas business might be influenced by various variables such as organisational characteristics, strategic orientations dimensions, entrepreneurial attributes, and other external forces surrounding the business establishment. However, due to time factor, this dissertation focuses on two predictors only namely innovation and market orientation and networking as mediator. No other determinants have been examined due to the constraints of time and resources.

Moreover, the study is restricted to the context of the peninsular of Malaysia which consists of Terengganu, Pahang, Kedah, Pulau Pinang, Selangor, Kuala Lumpur and Putrajaya only for higher number of oil and gas headquarters are concentrated there. Due to the complexity of the oil and gas industry, the generalization of the results can still be made. On the other hand, the other limitation is small return rates compared with the whole population. Furthermore, qualitative approaches such as experts' opinion, focus group discussion and observation are not being conducted.

In addition, this study focuses on the oil and gas firms that have been operating for five years or more based on the definition of performed organisation dictated by several studies (e.g. Taomina & Lao, 2007; Dafna, 2008, Zafir & Fazilah, 2011). They support the notion that performed firm should be in business for three years or more. Vesper (1990) revealed that only 10% ventures survive after these periods of operations. Despite that, this thesis employs financial performance of firm's sales

growth, profitability and market share (financial indicators) as the key determinants to measure firm performance (such as proposed by Gupta & Batra, 2015; Suliyanto & Rahab, 2012; Wiklund & Sherperd, 2005). Employee growth, customer growth and customer satisfaction are employed as non-financial indicators of firm performance (Gruber-Mueckle & Hofer, 2015; Suliyanto & Rahab, 2012). No other performance elements were used due to time and resources limitations.

The definition of SME has been adopted from the SME Corp. of Malaysia. This study was constrained to the registered SMEs in the oil and gas sectors derived from the SME Corporation website, which are registered under the service sector category. Petronas, on the other hand, due to confidentiality of the data informations, has politely declined the request to support on the vendors list for this research. Therefore, unregistered and unreachable oil and gas players were not included in this research parameters.

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5.6 Recommendations of Future Research

The study of this construct is very wide and continues in determining SMEs performance indicators and factors that intervene or mediate them. This thesis proposes a significant framework relating to two important constructs found in literature streams namely innovation and market orientation. It is suggested that this framework be tested in different developing countries for oil and gas sector in order to generalize the findings. The same framework can also be applied for micro-sized or large service providers in future. Additionally, the framework can also be tested across different sectors such as retail and manufacturing as well as others industries and the differences of impact can be investigated too.

The present thesis is carried out based on cross-sectional approach in which the data are collected once during the duration of study. It is recommended that longer period of time is allocate for example three consecutive years so that the trend can be seen of its impact on the performance over time. This longitudinal approach will provide more information and reflect an in-depth understanding of the cause and effect the relationships.

Furthermore, the future research may test other constructs in addition to current framework such strategic orientations as well as dynamic capabilities variables like technology orientation, learning orientation, relationship orientation, management competence, technical competence, alliance management capability, integrative capability, absorptive capacity and others which can embedded into the current framework.

The future research should note that there are different levels of environmental volatility. Therefore, a new research can utilize the same framework during stable (low dynamism) and moderate environments. Hence, a better understanding will be gained on the change implementation capability for various environments.

In addition, future research can employ other mediators such as entrepreneurial ambidexterity, government support, absorptive capacity, supply chain effectiveness, marketing capability or organisational inertia (processes, resources and path dependency) to examine the impact on financial and non-financial performance.

Furthermore, the future research may use real financial data instead of perceptions of owner-managers. Even though it is very difficult to get financial statement from SMEs owner-managers, if a proper planning (such as a deal with gate-keeper) and ample time

are given, this project can be realised. The results of firm performance are expected to be more accurate if analysis is made on audited financial statements.

Considering the inability of the current thesis to acquire larger samples due to financial and logistic constraints, the future research should obtain fund and expand to the entire Peninsula Malaysia, Sabah and Sarawak. This will enhance the generalisation of findings of this framework. Future researchers can also apply multi-dimensional aspects for all exogenous constructs in order to get more information and comprehensive results because the present study applies uni-dimensional aspect only.

Finally, it is also recommended that other means of collecting data such as qualitative, mixed methods and/or interviewing experts can be gauged to gain a better perspective on determining constructs for SMEs performance of oil and gas industry. The future researchers may also extend the firm performance dimensions to attain deeper insights.

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5.7 Conclusions

The motivation to embark on this study is because studies on performance determinants in oil and gas subsector are scarce. Thus, this study is considered a pioneer attempt to examine two predictors namely innovation and market orientation and with the mediating effect of networking. The first two constructs are extensively studied from the perspective of SMEs performance. The current thesis also extends past studies on strategic orientation by incorporating important determinants and role of networking as a mediator.

The findings suggest that networking significantly mediates the relationship between innovation oil and gas SME performance. On the contrary, it does not mediate the

relationship between market orientation and SME performance. Thus, the study substantially adds to the academic's existing literature and practical knowledge for oil and gas industry; and as a starting point of framework for other researchers to explore for other predictors and intervening factors. Even though, the thesis focuses on oil and gas subsector in Malaysia some generalisations can be applied to other services subsectors or overall SMEs as well.

Policy-makers benefit from the findings for a few suggestions which might be useful for the future of oil and gas industry. As the government's vision is to make Malaysia as a important oil and gas hub, findings and recommendations from this study are expected to contribute fundamental insights for future planning.

In conclusion, the main contribution of this study is in three fold. First, it answers various questions regarding the variables' effects towards performance. Second, the study employs one type of volatile environment in order to explain inconsistencies that exist between the relationship between innovation, market orientation and SME performance. Third, this study is unique because the data cannot be undertaken at all times due to the rare response from the industry players. However, at the same time, it provides opportunities of an in-depth studies on other occasions, such as stable and moderate environments when the next research arrives. This is also beneficial for the oil and gas performance study as a whole.

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APPENDIX A

Permohonan Bagi Mendapatkan Senarai Vendor SME Minyak dan Gas Bagi Tujuan Kajian Penyelidikan Kedoktoran (DBA)

1 message

<azmisaid@smecorp.gov.my> Sun, 5 Jan 2020 at 09:47
To: hasrin hashim <hasrin.age@gmail.com>
Cc: juliana@smecorp.gov.my, hasrin.dba@gmail.com, mimi@smecorp.gov.my

Waalaikumsalam,

Untuk mendapatkan maklumat syarikat berkaitan, saya cadangkan untuk melayari http://dun.med.gov.my dan http://dun2.med.gov.my . Laman ini memaparkan banyak maklumat secara percuma.

SME Corp mengenakan bayaran untuk maklumat syarikat. Bayaran dikenakan kerana kerja-kerja "customization" serta keperluan untuk memastikan maklumat adalah terkini dan menepati kehendak PDPA.

Terima kasih.

NOOR AZMI BIN MAT SAID
CEO |SME CORP MALAYSIA

On 2 Jan 2020, at 4:58 PM, hasrin hashim <hasrin.age@gmail.com> wrote:

[Quoted text hidden]
<SME Corp Letter.pdf>

DKN 2030
Dasar Keusahawanan Nasional

Universiti Utara Malaysia

APPENDIX B

BUSINESS PERFORMANCE OF SME SERVICE PROVIDERS IN THE OIL AND GAS INDUSTRY I MALAYSIA

Introduction :

This quantitative research survey is intended for gathering feedback on business performance of Small, Medium and Micro Enterprises (SMEs) service providers in the oil and gas industry in Malaysia. The valuable information received would provide insights in studying the challenges, factors and strategies to improve the performance of the key players and stakeholders within, thus, help improve the level of business performance required to sustain the survival of enterprises in this volatile and cyclic nature of the industry. Your cooperation, support and contribution are highly regarded and appreciated. Thank you.

Particular of Researcher :

Student : Hasrin Bin Hashim
Student ID : 99112
Supervisor : Associate Prof Dr Norashidah Binti Hashim
Programme : Doctor of Business Administration (DBA)
School : Othman Yeop Abdullah Graduate School of Business (OYAGSB)
University : Universiti Utara Malaysia (UUM), Sintok, Kedah

* Indicates required question

SECTION A : MARKET ORIENTATION

Competitor Orientation

Please tick one answer or one response that best represents your experiences and opinions.

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

1. 1) Managerial staff regularly shares information within our organization * regarding our competitors actions.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

2. 2) We keep informed and analyze the service offers by our competitors. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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3. 3) Managerial staff targets customer where we can have an opportunity for * competitive advantage.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

4. 4) Top management often discusses competitors strengths and strategies. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

5. 5) We usually anticipate how our competitors will respond to our competitive * move.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

6. 6) We rapidly respond to competitive action that threatens us. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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7. 7) When we are faced with decision making situation, we are willing to take the * risk.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

Customer Orientation

Please tick one answer or one response that best represents your experiences and opinions.

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

8. 8) Our business strategies are driven by our believe about how we can create * greater value for customer.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

9. 9) We measure customer satisfaction systematically and frequently. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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10. 10) Our business objectives are driven primarily by customer satisfaction. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

11. 11) Our competitive advantage is based on our understanding of customer * needs.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

12. 12) We constantly monitor our level of commitment and orientation to serving* customer needs.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

13. 13) We give close attention to after sales service. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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Inter-functional Coordination

Please tick one answer or one response that best represents your experiences and opinions.

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

14. 14) Our top managers from every function regularly visit our current and prospective customers.

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

15. 15) We freely communicate information about our successful and unsuccessful customer experiences across all business functions. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

16. 16) All our business functions (Sales, marketing, R&D and finance) are integrated in serving the needs of our target markets. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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17. 17) All our managers understand how everyone in our business can contribute to creating customer value. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

18. 18) We share resources with other business units. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

SECTION B : INNOVATION MEASURE

Please tick one answer or one response that best represents your experiences and opinions.

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

19. 19) For the past 5 years, our business has developed any new service. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

20. 20) For the past 5 years, our business has improved the service it offers. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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21. 21) For the past 5 years, our business has improved its method of service. *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

22. 22) For the past 5 years, our business has developed new method of marketing.

Mark only one oval.

1 2 3 4 5

Strc ◯ ◯ ◯ ◯ ◯ Strongly Agree

23. 23) For the past 5 years, our business has established new markets. *

Mark only one oval.

1 2 3 4 5

Strc ◯ ◯ ◯ ◯ ◯ Strongly Agree

24. 24) For the past 5 years, value added knowledge and information about online * technological platform has helped develop and implement innovative strategies in our business.

Mark only one oval.

1 2 3 4 5

Strc ◯ ◯ ◯ ◯ ◯ Strongly Agree

25. 25) For the past 5 years, our competitor has come out and introduced * innovative idea.

Mark only one oval.

1 2 3 4 5

Strc ◯ ◯ ◯ ◯ ◯ Strongly Agree

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26. 26) For the past 5 years, our customer has suggested to us innovative idea. *

Mark only one oval.

1 2 3 4 5

Strc ◯ ◯ ◯ ◯ ◯ Strongly Agree

SECTION C : BUSINESS PERFORMANCE MEASURE

Please tick one answer or one response that best represents your experiences and opinions.
5 = Much better than Competitors ; 4 = Better than Competitors ; 3 = About the same ; 2 = Worse than Competitor ; 1 = Much worse than Competitors

27. 27) Gross Profit (before tax) *

Mark only one oval.

1 2 3 4 5

Much worse than Competitors ◯ ◯ ◯ ◯ ◯ Much better than Competitors

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28. 28) Return of Asset (RoA) - (It shows the percentage of how profitable a * company's assets are in generating revenue) *Mark only one oval.*

1 2 3 4 5

Much worse than Competitors ◯ ◯ ◯ ◯ ◯ Much better than Competitors

29. 29) Profitability *

Mark only one oval.

1 2 3 4 5

Much worse than Competitors ◯ ◯ ◯ ◯ ◯ Much better than Competitors

30. 30) GROWTH - (It can be achieved either by boosting the top line or revenue of the business with greater sales and service income, or by increasing the bottom line or profitability of the operation by minimizing costs) *Mark only one oval.*

	1	2	3	4	5	
Much worse than Competitors	◯	◯	◯	◯	◯	Much better than Competitors

31. 31) Overall Business success *

Mark only one oval.

	1	2	3	4	5	
Much worse than Competitors	◯	◯	◯	◯	◯	Much better than Competitors

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SECTION D : NETWORKING

Please tick one answer or one response that best represents your experiences and opinions.
1 = Strongly Disagree ; 2 = Disagree ; 3 = Neutral ; 4 = Agree ; 5 = Strongly Agree

32. 32) We keep a close relationship with each customer *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

33. 33) We communicate and meet each customer frequently *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

34. 34) We work closely with our suppliers *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

35. 35) We enjoy Government support *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

36. 36) We closely work with University *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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37. 37) We have a good relationship with our competitors *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

38. 38) We have a good relationship with relevant agencies (Government, Semi Government, GLCs etc)

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

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39. 39) We receive feedback from our customers *

Mark only one oval.

	1	2	3	4	5	
Strc	◯	◯	◯	◯	◯	Strongly Agree

SECTION E : ABOUT YOUR COMPANY

Please choose one appropriate answer in options given

40. 40) Firm years in operations? *

Mark only one oval.

- less than 2 years
- 2 to 4 years
- 4 to 6 years
- more than 6 years

41. 41) Your age? * *Mark only one oval.*

- below 25 to 29 years old
- 30 to 39 years old
- 40 to 49 years old
- 50 years old and above

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42. 42) Your gender? *

Mark only one oval.

- Male
- Female

43. 43) Your education level? *

Mark only one oval.

- [ ] PMR/LCE
- [ ] SPM/MCE
- [ ] Diploma
- [ ] Degree
- [ ] Master
- [ ] PHD

44. 44) Numbers of employees ? (If other, please specify. Note : SME Definition for * employees : Micro less than 5, Small 5 to 30 and Medium 30 to 75) *Mark only one oval.* below 5 5 to 30
30 to 75 Other:

45. 45) Type of business? (Select only one if involved in more than one area; identify only the area with most sales revenue. If other, please specify. Note : SME Definition for turnover : Micro less than RM 300K, Small RM 300K to RM 3Mil and Medium RM3Mil to RM20Mil) *Mark only one oval.*

- [ ] Engineering, Procurement, Construction and Commissioning
- [ ] General Supply and Trading
- [ ] ICT Hardware and/or Software Business Process Outsourcing
- [ ] Other: _____

46. 46) Job Title? *

Mark only one oval.

- [ ] Owner
- [ ] Manager in charge who knows the overall rm operation

Thank you very much for your time and assistance.

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