Dynamic Capabilities Development: An Examination of Exporting Small-to-Medium Enterprises (SMEs) in Malaysia

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ABSTRACT

As time has evolved, the business environment has become more dynamic and such that the original propositions of the resource based view (RBV) is being challenged for being static and neglecting the influence of market dynamism. This is particularly important for exporting small-to-medium sized firms (SMEs), firms that seek a significant competitive advantage from the use of their resources in pursuing international sales in one or multiple countries. The rapid growth of the dynamic capabilities literature and its diversity have led to a rich but still disconnected body of research pointing in dissimilar directions. Prior researchers reported that there is not much attention given to the process of how capabilities develop, emerge or evolve especially in SMEs that have limited resources, knowledge bases and expertise in building and integrating diverse capabilities. Thus, there is a question to ponder about how these small exporting firms could survive in a dynamic environment with a lack of resources and skills. Building on ideas of emerging and branching dynamic capability, this study uses a sample of 130 Malaysian exporting SMEs in manufacturing industries and hypotheses are tested using Structural Equation Modelling. A web-based survey questionnaire and return postal set of surveys were distributed to managers/founders/owners of selected exporting SMEs in Malaysian. The results suggest that operation slack has a strong positive moderation effect between learning exploration and emerging dynamic capability of sensing and moderation between innovation exploration and an emerging dynamic capability of learning. The other moderators, such as financial slack, past business performance and international diversity had resulted as negative moderators for the particular path. Furthermore, these study also proving the link between dynamic capabilities, substantive capabilities and business performance. The results show that, substantive capabilities do have direct effect towards business performance. Overall, the key finding of this study is to unpack the relationships between dynamic capabilities and business performance.

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ABBREVIATIONS

AGFI	Adjusted Goodness of Fit Index
AVE	Average Variance Extracted
BDCC	Branching Dynamic Capability of Coordinating
BDCI	Branching Dynamic Capability of Integrating
CBP	Current Business Performance
CEO	Chief Executive Officer
CFA	Confirmatory Factor Analysis
CFI	Comparative Fit index
DC(s)	Dynamic Capability(s)
EDCL	Emerging Dynamic Capability of Learning
EDCS	Emerging Dynamic Capability of Sensing
EFA	Exploratory Factor Analysis
FDI	Foreign Direct Investment
FMM	Federation of Malaysian Manufacturers
FS	Financial Slack
GFI	Goodness of Fit Index
ID	International Diversity
IEXPLR	Innovation Exploratory
IEXPLT	Innovation Exploitation
LEXPLR	Learning Exploratory
LEXPLT	Learning Exploitation
LISREL	Linear Structural Relationships
MATRADE	Malaysia External Trade Development Corporation
OS	Operation Slack
PBP	Past Business Performance
RBV	Resource Based View
RMSEA	Root Mean Square Error of Approximation
ROA	Return on Assets
ROI	Return On Investment
R&D	Research and Development

SC(s)	Substantive Capability(s)
SEM	Structural Equation Model
SMEs	Small Medium Enterprise(s)
SPI	Speed of Innovation
SPM	Speed of Marketing
SPSS	Statistical Packages for Social Science
STI	Stage of Innovation
STM	Stage of Marketing

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CHAPTER 1 : INTRODUCTION

This chapter will:

- Provide an overview of the research background and subject of interest.
- Discuss the fundamental issues in the resource-based view of the firm and how this view interacts with the dynamic capabilities framework on which this study draws from.
- Define the broad aims and objectives relating to dynamic capabilities development in exporting Small-to-Medium Enterprises (SMEs).
- Elaborate on the research gaps and contributions to knowledge and managerial practice.
- Provide an overview of the thesis structure and a brief description of each chapter.

1.1 Background of the Study

Dynamic capabilities (DCs), which summarise the evolutionary nature of resources and capabilities, were developed to enhance the Resource-Based View (RBV) (Eisenhardt and Martin 2000; Helfat, 1997). In addition, the dynamic capabilities view (Teece, Pisano and Shuen, 1997) has attracted increasing attention within management literature in recent years. According to the ABI/INFORM database, between 1997 and 2007, at least 1,534 articles used the dynamic capabilities concept, encompassing not only its original field, strategic management, but also most of the main areas in business administration (Barreto, 2010). Using the Google Scholar database, the researcher then conducted a keyword search of 'dynamic capability' in order to conduct an additional search for scholarly work spanning the period between the years 2008 and 2016. A large number of hits reaching 265,000 results appeared, referring to dynamic capabilities studies. The concept of dynamic capabilities actually complements the foundation of the resource-based view of the firm, and has injected new dynamism into empirical research in the last decade (e.g., Ambrosini and Bowman, 2009; Di Stefano et al., 2010; Helfat and Martin, 2014; Wang and Ahmed, 2007). This is because the RBV itself does not explain how firms sustain

a competitive advantage in changing and uncertain environments, and thus the DC framework was introduced to address this. Hence, the combination of the RBV and the extension of the DC view is *"adding unique value to the firm through systematic change, particularly in industries characterised by rapid technological change"* (Fainsmidt et al., 2016, p. 8). Nonetheless, several issues surrounding its conceptualisation remain uncertain. Specifically, scholars have argued that the "*rapid growth of the dynamic capabilities literature and its diversity have led to a rich but still disconnected body of research pointing in dissimilar directions"*. For instance, as Barreto (2010, p. 257) stated in his journal article:

> *"…some researchers have used firm performance as the relevant outcome, whereas others have explored processes or organizational outcomes instead. Some works have conceptualized dynamic capabilities as idiosyncratic factors, whereas others have accepted them also as commonalities across firms. Some articles have focused their attention on the existence of the dynamic capabilities, whereas others have attempted to uncover the development and maintenance of such capabilities…."*

On top of that, the essence of the RBV lies in its emphasis on resources and capabilities as the origin of competitive advantage: resources are heterogeneously distributed across competing firms and are imperfectly mobile which, in turn, makes this heterogeneity persist over time (Barney, 1991). In addition, as cited by Wang and Ahmed (2007), the firm needs to possess distinctive capabilities to make better use of its resources (Penrose, 1959). As time evolves, the business environment becomes more dynamic and starts to challenge the original propositions of the RBV for being static and neglecting the influence of market dynamism (Eisenhardt and Martin, 2000). Moreover, the failure to address major environmental changes can negatively affect firms' performance (Audia, Locke and Smith, 2000), and current economies seem to present more challenges than ever to efficient and effective management because of what some scholars have termed hypercompetitive environments (D'Aveni, 1994; D'Aveni et al., 2010).

Previous research shows that the average period for which firms are able to sustain a competitive advantage has decreased over time (Wiggins and Ruefli, 2005). This is because firms seem to find it difficult to maintain their competitive advantage due to the dynamic capability challenges. Hence, continuous strategic innovation and strategic change are recommended as essential for business success (D'Aveni et al., 2010). D'Aveni et al. (2010) also indicate that dynamic capabilities can sometimes be sources of sustainable advantage. It is also essential to understand the role of learning and innovations as possible pathways to develop DC. This is because, for a firm to be dynamic, it starts from the routine of their learning activities and innovation activities (Winter, 2003). Kuilavanen et al. (2010) suggest that learning is more suitable in order to focus on the dynamic processes (i.e. capabilities evolve and develop). Furthermore, learning is also the key resource for sustaining a competitive advantage as well as the most important strategic resource.

Interestingly, this current study differentiates itself from others by looking at different types of learning and innovation: explorative and exploitative forms of learning and innovation in the DC development processes. This is because, by having these specific forms of learning and innovation, it could provide a more robust understanding of the DC development model. In addition, Helfat and Raubitschek (2000) stated, "DCs are associated with learning, innovation, and change, and their value is greater in turbulent than in more stable environments. Furthermore, learning and innovation are important in order "*to create time economies, i.e., to outpace competitors in the development and introduction of new products, the entering of new markets, or the adoption of new business models"* (Karna et al., 2016, p. 1157).

Overall, this study aims to understand and examine the processes involved in dynamic capability and business performance, specifically in a middle-income country such as Malaysia because they consist of greater uncertainty and rate of change.

1.2 Scope of the Study

In detailing the scope of this study, the discussion is guided by four core areas of: learning and innovation; dynamic capabilities and their development; substantive capabilities; and business performance.

Firstly, although there has been tremendous work carried out on learning and innovation within the firm (e.g. Atuahene-Gima, 2007; Jansen et al., 2006; March, 1991), this study advances itself by segregating learning and innovation activities into exploration and exploitation. However, this is not a study of ambidexterity or even exploration and exploitation. This study is focusing on how different types of learning and innovation could then lead to a different form of dynamic capabilities development. In addition, the researcher argues that there are too many studies on ambidexterity, where, technically, ambidexterity can be achieved by having a moderate amount of exploration and exploitation on both sides. However, here, the researcher argues that it is better if firms (i.e. exporting Small to Medium Enterprises) are superior on one side, rather than being average on both. This is because SMEs operating in highly competitive international markets demand specialised resources, skills and capabilities (Kuivalainen et al., 2010). Furthermore, this is a study of capability development and it is framed around Teece's logic of dynamic capabilities and Helfat and Peteraf's (2003) logic of emerging and branching DCs. DC in this study is defined by "*the capacity (1) to sense and shape opportunities and threats, (2) to seize opportunities, and (3) to maintain competitiveness through enhancing, combining, protecting, and, when necessary, reconfiguring the business enterprise's intangible and tangible assets"* (Teece, 2007, p. 1319).

Next, the researcher's scope of study is also focusing on how firms create new emerging capabilities and how they improve their existing capabilities. Hence, there are sets of moderating factors; consists of resource slacks and international diversity as well as sets of substantive capabilities as direct factors that are expected to affect the business performance. Resource slack in this study is defined as the excess resources that become important determinants of organisational structure, growth and performance (Penrose, 1959). Additionally, Nohria and Gulati (1996) added that slack resource refers to the firm's stock of additional resources available during a given planning cycle.

For the international diversity, it refers to the SMEs' international expansion across the borders of global regions and countries. To be more specific, it consists of the ways the SMEs use their resources to expand their international activities.

According to Teece et al. (1997), DC does not involve production of goods and services. Instead, DC builds, integrates or reconfigures substantive capabilities. Teece (2014, p. 2) added that capabilities are untethered from specific purposes or products and, because they are untethered, how capabilities affect performance depends on what is actually done with those capabilities. Thus, DC in general does not directly affect the output however, in this study, DC through substantive capabilities would affect the business performance. Substantive capability (SC) in this study is defined by looking at the definition of Easterby-Smith and Prieto (2007, p. 237), who defined it as "*operational capabilities or routines that are geared towards the operational functioning of the organisation*".

Finally, this study is shaped by way of its unit of analysis. Consistent with previous strategic management research, this research adopts the firm as its unit of analysis rather than the individual. This study is focusing on SMEs with an exporting activity. The exporting activity is defined as Malaysian manufacturing SMEs (using the definition approved by the National SMEs Development Council) that have an export activity in more than one foreign country. This is because exporting is a cost-effective way of penetrating new foreign markets quickly (Leonidou, 1995). Additionally, exporting is one of the most important strategies for a firm's growth (He et al., 2013). Precisely, the scope of this study only focuses on the context of exporting SMEs and business performance in the Malaysian manufacturing sector. One of the reasons for this is because Malaysia is a fast-growing middle-income economy and relies on SMEs for its economic growth. This is supported by the statistic shown in 2015, that Malaysian SMEs now contribute 19.9% in total exports and the government wants to increase this to 25% by 2020, and these SME exporters are mainly located in the manufacturing sector (57.6%) (newspaper cut December, 2015).

1.3 Research Problems and Gaps

Generally, resources and capabilities are important to the development of exporting SMEs, especially in developing countries (Hughes et al., 2016; Perks and Hughes, 2008). This is because SMEs often lack financial resources and an internationally experienced and skilful workforce (Perks and Hughes, 2008). Specifically, Gnizy et al. (2014) stated that the RBV does not explain how firms sustain a competitive advantage in changing and uncertain environments, and thus the DC framework was developed to fill these gaps. Researchers also propose that firms must develop dynamic capabilities in order to renew, reconfigure and adapt existing firm-specific resources in response to the fast-changing environment (Teece et al., 1997), especially firms in emerging economies with a turbulent environment. Fainsmidt et al. (2016) also demonstrate that dynamic capabilities are more valuable in developing economies compared to developed economies. Thus, it is important to further investigate this phenomenon.

Not only that, there is also a conversation going on about the need to distinguish between dynamic capabilities and substantive capabilities (e.g. Ali et al., 2010; Pavlou and Elsawy, 2011), and there is still a lot of confusion concerning the categorisation of the two (Barr, 2004; Winter, 2003; Zahra et al., 2006). Based on Helfat and Winter (2011), the distinction between substantive and dynamic capabilities is an ambiguous one. Thus, in this study the substantive capability is treated by capturing the DC process, which is the aspects of sensing, learning, coordinating and integrating. Thus, in Teece's perspective, he defines those components that allow substantive capabilities to change, while other literature (e.g. Zahra et al., 2006) confuses the terms by trying to label particular capabilities dynamic or substantive.

According to Winter (2000) and Teece et al. (1997), firms use dynamic capabilities, such as different levels of learning abilities, or different types of innovation, in order to create competitive advantages and to develop dynamic capabilities. Thus, it is also important to scrutinise what types of learning and innovation could help firms to enhance their dynamic capabilities development.

Furthermore, there is a series of criticisms about RBV (e.g., Kraaijenbrink et al., 2010; Makadok, 2001; Priem and Butler, 2001). These scholars have identified challenges related to generalisability, lack of applicability, and poor terminology and definitions. Another critique is that the RBV, dynamic capability and performance represent a tautology (Ali et al., 2010; Eisenhardt and Martin, 2000; Priem and Butler, 2001b). Generally, those firms that create DC will have an automatic advantage because they are renewing their capabilities. However, the researcher argues that how those capabilities may actually affect performance depends on what those firms choose to do with them. A tautology means something is inevitable and, if so, then there is no need to study this dynamic capability and business performance as the outcome was always certain. Therefore, this study aims to disprove the tautology between DC and performance.

Hence, Barney (2001) stated that it is essential that these issues (e.g. poor definition and generalisability of the RBV) be considered, in order to reduce the tautological reasoning. Additionally, Teece et al. (1997) also argue about how the dynamic capability framework could overcome the limitations of the RBV and develop a concept to fill the gaps in theories that attempt to explain competitive advantage via internal (e.g. Barney, 1991; Wernerfelt, 1984) or external (e.g. Porter, 1981) factors.

On top of that, the researcher also considers that there is still a gap in understanding how exporting SME develop dynamic capability in the emerging and refining stages and when it needs to improve on its resources, as well as in understanding how the firm branches out and refines its capabilities. This is the idea of a subset of DC – emerging and branching capabilities. Furthermore, there still remains an abundant unexplored opportunity to draw on entrepreneurship literature to build on exporting SMEs. Two such opportunities include looking beyond SMEs that sell internationally to also consider SMEs that rely on international combinations, and identify the impact that the creation of an international SME, as a form of entrepreneurship, has on markets and economic development. Therefore, this study provides related information regarding the firm's dynamic capability development that helps the SMEs to improve their business success.

In addition, another gap is linked to the critical areas of liability of newness and liability of foreignness that exporting SMEs face, and this has become the main foundation for why exporting SMEs in particular need to develop their dynamic capability. Although there is evidence that a firm's dynamic capabilities significantly affect its performance, very few theories investigate the way in which these dynamic capabilities impact firm performance (Ali et al., 2010). Moreover, this study is intended to fill the gap in the conversation on dynamic capability and substantive capability, as there is still little discussion about the distinctions between these two types of capabilities (Winter, 2003; Zahra et al., 2006). Thus, in response to this, the research objectives and research questions are constructed as follows in the next two sections.

1.4 Research Objectives

The broad research objective is to contribute to the conversation on dynamic capability and the processes of dynamic capabilities development in exporting Small-to-Medium Enterprises (SMEs) within the Resource-Based View (RBV). The research aims to contribute to the literature regarding the conversations on substantive capability and dynamic capability development in Malaysian SMEs, particularly in the manufacturing sector, which is dynamic in nature. This is because the significance of dynamic capabilities is more prominent in environments characterised by industries with rapid technological change (Teece, 2014b). Furthermore, manufacturing firms make up a large percentage of Malaysian SMEs; thus, it is more directly relevant to those groups and to the context of the study. In addition, manufacturing is a sector that needs to keep up with new knowledge and innovation, for instance, with the latest product innovation and design.

Specifically, this study focuses on the following objectives:

1. To examine the insight into how exploration and exploitation activities could lead to a different form of dynamic capabilities.
2. To identify the set of moderating key factors that affects the relationship between exploration, exploitation and the form of dynamic capabilities.
3. To examine the direct effects of the relationship between dynamic capabilities, substantive capabilities and a firm's business performance.

The central critique is that the RBV represents a tautology, *"a statement of relationship that is true by logic"*, and that it therefore cannot be generalised to be a theory (Priem and Butler, 2001, p. 58). In addition, the main problem with using the RBV perspective is that it is static in nature and does not allow for explaining how the resources can be created, used, reconfigured and shared over time (Kuilavanen et al., 2010). Hence, the combination of RBV and the extension of DC lead to the view of *"adding unique value to the firm through systematic change, particularly in industries characterised by rapid technological change"* (Fainsmidt et al., 2016, p. 8; Peteraf et al., 2013; Teece et al., 1997).

Furthermore, empirical research concerning the RBV is still in an emergent stage of development (Michalisin et al., 2004). In conjunction with this and from the above explanations, the following research questions are developed.

1.5 Research Questions (RQs)

Three research questions have been established to pursue these research objectives.

The **first research question** is to reflect on the important aspect of dynamic capabilities development within exporting SMEs; thus, the research question aims to examine how learning and innovation activities of the firm make unique contributions to different forms of dynamic capabilities in exporting SMEs.

> *RQ1: In Malaysian exporting SMEs, in what ways do the exploration and exploitation activities of learning and innovation of a firm make unique contributions to the development of dynamic capabilities?*

The **second research question** will identify the effects of DCs on the formation of more complex operational (substantive) capabilities and on the development of existing ones.

> *RQ2: In Malaysian exporting SMEs, what are the effects of dynamic capabilities on the formation of more complex operational capabilities and on the development of existing ones?*

The **third research question** will build upon the first two research questions to examine how new and evolving operational capabilities affect Malaysian exporting SMEs' business performance. These new and evolving operational capabilities are known as substantive capabilities. This is because *"the effects of dynamic capabilities on organizational performance work through the development substantive capabilities"* (Ali et al., 2010, p. 367).

RQ3: Do new and evolving capabilities affect Malaysian exporting SMEs' business performance?

Having explained the research problems and gaps relating to this study and introduced the research objectives and research questions, the next section looks at the relevant contributions of the study.

1.6 Research Contributions

Generally, this study aims to – at least partially – fill the gaps identified above. In order to do so, it uses an RBV perspective influenced by a dynamic capabilities framework to examine the processes that lead to dynamic capabilities development and business performance. In this study, business performance is measured by subjective performance (i.e. efficiency and profit).

Specifically, this study critically examines the concept of organisational dynamic capabilities and claims that existing contributions are still limited. The researcher aims to holistically examine the nature and process of dynamic capability development. According to Barney et al. (2011), there is little in the RBV literature regarding the process of resource development that links to sustainability and competitive advantage, and also links to other perspectives in strategic management. Hence, this study contributes to the knowledge-based gap by providing empirical data from exporting SMEs in respect of capabilities creation and development that will offer successful approaches to understanding the dynamic of a firm's growth. In addition, the resource-based view (RBV) suggests that capabilities are a source of unique and sustainable competitive advantages to a firm, because they transform its resources into products or services superior to those of its competitors (Amit and Schoemaker, 1993; Barney, 1991; Grant, 1991; Makadok, 2001). This study indicates that activities such as acquiring, absorbing, coordinating, and integrating resources from external and partner organisations

can enhance capabilities (Ethiraj, Kale, Krishnan, and Singh, 2005; Priem and Butler, 2001; Sirmon, Hitt, and Ireland, 2007; Teece, Pisano, and Shuen, 1997).

This study contributes to the body of knowledge in at least four areas. The first contribution concerns the study's theories. The study focuses on the resource-based view (RBV) theory and the dynamic capability view. Zahra et al. (2006) reported that prior researchers have not given much attention to the process by which these capabilities develop, emerge or evolve, especially in small or younger firms (Perks and Hughes, 2008) that have limited resources, knowledge bases, and expertise in building and integrating diverse capabilities. This indicates that further conceptual work is needed to elevate the resource perspective to a theory. Thus, one of the contributions of this study is through two different types of learning and innovation activities. These activities are disaggregated into explorative and exploitative learning and innovations in order to understand the complexity of their implications on dynamic capabilities formation and business performance. Theoretically, the more exploratory activities would lead to different types of capabilities (emerging/new ones), while exploitative activities should lead to simply the improvement of an (existing) capability. However, if that was the case, then it is almost a tautology (Williamson, 1999). Therefore, this study argues that there is a black box between exploratory and exploitative (learning and innovation) activities and how those capabilities are developed; thus, it leads to a theoretical contribution. This is evidenced through the existence of the moderators between those activities and the dynamic capabilities.

The second contribution is to fill the gap in the conversation about the dynamic capability development problem and address the confusion surrounding this area. The researcher break down this issues by looking at relationship between dynamic capabilities, substantive capabilities and business performance. In particular, this study is unpacking the relationships between dynamic capabilities and business performance. At present, little research exists regarding the moderations or mediations that explain the formation of dynamic capabilities, or the causal mechanism by which they then affects the business performance. Resolving the problems requires consideration of the set of moderating factors within the RBV and sets of direct factors of the substantive capabilities (speed and stage (level) of innovation and marketing). Thus, the novelty of this study is when the researcher

proposes direct factors of substantive capabilities as crucial missing links in the research conversation on dynamic capabilities and business performance. This is supported by Arend and Bromiley (2009), where they argued that there is an urgent need for a coherent theory and model for dynamic capabilities (cited in Pavlou and Sawy, 2011).

Thirdly, regarding exporting SMEs research, this study makes a contribution to this area via the application of the resource-based view and dynamic capability. Generally, SMEs that operate internationally become more competitive, where managers will need to ensure that their organisations develop, produce, sell, market and distribute goods to customers as effectively and efficiently as possible. Therefore, SMEs in developing and emerging countries that are at a similar stage could use this information to focus on implementing dynamic capability processes in their organisations by adapting them locally as needed, and linking them globally. This study also examines how exporting SMEs should utilise the strength of their resources and capabilities, in an attempt to maximise their business performance. Thus, learning and innovation activities are intended to be treated according to the RBV and DC perspective as the source of a competitive advantage for exporting SME firms, which, if it is leveraged well, will lead to superior performance (Man et al., 2007).

Lastly, is the contribution from the perspectives of practice and policy development. For practising managers, particularly of resource-constrained small firms that operate internationally, this study's finding provides a realistic path for the SMEs' internationalisation. It provides specific insights for founders/owners or managers, to make them aware of the significant role that innovation and marketing capability could have in order to enhance the business performance of SMEs. This study will also demonstrate to managers that resources alone cannot assure a business's success. Businesses need to develop their firm's dynamic capabilities in terms of sensing capability, learning capability, coordinating capability as well as their integrating capability (discussed in Chapter 2). This means that firms must know how to mobilise and deploy knowledge-based resources in combination with their other resources and capabilities. Parkhe (1991), for instance, mentions that the fastest learner can gain a competitive advantage, and this is particularly true for the exporting SMEs because, relatively,

they are small and lack other resources. Thus, different types of learning and innovation will give them an advantage (Man et al., 2007). To be more specific, these firms should focus more on the different types of learning and innovation activities (exploration and exploitation) so that they could build and develop a different set of dynamic capabilities (emerging and branching) which then, with support from the stage and speed of innovation capability's skills and marketing capability's skills, could enhance their business performance. In other words, to enhancing business performance, managers should recognise that building the speed and stage of marketing capabilities and innovation capabilities are a critical factor in enhancing the dynamic capabilities and business performance.

1.7 Thesis Outline

The thesis is divided into six chapters.

Chapter One introduces the background of the study and structure of the study. Subsequently, it lays out the objectives of the study, and then it details the research questions. It also discusses the scope of the study, research problems, research gaps and contributions.

Chapter Two provides a context and justification in the form of a literature review for posing the three research questions. This will be carried out in the systematic literature review to ensure that the gaps presented have been identified thoroughly. It will develop the research framework, and review past and current work in the literature, and explore the RBV in the wider strategic management field. It begins with a brief classification of the types of resources that international SMEs hold and a discussion of the main characteristics of dynamic capability. A section on capability development is included because this study is concerned with how dynamic capabilities emerged or branched and later impacted the business performance through substantive capabilities.

Chapter Three presents the hypothesis development from the core theories upon which this thesis draws. The chapter starts with a discussion of specific types of learning and innovation and then moves on to an overview of the development of the RBV, dynamic capabilities and business performance. Later, the set of

hypotheses was built in order to develop the research/conceptual model. It then lays out the dynamic capabilities framework on which the study draws.

Chapter Four focuses on the research design strategy taken for the study. The ontological, epistemological, and methodology considerations are discussed and philosophical positions are taken for the study. The chapter outlines the approach taken in the study and the data collection and analysis techniques. Furthermore, this chapter discusses the research methods selected for this study. A quantitative approach is taken based on the philosophical influences of the study. The chapter justifies the rationale for this approach and further discusses the exact method used. It then justifies the rationale for the choice.

Chapter Five presents the findings from the analysis of the structural equation model (SEM). The results and findings are presented descriptively and inferentially to answer the research questions with the appropriate statistical tests.

Chapter Six discuss the findings of the study. It also draws together the conclusions of this study presenting recommendations for policy makers, study contributions, limitations and future directions for further research.

CHAPTER 2 : LITERATURE REVIEW

2.1 Introduction

Dynamic capabilities have become a vital issue in management research, especially on how firms build and adapt their resources to fit the recent environment (Di Stefano, Peteraf, and Verona, 2010; Di Stefano, Peteraf, and Verona, 2014; Easterby-Smith, Lyles, and Peteraf, 2009; Schilke, 2014). This phenomenon not only is affecting large firms; it is also affecting small firms. In addition, the internationalisation literature has put considerable emphasis on promoting the theoretical understanding of the internationalisation process of large firms, but Fillis (2001) and Perks and Hughes (2008) demonstrate that smaller and medium sized firms are increasingly involved in international activities. Their findings discovered that cultural context, industry environment and resource constraints are not seen as significant barriers for an entrepreneurial manager's decision to internationalise (Perks and Hughes, 2008). A study commissioned by the Organisation for Economic Cooperation and Development (OECD) (2009) on the globalisation of Small Medium Enterprise (SMEs) provided evidence from eighteen member countries, suggesting that there were a number of key motivating factors for SMEs to internationalise, including growth motives, knowledge-related motives, networks and also domestic/regional market factors. Perks and Hughes (2008) also added that tacit knowledge and vision and product-service complexity are also some of the strongest influences on the decision to internationalise. This is supported by Madsen and Servais's (1997) discussion of new market conditions with advanced technology in production, transportation, and communication, as well as the capabilities of the founders and entrepreneurs who establish the new venture businesses.

In addition, resource demands on firms change over time and they keep growing, and that is more apparent when the firm is internationalizing. Thus, it is also worth giving attention to how SME firms from middle-income economies (i.e. Malaysia) experienced their internationalising process. According to Xavier and Ahmed (2012), SMEs in Malaysia contribute 30 per cent (National SME Development Council, 2009/2010) of the GDP. If compared to other SMEs in developed countries (which is above 50 per cent), it is considered lower. It is also reported that over the 2000-2008

period, skilled expatriates in Malaysia declined by 9 per cent. Only 25 per cent of Malaysian jobs are in the higher-skilled job bracket. In addition, the economy is dominated by nearly two million unskilled foreign workers. Moreover, Malaysia also lags behind in research and development as compared to its competitors, thus Malaysia needs to improve their foreign direct investment (FDI) flows into the economy and in productive activities (Xavier and Ahmed, 2012). Hence, there is an interesting point to ponder on how Malaysian firms can encourage the growth of small and medium scale enterprises in order to improve their GDP and FDI flows.

This literature review chapter covers three main bodies of literature that attempt to describe the variables influencing business success: (i) Internationalisation of SMEs and theories on the resource-based view (RBV); (ii) the role of dynamic capabilities and their development, learning and innovation activities as a component to achieving DC; (iii) and last but not least, this literature also cover substantive capabilities.

2.2 Internationalisation of Small Medium Enterprises (SMEs)

The ability of a firm to export part of its sales abroad is increasingly regarded as an important measure of its competitive performance and is increasingly becoming a trend in the internationalisation of SMEs (Kuivalainen et al., 2010; O'Farrell et al., 1996; Westhead et al., 2001), as well as being necessary to ensure the survival and growth of new and small firms (D'Souza and McDougall, 1989). The theory of firm internationalisation (Johanson and Vahlne, 1990) is the most relevant and appropriate theory to describe the firms that internationalise gradually. At this stage, firms prefer to go to the nearest regions which have a similar culture in their domestic markets and it is not necessary to be physically near, because they still lack experiential knowledge and hence, the decision to internationalise is considered to be risky (Johanson and Vahlne, 1977). The concept of 'psychic distance', which was introduced by Johanson and Vahlne (1977), describes the differences in the home country in terms of language, culture, political systems, business practice, industrial development, and educational systems. Hence, as the firms started to gain more knowledge about the market, these firms would then gradually enter other markets that were further away in psychic distance terms (Johanson and Wiedersheim-Paul, 1975). This phenomenon is believed to be the product of directive factors such as the changing of business environments into much more dynamic settings and entrepreneurial innovativeness by firms. This view is strongly supported by Oviatt and McDougal (1995, 2000). These

authors argue that after the mid-1970s, the flow of information from foreign markets has greatly increased, promoting greater international integration between markets. Oviatt and McDougal also stated that the cost of communication reduced to such a level that it became more possible to develop a firm's ability to coordinate cross-border activities. Improvements in labour mobility have also made it easier to recruit individuals with international managerial experience while firms themselves are increasingly able to exploit their unique and valuable resources by mobilising additional external resources across national borders. Some suggest that this experience and exposure of the managers and having a good business network prior to the start of a new venture play a part in its early internationalisation decision (Madsen and Servais, 1997), whereas others suggest that the fast-paced learning of these resource-constrained, technology-oriented firms allows them the early internationalisation opportunity (Zahra and George, 2002).

Furthermore, in order to enter foreign markets, Bloodgood et al. (1996) agree that SMEs also need to accumulate tangible and intangible resource stocks and, as suggested by Barney (1991), these stocks must be valuable, inimitable and non-substitutable. Thus, firms with unique bundles and with a greater combination of resource stocks may have a greater tendency towards internationalisation. Initially, with the idea that SMEs are frequently faced with resource limitations, it makes sense that the fungibility in the resource exploitation had a powerful connection with the firm's capability formation and growth (Autio et al., 2011). Autio et al. (2011) also state that resource fungibility is able to boost the tendency to engage in experimentation and experience transfer and learning through adaptation because it reduces the cost of deploying the same resource for alternative purposes. However, in some cases firms go international (i.e., exporting) in order to make more use of their resources and capabilities, and to potentially improve them, which leads us to the theory of internalisation.

2.2.1 The internalisation of Small Medium Enterprises (SMEs)

In general, internationalisation is the idea of going international, while internalisation is the reason why firms go international. However, in this study the researcher has decided to look solely at the internalisation point of view. This is because, firm's focus is not only to capitalise on internationalisation, but to improve and extend its resources and capabilities. Two rationales for internalisation have been discussed in the works of Teece (2014). Here he looked at the multinational enterprises' (MNE) point of view; however, in this study, the researcher is looking at SMEs that have gone international.

The first point is advanced by scholars (e.g. Buckley and Casson, 1976; Dunning, 1981; Teece, 1975, 1976, 1981; Williamson, 1981), as they perceive that the main reason for internalisation is due to a contractual issue and some associated market failures. This is followed by the second point, which emphasises the organisational culture of an integrated firm and the coordination inside the firm rather than coordination through the market.

> "*This integration is believed to open pathways to learning, and to sharing know-how and expertise through cross-border technology and know-how transfer within the firm. In this second point of the theory, facilitating opportunity identification, personnel exchanges, learning, integration, and assisting in technology transfer are likely to be very important…"* (Teece, 2014, p. 10).

Moreover, Teece (2014) argues that the second rationale for internalisation (i.e., capabilities) also needs to be strengthened and improved with entrepreneurial considerations. Thus, the main point of the literature is about being entrepreneurial and effective in the development, transfer, and orchestration of differentiated organisational and technological capabilities (Teece, 1981). Similarly, Cantwell (1989) describes it as 'industrial dynamics', as the focus is more on industrial evolution. Furthermore, the growth of firm boundaries also requires internal knowledge transactions because of the lower resource costs of transferring knowledge internally vs. across markets (Tallman, 2003; Teece, 1976, 1977, cited in Teece, 2014).

Similarly, Perks and Hughes (2008) found that the strongest influences on the decision to internationalise were through the firm's networking with the customer, tacit knowledge and vision, and product-service complexity. Not only that, they also agree that the locus of entrepreneurship is defined by opportunity and not by the size or age of the firm. Similarly, Stevenson and Jarillo (1990) discovered that the locus of entrepreneurial activity is defined by the act and not the firm's current resources. On top of that, the notion is also matched with the study from Zahra and Garvis (2000), which focused on the potential for firm growth by leveraging resources and capabilities in foreign markets. However, when SMEs internalise their resources and capabilities in foreign markets, another issue that needs to be considered is a Learning Advantage of Newness (LAN), Liability of Newness (LON), Liability of Adolescence and Liability of Obsolescence. There are also questions concerning how firm performance varies with age. According to Henderson (1999), scholars have addressed this question primarily in terms of failure rates. Their research has used several labels to describe the relationship between age and failure, including: (1) the liability of newness (Stinchcombe, 1965; Hannan and Freeman, 1984), (2) the liability of adolescence (Levinthal and Fichman, 1988; Bruderl and Schussler, 1990), and (3) the liability of obsolescence (Baum, 1989; Ingram, 1993; Barron, West, and Hannan, 1994).

2.2.2 Learning Advantage of Newness (LAN) and the extension of the Liability of Newness (LON) in exporting SMEs

Learning advantage of newness (LAN) assumes that the earlier a firm enters an international market in its cycle, the better international performance it will achieve because of the greater opportunities for novel learning unhindered by legacies and artefacts from 'prior' experience and knowledge (Autio et al., 2000). At the early stage, a new firm can be quicker and more flexible in adapting to a changing environment compared to an established firm where routines and regulations for how the firm is 'meant' to interact with its environment have already been set up. This statement is supported by Autio et al. (2011), where they clearly state that, if the new venture's management team has fewer prior shared experiences, it could search and test the market more broadly, as its responses would not be conditioned by previous and possibly incompatible experiences. Conversely, firms with the influence of previous shared experiences have the potential to slow down the formation of

capabilities. This is because they are unwilling to develop alternative solutions based on the current foreign market feedback, but rather intend to follow the schemas for action and legitimise these actions through storytelling and narratives (Lounsbury and Glynn, 2001).

The LAN thesis proposes that, while young firms lack prior knowledge of the current market and of the nature of international markets, their ability to learn new and unique insights to more effectively launch new international ventures is not constrained by either the presence or absence of prior knowledge or experience. The LAN originates precisely because young firms lack the prior knowledge and experience that would cloud their emerging understanding of their business and market conditions. The effect is that they can learn more novel information and undertake more novel action in response. Conversely, established firms are set to have disadvantages in LAN. In other words, an established firm's ability to learn and to innovate is cloudy and compromised. Thus, established firms need an educated process like exploratory and exploitative learning. Therefore, the researcher argues that this study is more reliable on issues of resources, dynamic capabilities and learning and innovation processes.

Another common issue encountered by SMEs concerns liabilities and difficulties. Some of these afflict an SME simply because of its size and age, like any new startup or young firm, but others are peculiar to its context. In general, these liabilities and difficulties arise from a lack of resources and capabilities. According to Cazura et al. (2007), these can be summarised as lack of complementary resources, which will result in crucial firm-specific difficulties. One of the complementary resources that the SMEs have is the liability of newness, where a firm requires some additional resources such as finding investors, land, materials, technology, equipment, facilities, employees, associates, and customers, either because it cannot transfer them across countries or because it has not developed them in order to compete in a new competitive environment.

According to Stinchcombe (1965), LON generally occurs in young organisations because they have not yet established the social acceptance required for stakeholders to support their survival through granting resources. In contrast, older or established organisations have an advantage over younger ones because it is easier to continue existing routines than to create new ones or borrow old ones (Nelson and Winter,

1982; Stinchcombe, 1965). Thus, there is significant pressure for SMEs to quickly establish legitimacy through their market entry decisions (Meyer and Rowan, 1977). As a result, some SMEs often make use of social networks for effective storytelling (discussed in section 2.3.2) to create an image of success that will in turn help them to attract resources (Brush et al., 2001). As a consequence, SMEs could easily expand their resource base and thus develop opportunities to grow quickly.

Moreover, as discussed by Perks and Hughes (2008), a manager's past experience of operating internationally may bring problems, as a firm and its managers may have learned incorrect knowledge or developed inaccurate assumptions, such that past lessons learned may hinder future exploitation opportunities, as they may not necessarily be applicable in different or new contexts (Brannen, 2004). As a result, entrepreneurial managers must look for compensating, resource-based advantages (Leiblein and Reuer, 2004). Without this condition, entrepreneurial managers are unlikely to internationalise (Perks and Hughes, 2008). Additionally, these liability issues could then be extended to liability of adolescence and obsolescence.

2.2.3 Liability of adolescence and Liability of obsolescence

Liability of adolescence arguments suggest that organisations can survive for a time with little risk of failure because they can draw on the initial stock of assets they typically acquire at their early phase, so failure rates are predicted to have an inverted, U-shaped relationship with age (Bruderl and Schussler, 1990; Fichman and Levinthal, 1991). In contrast, according to liability of obsolescence arguments, when firm size is controlled, failure rates will increase with age (Perks and Hughes, 2008).

In sum, the liability of newness and adolescence perspectives focus on failure rates that eventually decline with a firm's age. Later on, Ingram (1993) and other scholars concluded that firms suffer not from liability of newness or adolescence, but from liability of obsolescence. This is because older firms are so inertial that they become non-reactive to changes in the external environment. Thus, failure rates are expected to increase with age, and growth rates are expected to decline.

Here, the researcher argues that, as firms grow and age, they develop and the resources become more stuck on what the firms have been doing, which means that existing firms are more likely to need ways to overcome this danger of becoming rigid. Thus, firms need dynamic capability (discussed in section 2.6).

The next issue of concern is the types of resources that SMEs would specifically need in order to achieve a competitive advantage and the dynamic capabilities approach which has been proposed by Teece et al. (1997) as an extension of the RBV of the firm (Barney, 1986, 1991).

2.3 Types of resources that exporting SMEs need

There are many kinds of available resources. Conventionally, Wernerfelt (1984) describes physical, intangible and financial resources as distinct from each other. He argues that intangible resources can relate to human resources, technological resources, reputation and organisational assets. To be more precise, organisationally embedded intangible resources have been discussed with regard to tacit knowledge; experiences, reputation and goodwill; and organisational routines and skills (Anderson and Kheam, 1998). Autio et al. (2000) also support that a firm's ability to enter foreign markets can be linked to its accumulated tangible and intangible resource stocks. On the other hand, Hall (1993, p. 608) classifies "*intangible resources as assets or competencies*". Intangible assets include 'having' capabilities, which typically are regulatory (e.g. patents) or positional (e.g. reputation) while intangible skills or competencies are related to 'doing' capabilities, which include the functional capability (e.g. know-how) and the cultural or organisational capability (e.g. routines).

In addition, Morgan et al. (2004) discuss four similar types of resources that have been used in the marketing area. There are; the experiential resources, such as market and process knowledge gained from the firm's overseas market operations experience (Daily, Certo, and Dalton, 2000; Morgan et al., 2003). Next are scale resources, which relate to the size and scope of the firm's operations and significantly affect cost structures and influence competitive strategy and performance (Cavusgil and Zou, 1994). Third are financial resources; financial resources regard to the availability of money in the form of cash, securities, creditors, loan facilities possessed by a firm and the fourth are physical resources such as modern equipment and access to

valuable supply sources that facilitate process efficiency and product effectiveness (Leonidou, Katsikeas, and Piercy, 1998).

2.4 Resource-Based View (RBV): Critiques, Limitations and Theoretical Challenges

One of the important theoretical supports for the internationalisation of the Small Medium Enterprises (SMEs) is their resources, which then will enable the generation of capabilities (Kocak and Abimbola, 2009; Perks and Hughes, 2008). Therefore, a resource-based view (RBV) can be considered as the best theoretical explanation for the exporting SMEs, as it helps to explain how resources and capabilities are developed and leveraged by SMEs (Knight and Cavusgil, 2004).

Generally, resources are the foundation of a firm and the basis for capabilities. Barney et al. (2011, p. 1300) defined resources as, "*bundles of tangible and intangible assets, including a firm's management skills, its organisational processes and routines, and the information and knowledge it controls that can be used by firms to help choose and implement strategies*". Similarly, Stalk, Evans and Shulman (1992) describe capabilities as internal attributes that enable a firm to direct and utilise its other resources. In particular, the RBV assumes that firms can be conceptualised as bundles of resources that are heterogeneously distributed across firms (Barney, 1991). Therefore, based on that assumption, Barney (1991) argues that, when firms have resources that are valuable, rare, inimitable and non-substitutable, they can achieve a sustainable competitive advantage (SCA) that is difficult for rival firms to duplicate via capabilities.

Next, in order to move into a more genuinely dynamic framework, this research takes into account the recent critique by Kraaijenbrink et al. (2010), which can be summarised into eight categories:

(1) The RBV has no managerial implications: RBV lacks substantial managerial implications or "operational validity" (Priem and Butler, 2001a). Moreover, RBV never intended to provide managerial prescriptions (Barney, 2005).

(2) The RBV implies infinite regress: RBV proposes that firms should "*strive to obtain second-order capability. The point of this critique is that this step can be extended ad infinitum, leading firms into an endless search for ever higher order*

capabilities. However, "higher order" capabilities cannot be treated as logically prior to or be prioritized as the source of SCA. They are more likely to be interdependent and mutually supporting" (Kraaijenbrink et al., 2010, p. 352).

(3) The RBV's applicability is too limited: Connor (2002) argues that the RBV applies only to large firms and for firms who are motivated to attain SCA. For firms satisfied with their competitive position, the RBV does not bring much insight.

(4) Sustained Competitive Advantage (SCA) is not achievable: RBV has been attacked for its failure to define mechanisms that explain how resources are transformed to a competitive advantage (Wang and Ahmed, 2007).

(5) The RBV is not a theory of the firm: Kraaijenbrink et al. (2010) agree that the RBV is insufficient as a theory of the firm. For an explanation of why firms exist, why their boundaries and internal organisation are as they are, and why they are better at rent creation than markets, specific references to incentives, asset ownership, and opportunism are still required.

(6) VRIN/O is neither necessary nor sufficient for SCA: There are studies arguing that the VRIN/O criteria are not necessary to explain SCA. Foss and Knudsen (2003), for example, argue that "*uncertainty and immobility are the truly basic conditions for an SCA to arise, hence, in order to create SCA, a firm needs both a bundle of resources and the managerial capabilities to recognize and exploit the productive opportunities implicit in them*" (p. 356).

(7) The value of a resource is too indeterminate/uncertain to provide for useful theory and (8) the definition of resource is unworkable: Kraaijenbrink et al. (2010) argue that the definition of resources is too broad and thus the core concepts of RBV are left unclear. Thus, the interesting point here is to look at the impracticalities and vagueness in concepts and definitions of RBV (Kraaijenbrink et al., 2010; Priem and Butler, 2001a; Thomas and Pollock, 1999). They also argue that there are challenging issues for the distinction between those resources that are inputs to the firm and the capabilities that enable the firm to select, deploy, and organise such inputs. This problem is particularly apparent regarding the concept of 'dynamic capability' (see section 2.6).

Furthermore, Kraaijenbrink et al. (2010) also mention that, although the RBV distinguishes different types of resources (physical capital, human capital, and organisational capital) (Barney, 1991), it still treats them all in the same way. Thus, they conclude that the RBV could be refined by explicitly recognising differences among types of resource, whether static or dynamic; tangible or intangible; financial, human or technological; deployed or in reserve; perishable or non-perishable; and so on. In conjunction with this, this study identifies SMEs' resources, such as human and financial capital or access to networks through which these capitals can be acquired (Wu, 2007). This is supported by Bantham et al. (2003), who argue emphatically that an entrepreneurial firm's network, whether personal or through strategic alliances, is essential in order to acquire the vital complementary resources and capabilities necessary for capability development. Therefore, by adopting Wu's (2007) study, this study intends to focus on one of three variables to measure the SMEs' resources: (1) specialised know-how (Amit and Schoemaker, 1993), (2) financial capital (Brush et al., 1997) and (3) managerial ability (Collis, 1991). As exporting SMEs may only need a small subset of all resources, thus managerial ability, which is associated with human resources, it is expected to achieve the goal of making the exporting SMEs more competitive in a dynamic environment. Human capital can be defined as the aggregate of individual human capital within the firm, the strength of which is defined by the knowledge, skill and experience possessed by those in the firm (Wright and McMahan, 2011, Hughes et al., 2016).

Concurrently, Barney and Delwyn (2007) argue that a variety of firms have attempted to develop their human resources to provide sources of sustainable competitive advantage. However, even though those human resources can create value in the firm; it is not a sufficient criterion for competitive advantage (Barney and Delwyn, 2007) because, if human resources are not unique and distinct from those of other competing firms, then this characteristic alone cannot be a source of competitive advantage for any of them.

However, in Penrose's work on RBV (Penrose, 1959), the author states that the biggest constraint to a firm's growth is its management capability. As has been emphasised by Cooper (1981), the most important influence upon the managerial capability of an individual is his/her previous work experience and also the international knowledge of the founder. Realising that people are one of the firm's

greatest assets, business leaders across the globe are coming to rely more upon effective processes to use human resources to formulate strategy. The knowledge, experience, skills and quality of the personnel are taken into account for SMEs strategy implementation (Hughes and Morgan, 2007). Moreover, Cooper et al. (1994) added that the level and range of prior management experience provides the opportunity to cultivate skills for monitoring diverse functions and interacting with different elements, and to develop contacts with potential suppliers and customers.

On the other hand, Zahra (2005) cites Oviatt and McDougall (1998), who state that firms need to gain access to various resources without necessarily owning the resources. This is because entrepreneurial firms are defined by their actions, not by the types of resources they have or control. These entrepreneurial actions lie at the core of firms' ability to develop ways to create value by developing and protecting their unique intangible assets (e.g., organisational cultures, relationships, and innovative abilities), especially those that enhance their entrepreneurial activities in foreign markets. Thus, Brush et al. (2001) argue that entrepreneurs, especially those in young or small medium firms that do not have much resource strength (compared to larger firms), must construct their resource base by identifying, specifying, combining and transforming personal resources into new ventures or initiatives. This is because some resources may be able to be applied directly to the productive process, while others may be complex or may have been combined to be useful.

Next, the RBV has also been criticised for overlooking the market conditions and the research context (Priem and Butler, 2001; Zahra et al., 2014). Zahra et al. (2014) criticise that a firm's knowledge of entrepreneurial firms and actions are limited by a lack of understanding of the context. This is because, "contextualization could enrich the various theoretical perspectives, enhance the creativity and novel analyses and explanations by situating phenomena, research questions, theories and findings in their natural setting" (Zahra et al., 2014, p. 480). This can also help to develop more insightful understanding of the issues under the specific context. Thus, this study takes into account these critiques and limits its focus to exporting manufacturing SMEs that have dynamic characteristics in their nature. Additionally, this review will also explain the RBV tautological theoretical statements in the strategic management field.

2.4.1 Distinction between Resources and Capabilities

'Resources are inputs into the production process and the source of a firm's capabilities—they are the basic units of analysis' (Grant, 1991, p. 118), while '*capability is the capacity for a team of resources to perform some task or activity, and are the main source of its competitive advantage*' (Grant, 1991, p. 119). Additionally, Amit and Schoemaker (1993, p. 35) define resources as '*the stock of available factors owned or controlled by the firm*'. These resources comprise of know-how that can be traded as financial or physical assets, human capital, etc. On the other hand, they defined capabilities as '*a firm's capacity to deploy resources, which are based on the firm's ability to develop, carry, and exchange information through its human capital*'. Although resources and capabilities are conceptually different, both terms are often used interchangeably. Plenty of terminologies that have been created. For instance, Barney (1991) uses the term 'resources' in most of his articles, while other academics prefer other terms, such as capabilities (Grant, 1996; Amit and Schoemaker, 1993), dynamic capabilities (Teece and Pisano, 1994; Eisenhardt and Martin, 2000), core competences (Hamel and Prahalad, 1994) and search routines (Nelson and Winter, 1982). Thus, because of this, it has created a terminological confusion. The example for resources and capabilities are market-based and technological resources (e.g., brands, IT systems) and capabilities (e.g., marketing expertise, IT maintenance).

Furthermore, Helfat and Peteraf (2003) stated that capabilities also have a life cycle (founding, development and maturity) and could act as a potential source of sustainable competitive advantage (Helfat and Raubitschek, 2000). Unlike resources, capabilities are embedded in the organisation and its processes (Makadok, 2001) or routines (Eisenhardt and Martin, 2000). Nevertheless, the main element between resources and capabilities is the ability to cooperate and coordinate within a firm's group members. It is argued that some capabilities may result from a single resource while others may result from coordination of different resources (Grant, 1991). It is also argued that capabilities also have differences, for instance ordinary or operational or substantive capability versus dynamic capability (see further explanation on section 2.6.1). Interestingly, Newbert (2007) highlights capabilities rather than resources, in terms of relevance and potential impact on performance. Resources alone cannot do anything. What is important is the capacity to utilise resources effectively, that is, a

capability (Newbert, 2007). Merrilees et al. (2011) stated that recent work by Liao, Kickul, and Ma (2009) also emphasises the greater relevance and importance of capabilities compared to resources. Resources are relatively stickier than their environment, and resource changes and adaptations are also often lagging behind environmental changes (Teece et al., 1997). Moreover, firms that lack dynamic capabilities will in equilibrium 'earn a living by producing and selling the same product, on the same scale and to the same customer population' (Winter, 2003, p.992; cited in Teece, 2007). Thus, scholars (i.e. Teece et al., 1997) have developed and extended the RBV further in the dynamic capability perspective (see section 2.6).

2.4.2 RBV: Managing the firm's resources in dynamic environments

While dynamism concerns change, the capacity of an organisation to purposefully create, extend, or modify its resource base is considered dynamic (Helfat et al., 2007). Principally, the dynamic environment is proposed as the amount of uncertainty originating from the external environment (Baum and Wally, 2003). Uncertainty is created by instability in the environment that produces insufficiency in the information needed to identify and understand cause-and-effect relationships (Carpenter and Fredrickson, 2001). This situation explains the similar concept of 'situational uncertainty'. Attached to the notion of resources and capabilities then, a firm must look to alter its resources and capabilities to maintain and improve its ability to compete due to dynamism.

Developing new capabilities, competencies and skills that enhance the firm's resource base is likely to be necessary for the firm to compete successfully in increasingly knowledge-intensive contexts. Specifically, many scholars have discussed acquisition, diversification and organisation of resources (e.g., Sirmon et al., 2011; Maritan and Peteraf, 2011). However, Barney, Ketchen and Wright (2011) mention that there is still a lack of discussion in the RBV literature regarding the process of resource development, the micro foundations, and links to sustainability and competitive advantage. In addition, Sirmon et al. (2007) argue that ownership of such a group of resources does not guarantee the development of competitive advantages or value creation (see also Barney and Arikan, 2001). According to Sirmon and Hitt (2003), firms must accumulate, combine and exploit resources into capabilities in order to understand how value creation is achieved from a bundle of resources irrespective of

their perceived value, inimitability and non-substitutability. Additionally, they believe that this phenomenon occurs because of high environmental uncertainty and thus is unlikely to sustain a competitive advantage over time (Morrow, Sirmon, Hitt, and Holcomb, 2007; D'Aveni, 1994; Eisenhardt and Martin, 2000). However, there is a failure to explain how these resources and capabilities could be sustained; therefore, learning and innovation were introduced in this study as possible pathways to overcome this situation (discussed in section 2.7).

2.4.3 RBV: Dynamic not static

Wang and Ahmed (2007) state that the RBV fails to address the influence of market dynamism and firm evolution over time. Thus, in this study, it is expected that solid and static resources themselves may not help a firm to create its performance, but it is all about what firms can do above and beyond the possession of, or access to, resources. More recently, the issues of resource acquisition and resource management have begun to receive researchers' attention. Sirmon, Hitt, Ireland, and Gilbert (2011) contribute to the RBV literature by focusing on what they term resource orchestration, which explicitly addresses the role of managers' actions in effectively structuring, bundling, and leveraging firm resources. The authors compare and integrate two related frameworks (resource management and asset orchestration) to obtain a more precise understanding of managers' roles within RBV and processes or actions they can put in place to facilitate such activity (Barney, Ketchen and Wright, 2011).

Consequently, Sirmon et al. (2007) suggest in their research that one of the effective and efficient ways to manage resources and create value in the dynamic environment is through organisational learning. Eisenhardt and Martin (2000) explain that path-dependent learning mechanisms shape the creation and development of dynamic capabilities. Winter (2000, 2001) also emphasised that to achieve dynamic capability, a firm must undertake deliberate processes of learning.

Generally, learning can be of great importance in helping the firm adapt and maintain an acceptable fit with its environment while seeking to satisfy customers' needs, especially in dynamic environments (Luo and Peng, 1999; Miller and Shamsie, 1996). Additionally, learning provides firms with the potential capacity for *"strategic flexibility and the degrees of freedom to adapt and evolve"* (Zahra and George, 2002). Indeed, value is created only when resources are evaluated, manipulated, and

deployed appropriately within the firm's environmental context (Lippman and Rumelt, 2003). In addition, Castanias and Helfat (2001, p. 665) argue that *"the skills of top management combined with other firm assets and capabilities jointly also have the potential to generate rent"*. With regard to this situation, Sirmon et al. (2007) believe that, in this new and dynamic environment with uncertain requirements, firms may need to recombine resources to develop new capabilities, and they may need to design and employ different leveraging strategies to exploit their new and current capabilities. This is in conjunction with Teece et al.'s (1997) assumption that dynamic capabilities are naturally built rather than bought, and that their creation and their evolution rely on the role of learning mechanisms (Zollo and Winter, 2002) embedded in organisational processes.

In sum, the RBV has been criticised for being static and thus fails to account for not only how resources are managed but also for how they change or evolve over time and need to be improved. Hence, there is a need to make those resources and capabilities more 'dynamic'. Thus, this study suggests that the dynamic capabilities approach is a more comprehensive and integrative way of understanding the sources of competitive advantage. Additionally, because of the importance of resources and the dynamic nature of the manufacturing industry, the resource-based view (RBV) and dynamic capabilities offer good lenses through which to examine the development of resources and capabilities of exporting SMEs, specifically in Malaysia.

2.5 Moving towards Dynamic Capabilities (DCs)

Teece (2014) stated that, ideally, in order to sustain a firm's performance in a dynamic environment, dynamic capabilities and good strategy are a must. Since the RBV framework has been described as a static framework that struggles to explain competitiveness in a dynamic market, the dynamic capabilities perspective was introduced. Similarly, Gnizy et al. (2014) stated that the RBV does not explain how firms sustain a competitive advantage in changing and uncertain environments and thus the DCs framework was developed to fill these gaps. This study argues that firms should develop dynamic capabilities that will enable them to generate and reconfigure new resources for a sustainable competitive advantage. This is also supported by other researchers (i.e. Teece et al., 1997; Zheng and Bingxin, 2010) where they suggest that SMEs must develop their dynamic capabilities in order to survive the competition in a

fast changing environment. It is because building dynamic capabilities are the most unique and difficult-to-imitate assets a firm can use to achieve and sustain a competitive advantage (Griffith and Harvey, 2001). Generally, when the environment is dynamic, firms are especially challenged to revise their routines or capabilities (March, 1991) and managers are not meant to create 'once and for all' solutions to their operations, but should continually revise the capabilities that they have developed (Zahra et al., 2006). Writing on this phenomenon, Zollo and Winter (2002) distinguish two types of routines: *those employed in the operational activity* of the firm and those dedicated to the *alteration of operating routines*, which are known as dynamic capabilities. This classification has increasingly been adopted in recent models of dynamic capabilities, for instance in Helfat and Peteraf (2003), Zahra and George (2002) and Zahra et al.'s (2006) research (Cepeda and Vera, 2007). In addition, Teece (2014) describes ordinary capabilities as a capability that involves the performance of administrative, operational, and governance-related functions that are necessary to accomplish tasks (Teece, 2014). Moreover, Zahra et al. (2006) classified a firm's substantive capabilities as the set of things that it can do. Hence, based on this concept, this research implies whether those operational activities as a substantive capability (one type of ordinary capability) lead to a related alteration of operating routines, which is a dynamic capability. In addition, there are various modes of dynamic capability, such as leveraging existing resources, creating new resources, accessing external resources, and releasing resources (Daneels, 2010). However, these modes of dynamic capability have remained inside a 'process black box' (Priem and Butler, 2001a: 33; Zott, 2003; Pavlou and Sawy, 2011), and there is a lack of knowledge about how dynamic capability is exercised, that is, how and why resource alteration modes are used?

Furthermore, the recent statement from Teece (2014) in Journal of International Business stated that:

"*Competition and imitation will over time, lead to the erosion of any advantage from ordinary capabilities. This may occur slowly, but can be rapid in contexts where the absorptive capacity of external organisation is high*" (Teece, 2014, p. 20).

In other words, the ordinary capabilities that the firms have, such as marketing capabilities, innovation capabilities or human resource capabilities will be eroded. Thus, the role of DC is to improve it or to build new one(s).

Above all, the literature on the empirical research on dynamic capability and the distinction between dynamic and substantive capabilities (discuss in section 2.6.1) is in its initial stages, and there is still a lot of confusion concerning the categorisation of dynamic and substantive capabilities (Barr, 2004; Winter, 2003; Zahra et al., 2006). To begin this examination, the next section discusses what dynamic capability is as well as the types of dynamic capabilities.

2.5.1 Dynamic Capability (DC): Definition

McDougal et al. (1994) discuss that it is difficult for a domestic firm to enter an international market, as it would need to make changes to its organisational routines in order to adapt to international environments. This is perhaps one reason why some international entrepreneurs and their firms typically avoid domestic path dependence by establishing ventures that are international from their inception or very soon thereafter, easing the firm's ability, for instance, to adapt its routines for managing multicultural workers, coordinating resources in different nations, and also for targeting customers in several countries. This phenomenon also leads back to the concept of dynamic capabilities, which examines changes in organisational capabilities (Helfat and Peteraf, 2003). However, understanding the matter is made difficult because there are many definitions of dynamic capability from various scholars. Teece et al. (1997, p. 515) define dynamic capability as the *"firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments"*, often referred to as routines or repetitive patterns of task-oriented actions often involving multiple actors (Nelson and Winter, 1982; Winter, 2003). Eisenhardt and Martin (2000) extended the original definition of dynamic capabilities to include the creation of market exchange, as well as the response to exogenous change. It allows the firms to shape their environment, and that is what Eisenhardt and Martin (2000) intended for the definition of dynamic capabilities. Zollo and Winter (2002, p. 340), define DC as a *"learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness*". Additionally, this study adopts the definition from Teece (2007) most recently defines DC as *"the capacity (a) to sense and shape opportunities and threats, (b) to seize opportunities, and (c) to maintain competitiveness through enhancing, combining, protecting, and when necessary, reconfiguring the business enterprise's and tangible*

assets" (p. 1319). Moreover, this study also considers the definition from Winter (2003), which defines dynamic capabilities as *"those that operate to extend, modify or create ordinary capabilities"*. Winter's definition is considered because it does not mention a volatile or changing environment as a necessary component of a dynamic capability (Zahra et al., 2006). This is because the definition in this study is focused on the dynamism of the capability itself and not the environment. Zahra et al. (2006) found that those definitions of DC share the idea that DC ensures that a firm's substantive capabilities change over time (Rindova and Kotha, 2001), and some refer to "*dynamic capabilities only as capabilities that respond to changes in the environment*" (p. 923).

On the other hand, much literature is clear that capabilities are processes and not resources (Ambrosini and Bowman, 2009); thus, a dynamic capability is a process of some kind of learning that impacts upon resources. Vera and Cepeda (2007) cite dynamic capabilities as organisational routines; thus, learning and knowledge management processes guide their development, evolution, and use (Eisenhardt and Martin, 2000). Learning allows tasks to be performed more effectively and efficiently as an outcome of experimentation, reflecting on failure and success (Ambrosini and Bowman, 2009).

Furthermore, some literature discusses that there are various rankings of capabilities (e.g. Collis, 1994). As cited in Schilke (2014), there are three levels of capability (basic, first-order and second-order). For instance, the basic levels of capabilities were also known as ordinary, substantive, or zero order capabilities (Winter, 2003; Zahra et al., 2006). On the other hand, the first order capabilities allowed the firm's resources to be changed. The next level of capabilities is known as second-order, where it is used to improve or develop the first order. However, in this study, the researcher is avoiding using the term of higher order or level/hierarchy of capability. The researcher will map the capabilities into dynamic capabilities and substantive capabilities. This study argues that dynamic capability is to improve substantive capability (Eisenhardt and Martin, 2000). As cited in Gnizy et al. (2014, p. 479), "*DC is different from operational capabilities (substantive capabilities). DC is not specific capabilities such as manufacturing, marketing, supply chain, or R&D. Instead, they are agents of evaluation and change that permit firms to assess what changes to their resource and capabilities base is needed to remain competitive, particularly in the*

face of changing market environments" (Wilden et al., 2013). In other words, operational capability allows an organisation to make a living in the present, while DC alters the way an organisation makes its living (Fainsmidt et al., 2016; Helfat and Winter, 2011). Furthermore, Easterby-Smith and Prieto (2007, p. 237) stated that dynamic capabilities are dedicated to the modification of operational routines. Thus, if the firms have no substantive capability, there is no need for a dynamic capability.

To be clearer, Pavlou and Sawy (2011) provided a list of dynamic capabilities and this is now examined in an effort towards making the terminology clearer and to highlight the vague concepts in the dynamic capability stream. Ideally, the list of dynamic capability that was introduced by Pavlou and Sawy (2011) relies on the idea of dynamic capability from Teece (1997) and Eisenhardt and Martin (2000). Table 2.1 summarises the definitions of the dynamic capabilities that are proposed by Pavlou and Elsawy (2011) is closely linked to the dynamic capabilities literature through underlying routines.

Table 2.1 Definition of dynamic capabilities and links to the dynamic capabilities literature

Capability	Definition	Basic routines
Sensing Capability	The ability to spot, interpret, and pursue opportunities in the environment.	• Generating market intelligence (Galunic and Rodan, 1998). • Disseminating market intelligence (Kogut and Zander, 1996). • Responding to market intelligence (Teece, 2007).
Learning Capability	The ability to revamp existing operational capabilities with new knowledge.	• Acquiring, assimilating, transforming, and exploiting knowledge (Zahra and George, 2002).
Integrating Capability	The ability to embed new knowledge into the new operational capabilities by creating a shared understanding and collective sense-making.	• Contributing individual knowledge to the group (Okhuysen and Eisenhardt, 2002). • Representation of individual and group knowledge (Crowston and Kammerer, 1998). • Interrelation of diverse knowledge inputs to the collective system (Grant, 1996).
Coordinating Capability	The ability to orchestrate and deploy tasks, resources, and activities in the new operational capabilities.	• Assigning resources to tasks (Helfat and Peteraf, 2003). • Appointing the right people to right tasks (Eisenhardt and Brown, 1999). • Identifying synergies among tasks, activities, and resources (Eisenhardt and Galunic, 2000). •Orchestrating activities (Henderson, 1994).

(Sourced from Pavlou and ElSawy, 2011)

For this study, the researcher focuses on the sensing, learning, integrating and coordinating processes that underlie dynamic capabilities (Pavlou and Elsawy, 2011) (refer to Table 2.1). Sensing involves search and exploration across technologies and markets (Teece, 2007), such that it reflects the organisational capacity to learn about customers, competitors, and the broader market environment (Day, 1994). According to Pavlou and ElSawy (2011), sensing capability is to generate, disseminate, and respond to market intelligence. Next, learning capability refers to the action of generating new knowledge on technological breakthroughs. It also captures the acquisition, assimilation, transformation, and exploitation of knowledge. Next, integrating capability refers to the routine of being effective in integrating knowledge and interaction patterns. It captures the contribution, representation, and interrelation of individual input to the entire business unit. The coordinating capability captures resource allocation, task assignment, and synchronisation of the activities. In sum, the earlier discussions indicate that sensing, learning, integration and coordination dynamic capabilities, seem to be important processes that facilitate change within an organisation (Protogerou et al., 2012).

The next section discusses the types of dynamic capabilities. In addition to different types, there is also a distinction between dynamic capability and substantive capability. Therefore, there is a need to distinguish the substantive capability and dynamic capability. Thus, a set of dynamic capabilities will be identified in the next section.

2.5.2 Types of Dynamic Capabilities (DCs)

Just as there are different classes of resources, there are also different types of dynamic capabilities (Fainsmidt et al., 2016). Wang and Ahmed (2007) have identified three main component factors of dynamic capabilities, namely adaptive capability, absorptive capability and innovative capability.

Adaptive Capability - Adaptive capability is defined as a firm's ability to identify and capitalise on emerging market opportunities (Chakravarthy, 1982). Chakravarthy distinguishes adaptive capability from adaptation. The adaptive capability focuses more on effective searching and balancing exploration and exploitation strategies (Staber and Sydow, 2002). This type of 'balancing' act is brought to a strategic level

and is linked to the resource perspective: adaptive capability is manifested through strategic flexibility – the inherent flexibility of the resources available to the firm and its flexibility in applying these resources (Sanchez, 1995). The development of adaptive capability is often accompanied by the evolution of organisational forms. Other empirical studies also reveal that the ability to adapt to environmental changes and align internal resources with external demand is critical to firm evolution and survival in several industries. Firms that have high levels of adaptive capability exhibit dynamic capabilities (Gibson and Birkinshaw, 2004; Teece et al., 1997).

Absorptive Capability - Cohen and Levinthal (1990, p. 128) refer to absorptive capacity as *"the ability of a firm to recognise the value of new, external information, assimilate it, and apply it to commercial ends … the ability to evaluate and utilise outside knowledge is largely a function of the level of prior knowledge. It is also refer to a firm's ability to exploit its information"* (p. 131), although it was operationalised in terms of the firm's stock of prior knowledge proxied by an investment in R&D. "*The concept of absorptive capacity can best be developed through an examination of the cognitive structures that underlie learning*" (Cohen and Levinthal, 1990, p. 129). Firms with higher absorptive capability would be expected to demonstrate stronger ability to learn from partners, integrating external information and transforming it into firm-embedded knowledge. Hence, that is why networking helps the firm to improve its absorptive capacity by increasing opportunities to investigate and interpret information (Hughes et al., 2014). Additionally, firms must have the appropriate absorptive capacity in order to select, acquire and integrate knowledge from other sources (Cohen and Levinthal, 1990). In addition, Zahra and George (2002) re-conceptualise absorptive capacity as a "*dynamic capability pertaining to knowledge creation and utilization that enhances a firm's ability to gain and sustain a competitive advantage*" (p. 185). Not only that, they also estimate that absorptive capability is a multidimensional construct and propose four component factors of the absorptive capability construct: knowledge acquisition, assimilation, transformation and exploitation. In their theoretical paper, they basically look at the processes involved in absorptive capacity and classify them into two groups, 'potential absorptive' and 'realised absorptive' capacity, with 'potential' being focused on acquiring knowledge and 'realised' being focused on transformation and exploitation of that knowledge. However, the refining version of the firm's absorptive capacity

definition from Lane, Koka and Pathak (2006) appear more detailed. They combine the insights by Cohen and Levinthal's (1990) definition and they define absorptive capacity as a firm's ability to utilise externally held knowledge through three sequential processes: *"(1) recognizing and understanding potentially valuable new knowledge outside the firm through exploratory learning, (2) assimilating valuable new knowledge through transformative learning, and (3) using the assimilated knowledge to create new knowledge and commercial outputs through exploitative learning"* (p. 856).

Innovative Capability - Innovative capability refers to a firm's ability to develop new products and/or markets, through aligning a strategic innovation orientation with innovative behaviours and processes (Wang and Ahmed, 2004). As indicated in the definition, innovative capability encompasses several dimensions. Prior research has emphasised different combinations of these dimensions. For example, Schumpeter (1934) suggests a range of possible innovative alternatives, namely, developing new products or services, developing new methods of production, identifying new markets, discovering new sources of supply and developing new organisational forms. In certain industries (i.e., biotechnology firms), firms' innovative capability is a critical factor for firms' evolution and survival. According to Wang and Ahmed (2007), the more innovative a firm is, the more it holds dynamic capabilities. Furthermore, Zahra et al. (2006) argue that innovative capability could be either a dynamic capability or substantive capability depending on the circumstances.

Conceptually, Wang and Ahmed (2007, p. 39) add up that "*adaptive capability, absorptive capability and innovative capability are the most important component factors of dynamic capabilities and underpin a firm's ability to integrate, reconfigure, renew and recreate its resources and capabilities in line with external changes*". According to Nonaka (1991), successful firms are those with the ability to consistently create new knowledge, disseminate it throughout the organisation, and quickly embody it in new technologies and products. Simultaneously, the concept of knowledge-based view (KBV) needs to be considered through this phenomenon. This is because, using RBV as a "meta theory" behind internationalisation will relate to its static nature that does not allow explaining how the resources can be created, used, reconfigured, and shared over time within the firm. Hence, Kuilavanen et al. (2010)

suggest that KBV is more suitable in order to focus on the dynamic processes (i.e. capabilities evolve and develop).

The KBV perceives that knowledge is the key resource for sustaining a competitive advantage as well as the most important strategic resource (Grant, 1996). Knowledge based view suggests that knowledge assets, such as technical and organisational know-how, are what support a firm's competitive position, since they enable firms to differentiate themselves positively from their competitors (Teece, 2011). In addition, KBV of the firm can be seen as an extension to the RBV of the firm (e.g. Barney, 1986). RBV states that the resources or capabilities that contribute to a sustainable competitive advantage should be valuable, rare, inimitable and non-substitutable (Barney, 1991). Hence, Amit and Schoemaker (1993) refer to capabilities as the capacity of a firm to effectively and efficiently use resources to produce different products and services. Accordingly, Bowman and Ambrosini (2003) stated that KBV are an extension of the dynamic capabilities theory. They examined that new capabilities were developed through six modes of resource creation: reconfiguration of support activities, reconfiguration of core processes, leverage of existing resources, encouraging learning, provoking learning and creative integration. Furthermore, they argued that the terms KBV and DCV could be used interchangeably. This is because the basic ideas of the KBV are similar to the so-called dynamic capabilities view (see e.g., Teece et al., 1997; Teece, 2007). Both approaches focus on creating, transferring, using, protecting, and sharing bits of knowledge, resources and capabilities as sources of competitive advantage in dynamic environments. Above all, the failure to explain how resources and capabilities are sustained in competitive environment and the importance of KBV as an extension of the RBV perspective will then introduce learning and innovation as possible pathways to develop firm's dynamic capabilities. This is because, Antonacopoulou et al. (2005) stated that dynamic capabilities emerge as the result of the RBV embracing the organisational learning theory.

2.6 Learning and Innovation as possible pathways to develop dynamic capabilities

Learning and innovation are separate constructs that are interrelated. In general, learning and innovation are seen as sources of competitive advantage (Kim and Atuahene-Gima, 2010; Mavondo et al., 2005). This is supported by Uhlenbruck et al. (2003), where they stated that organisational learning and the resource-based view are important capabilities in a dynamic environment, particularly to achieve a competitive advantage (Makadok, 2001). Scholars such as Mavondo et al. (2005) view learning and innovation as separate constructs which lead to different types of activities; in this study there are explorative and exploitative forms of learning and innovation. In this study, it shows that learning could be explorative and generative, or simply for the purposes of refinement. For innovation, it could be radical innovation or incremental innovation.

In general, learning exploration is defined as "*the essence of exploration is experimentation with new alternatives*" (March, 1991, p.85)", while learning exploitation is defined as "*learning that is gained via local search, experiential refinement, and selection and reuse of existing routines*" (Baum, Li and Usher, 2000, p. 768). In detail, according to Atuahene and Murray (2007), learning exploration provides new insights into the design of new features and benefits of a product and it ensures that the new product will differentiate from others (Katila and Ahuja 2002). However, there are high risks and costs associated with exploration (i.e. inefficiencies in problem solving) that resulted from too many new ideas in a firm. In addition, those risks and costs of exploration may be challenging for small-to-medium firms because they tend to lack an adequate structure for information collection, analysis, and use (Stinchcombe, 1965), whereas, for learning exploitation, it provides greater opportunities for new combinations and recombination of existing knowledge from which new insights may emerge (Cyert and March, 1963). Too much exploitation within a familiar knowledge base makes the newer directions of development difficult (Atuahene and Murray, 2007). Hence, high exploitative learning may also lead to inefficiency and errors because of the "familiarity trap" (Ahuja and Lampert, 2001, p. 526; Atuahene and Murray, 2007). Although Atuahene and Murray (2007) speak about exploration and exploitation of learning from the perspective of new product development, it is still reasonable for it to be applied to the perspective of DC

development. Generally, new product development measures a critical determinant of firm performance and survival, thus, the same goes to DC. DC also measures a critical determinant of firm performance and as a source of competitive advantage (Easterby-Smith et al., 2009; Teece et al., 1997).

Next, innovation exploration will lead to radical innovations that are designed to meet the needs of emerging customers or markets (Benner and Tushman 2003, p. 243; Danneels, 2002). Exploratory innovations also require new knowledge or departure from existing knowledge (Benner and Tushman, 2002; Levinthal and March, 1993; McGrath, 2001). For innovation exploitation, it will lead to incremental innovations that are designed to meet the needs of existing customers or markets (Benner and Tushman, 2003, p. 243; Danneels, 2002). Exploitative innovations also build on existing knowledge and reinforce existing skills, processes, and structures (Benner and Tushman, 2002; Levinthal and March, 1993**;** Jansen et al., 2006, p.1662)

In addition, Zahra et al. (2006) stressed that the idea of learning from experience is more relevant for established firms, but creativeness and trial and error processes are more helpful for new venture firm. Thus, this study is focusing on how small-to-medium firms could use their creativity as well as developing their dynamic capability in order to achieve their competitive advantage. Peng (2001) added that the key success for SMEs is not necessarily to go through the "stage" model as suggested by Johansan and Vahlne (1977). The key point here is to depend on the firm's tacit knowledge on internationalisation (Liesch and Knight, 1999) and in turn this could provide the firm with a competitive advantage. '*A key aspect of organizational learning is knowledge acquisition …… gaining understanding from experience or observation, and environmental scanning*' (Uhlenbruck et al., 2003, p. 261).

Furthermore, as cited in Uhlenbruck et al. (2003), the dynamic capabilities development allows firms to create new resources and in turn enable them to gain new opportunities (Eisenhardt and Martin, 2000; Teece et al., 1997). In this case, learning is vital for dynamic capabilities. This is because Bowman and Ambrosini (2003), Easterby-Smith and Prieto (2007), Teece et al. (1997) and Winter (2003) have stated that learning is a specific type of process underlying the development of DCs. This is supported by Zollo and Winter (2002), when they developed a framework of learning mechanisms that support the development of DCs. In turn, Zollo and Winter (2002)

also stated that DCs are the result of learning to shape operational capabilities. Further, according to Mahoney (1995) and Zollo and Winter (2002), "*the process of learning is a central element in the creation and renewal of dynamic capabilities*" (Ali et al., 2010, p.369; Evers et al., 2012).

In detail, learning and innovation and the resource-based view are connected because they provide the foundation for the firm to enhance their resources and capabilities. However some studies (i.e. Hult et al., 2004; Calantone et al., 2002) have argued that learning will lead to innovation and then this could help in creating business performance. However, in this study, learning and innovation are treated as two different constructs which then were hypothesised to develop the dynamic capabilities processes. The researcher suggests that learning and innovation activities are each one type of dynamic capability and goes on to divide learning and innovation into two (2) types: 1) explorative learning and innovation and 2) exploitative learning and innovation. This is supported by Piening and Salge (2015), when they suggest that firms can improve their chances of success by pursuing several innovation activities (i.e. exploration and exploitation) at the same time. It is also argued that the wider the scope of innovation activities would contribute to novel knowledge recombination (e.g., Laursen, 2012). Furthermore, this study also highlights that, through a process of learning and innovation activities (exploration), a firm might create a set of new (emerging) capabilities and, through another process of learning and innovation (exploitation), it might refine (branch) the initial capabilities. Those capabilities are possibly going to affect the performance. The following section will review and provide definitions of exploration and exploitation of learning and innovation. /should be emerging and branching.

2.7 Dynamic Capabilities Development: Emerging Capabilities and Branching Capabilities

Linked with the above discussion, this identifies 'learning and innovation activities' as two types of dynamic capabilities, even though learning is the basis of dynamic capabilities and guides their creation and evolution (Zollo and Winter, 2002; Eisenhardt and Martin, 2000). However in this section, learning is referring to learning as a dynamic capability. As cited in Evers et al. (2012), dynamic capability learning involves "*a process by which repetition and experimentation enable tasks to be performed better and quicker*" (Teece, Pisano, and Shuen 1997, p. 520). In addition, this research claims that learning and innovation activities may lead to two other modes (processes) of capabilities, which are emerging capabilities and branching capabilities.

Next, the researcher will break down the dynamic capabilities into emerging capabilities and branching capabilities. The terms 'emerging' and 'branching' are drawn from Helfat and Peteraf (2003) and Branzei and Verstinky (2006). To be more specific, below are the explanations on emerging capability and branching capability processes.

2.7.1 Capability Emerging Process and Capability Branching Process

Based on theoretical studies, Branzei and Verinsky (2006) cite that some authors conceptualise managerial decisions and flexible strategic choices as essential stepping stones in the capability-building process (Eisenhardt and Martin, 2000; Helfat and Peteraf, 2003; Zahra and George, 2002). At this stage, the researcher refers to Teece and Pisano (1994) where they define dynamic capabilities as *"the subset of the competences/capabilities which allow the firm to create new products and processes and respond to changing market circumstances"* (p. 541). Here, the researcher captures the "sensing capability" and "learning capability" as two of the emerging capabilities, and it is likely that those capabilities might lead to improved business performance through some kind of relationship. Next, the idea of capability branching is taken from Helfat and Peteraf's (2003) capability life cycle. The concept is that capabilities go through stages of founding, developing, and then maturing. The idea is that each stage represents an improvement in the performance of the capability, especially in the skill level. Once the capability reaches maturity, or sometimes maybe

even during development, it can branch in terms of retirement, retrenchment, renewal, replication, redeployment or recombination. This branching process represents a change in the capability, often driven by external (changes in demand, technology, raw material or government policy) or internal (managerial decision) factors (Helfat and Peteraf, 2003). However, although external factors might have an impact on the branching process, it also depends on the interference of the manager's decision. In addition, the choice of the type of branch also depends on particular types of capability and the development stage. The researcher is going to focus on a specific type of branching; thus, the 'integrating capability and coordinating capability' have been captured as branching capabilities.

Above all, the ability to internationalise and succeed in foreign markets is one of the roles of a firm's internal capabilities (Autio et al., 2000; McDougall et al., 1994; Zahra et al., 2000; Knight and Cavusgil, 2004). Additionally, the creation of new knowledge is believed to lead to the development of organisational capabilities (Knight and Cavusgil, 2004), and in turn will lead to superior performance, particularly in highly competitive or challenging environments (Nelson and Winter, 1982).

Furthermore, with a dynamic and uncertain environment, it is necessary for SMEs or new ventures to engage in cross-border activities in order to ensure their growth and survival, as suggested by D'Souza and McDougal (1989). Therefore, Autio et al. (2011), in their formative research, found that resource fungibility (ability to transfer resources to alternate uses) is one of the strong moderating factors required in order to enhance the diversity of possible process combinations of resources and capability, and also act as a factor in the firm's formation of new capabilities, especially in 'situational uncertain' environments. 'Situational uncertainty' is the combination of firm-specific, context-dependent ambiguity, variability, and complexity of institutional, product, and market conditions where the new venture's appropriate course of action is not immediately apparent. Fungible resources can be found in human resources as well as in technology resources (Autio et al., 2011). In particular, the resource fungibility of human capital endowments plays a key role in the speed with which new processes are generated or modified. In several firms, entry into multiple foreign markets is made possible by the ease with which employees can be moved between markets or if employees possess skills to operate in very different

markets (Autio et al., 2011; Rindova and Kotha, 2001). Additionally, the resource demands on firms also changing over time and keep growing, and nowhere is that more apparent than when a firm is internationalising.

Last but not least, there is a "*tautological issue between dynamic capabilities and sustains competitive advantage*" (Cepeda and Vera, 2007, p. 427). Researchers argue that the DC-performance relationship is not direct. There is another factor between the relationship of DC and performance. Thus, the researcher argues that substantive capabilities could be one of the direct effects towards business performance. The next section will discuss the substantive capabilities and types of substantive capability.

2.8 Substantive capabilities

Easterby-Smith and Prieto (2007, p. 237) defined substantive capability (SC) as "*operational capabilities or routines that are geared towards the operational functioning of the organisation*". Slightly similar, Ali et al. (2010, p. 367) defined SCs as "*the purposive combination of resources that enable an organisation to perform operational activities such as logistics, marketing, and sales or manufacturing*". In addition, as cited in Ali et al. (2010), Helfat and Peteraf (2003) see an operational capability as generally involving the performance of an activity. In this study, the researcher uses the term operational capability and substantive capability interchangeably. For Winter (2003), he define SCs as the set of abilities and resources that go into solving a problem or achieving an outcome as a substantive (or 'ordinary') capability.

Next, Barbero et al. (2011) and Ali et al. (2012) have listed a few types of functional (managerial) capabilities. Based on the researcher's understanding, substantive capabilities are functional or fundamental capabilities. As listed by Barbero et al. (2011), there are four functional capabilities (human resource, organisational capability, marketing and financial). On the other hand, Ali et al. (2012) only conceptualise operational capabilities as comprising both marketing and technology related capabilities.

Human resources capabilities- According to human capital theory (Becker, 1975), human resources capacity is one of the most important elements in the growth of capabilities (Hansen and Hamilton, 2011). It is also an important factor in an expansion strategy based on innovation. In the development of new products and the improvement of existing products by the firm through innovation policies, human resources are an essential factor in a large number of investigations (Freel and Robson, 2004).

Organisational capabilities- This term refers to tasks such as planning, coordinating activities, efficient allocation of resources and information management, and the like (Castanias and Helfat, 2001; Chan et al., 2006). Usually, this type of capability has been considered to be an essential factor for the development of a market expansion process, in both national and foreign markets (Autio et al., 2000; Havnes and Senneseth, 2001; Sapienza et al., 2006; Zahra et al., 2000). One particular organisational capability that has been put forward as a sustainable advantage is learning (Teece et al., 1990).

Marketing capabilities- Feeser and Willard (1990) defend the role of market orientation in the early stages of a firm's growth. According to the authors, a business's growth requires its adaptation to the current and future needs of its clients, with particular emphasis given to adequate management of the salesforce (Wijewardena and Cooray, 1995). In addition, marketing capabilities are a key factor in the development of both market expansion strategies and strategies for developing innovative products to satisfy existing markets (Chen and Martin, 2001).

Financial capabilities- Covin and Slevin (1989) argue that the importance of financial planning is to maintain sustainable growth rates, while Winborg and Landstrom (2000) found that financial management by bootstrapping has a positive effect on growth. The ability to manage financial resources adequately is not only a determining factor in market expansion strategy, but also in the development of new products. Innovation demands increase financing, which usually requires appropriate human and technological resources (Freel and Robson, 2004).

Technological/Innovative Capability - Innovative capability refers to a firm's ability to develop new products and/or markets, through aligning strategic innovative orientation with innovative behaviours and processes (Wang and Ahmed, 2004). As indicated in the definition, innovative capability encompasses several dimensions. Prior research has emphasised different combinations of these dimensions. For example, Schumpeter (1934) suggests a range of possible innovative alternatives, namely, developing new products or services, developing new methods of production, identifying new markets, discovering new sources of supply and developing new organisational forms.

In this study, the researcher is interested in considering the marketing capabilities and also technological/innovation capability as part of the study's focus. This is because dynamic capabilities itself "*do not directly affect output for the firm in which they reside, but indirectly contribute to the output of the firm through an impact on operational capabilities*" (Helfat and Peteraf, 2003, p. 999). Thus, Cepeda and Vera (2007) suggest including an operational (substantive) capability in order to eliminate the tautological issue of dynamic capabilities and performance. In addition, the researcher assumes that both marketing and technological/innovation could act as substantive capabilities to alter other types of capability. This is because, as stated by Danneels (2002) and Day (1994), marketing and technological capabilities are two of the most important substantive capabilities. Furthermore, the action of dynamic capabilities is primarily depending on the firm's operational capabilities (Protogerou et al., 2012). Therefore, the researcher argues that the presence of substantive capability is important, in order to enhance the DC–performance relationship.

Above all, this research argues that the substantive capability that the firms have will provide the basis of dynamic capability. The accumulated knowledge generated by organisational learning is, of course, not static but dynamic as organisations continue to learn (Deeds et al., 1999). In this case, Sirmon and Hitt (2003) argue that entrepreneurs and managers are the key agents of change, which could be translated into the process of dynamic capability.

Having distinguished substantive from dynamic capabilities and offered a definition of dynamic capabilities, the researcher will then build on the literature to develop a set of hypotheses that will further define the relationships among learning and innovation, dynamic capabilities, substantive capabilities and business performance.

Table 2.2 Marketing and Innovation capabilities and performance

Vorhies et al. (1999)	Market-driven business units develop higher levels of vital marketing capabilities (market research, pricing, product development, channels, promotion, and market management) than less market-driven firms and significantly outperform these rivals in terms of organizational performance.
Hooley et al. (2005)	Marketing resources affect financial performance indirectly, by creating customer satisfaction and loyalty and superior market performance.
Song et al. (2005)	The effect of technological capabilities is independent of the degree of technological turbulence; marketing capabilities have a stronger effect in stable environments. Their complementary effect is significant only in high turbulence environments.
Galbreath and Galvin (2008)	Resources and capabilities are more important than industry structure. In service firms, resources are more important for explaining performance variation than in manufacturing firms. In both manufacturing and services firms, intangible assets and capabilities explain performance variation, but tangible resources do not.
Ruiz-Ortega and García-Villaverde (2008)	In the interactions of technological capabilities, marketing capabilities, and entry strategies, different combinations have varying effects on firm performance.
Chen et al. (2009)	Organizations with different resource combinations follow different growth strategies. Technological capability moderates the relationship between growth strategies and new venture performance.
Morgan et al. (2009)	Marketing capabilities have direct, complementary effects on both revenue and margin growth rates. Brand management and customer relationship management capabilities have opposing effects on revenue and margin growth rates.
Ramaswami et al. (2009)	Market-based capabilities have significant influences on selected business processes, which positively affect financial performance.
Vorhies et al. (2011)	Improving brand management and customer relationship management affects financial performance. Firms cannot engage in both exploration and exploitation at high levels without risking a negative impact on customer-focused marketing capabilities.

Source: Wilden and Gudergan (2015)

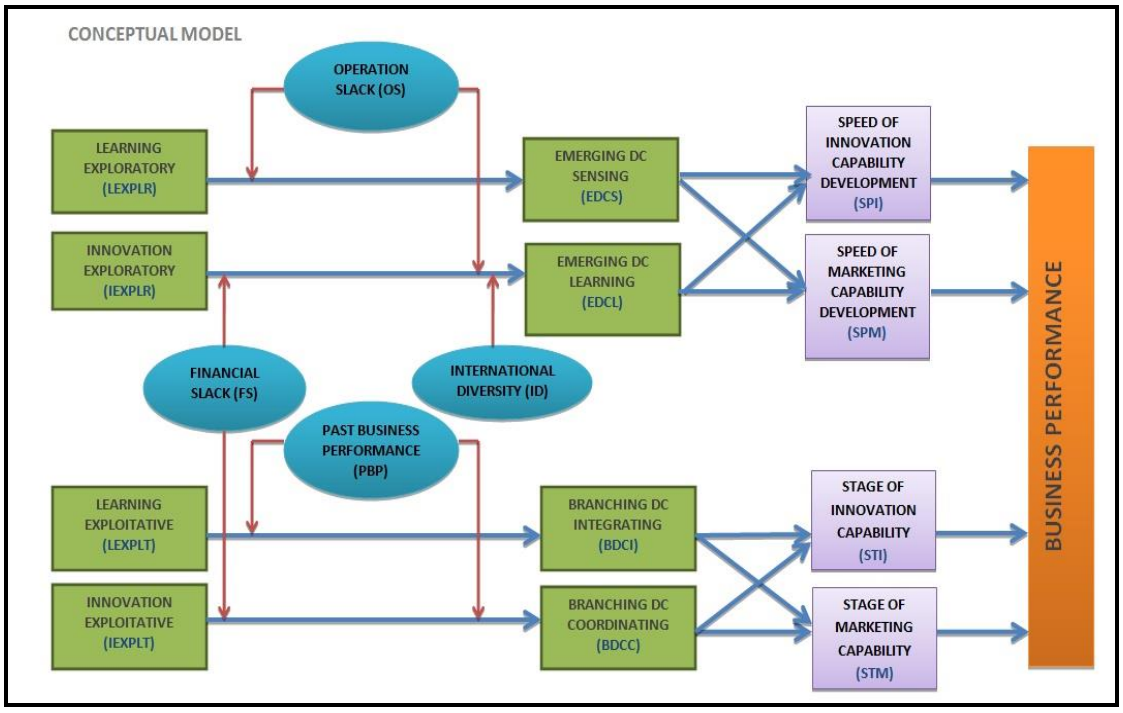
CHAPTER 3 : CONCEPTUAL MODEL AND HYPOTHESES

3.0 Introduction

The objective of this chapter is to present the proposed conceptual model based on the preceding literature review chapter. The model (see Figure 3.1) explains the key constructs of interest in this study and the relationships hypothesised to exist among them. The model for this study consists of five main parts:

1. Exploratory and exploitative activities as independent variables, which consists of both their learning and innovation forms.
2. Resource slack, former resource slack and international diversity as moderating factors towards dynamic capabilities development.
3. Four different sets of dynamic capabilities acting as dependent and control variables.
4. The substantive capabilities of speed and stage of marketing and innovation capabilities that have direct effect onto business performance.
5. The dependent variable of business performance, as an outcome of the whole process.

Figure 3.1 Conceptual Model



3.1 Research Hypotheses Development

Fourteen hypotheses have been developed based on a review of current literature and a conceptual framework (see Figure 3.1). This hypothesised model consists of two different forms of learning and innovation (i.e. exploration and exploitation), which are then expected to affect the formation of dynamic capabilities through the moderating factors. The formation of DC consists of four different types of DC which was introduced by Pavlou and Sawy (2011) (i.e. sensing, learning, integrating and coordinating capabilities). The moderating factors that are involved in this model are justified by the resource slack (financial slack, operation slack and past business performance), and international diversity. Resource slack (RS) in this study is defined as the excess resources that become important determinants of organisational structure, growth, and performance (Penrose, 1959). Additionally, Nohria and Gulati (1996) added that slack resource refers to the firm's stock of additional resources available during a given planning cycle. The reason of having RS as the moderators is because, according to Voss et al. (2008), there is a conflicting finding on whether organisational slack promotes exploration or exploitation. RS is one of the organizational characteristic that would facilitate exploratory learning (Danneels, 2008, p.522). In addition, the existence of slack could possibly lead to cautious

decision-making, which reduces exploration and increases incremental adaptation, or exploitation (Tan and Peng, 2003).

RS also allows firm flexibility in managing changes in response to a dynamic environment (Moreno et al., 2009). These four moderating factors are predicted to give a different impact on the relationship between exploration and exploitation activities towards the development of the DC. Later on, these four sets of dynamic capabilities that been developed from that particular relationship are argued to impact the business performance. However, the DC-performance relationship is considered as a tautology (Ali et al., 2010). Therefore, a set of substantive capabilities was introduced as direct factors that affect the business performance. Below are the explanations for each of the hypotheses that have been developed.

3.2 Learning, Innovation and Dynamic Capabilities

The learning activities represent a deliberate learning and this is captured as one of a firm's Dynamic Capabilities (DC). DC is essentially a learning process. In this learning process, DC converts its other capabilities into some kind of outcome. Furthermore, it is known that learning capability is one kind of capability which can help firms carry out management practices, build new businesses and innovations, or establish new routines to facilitate and encourage greater knowledge exploration and exploitation in the firm (Akgun, Keskin, Byrne, and Aren, 2007). March (1991, p.71) defines exploration and exploitation in a context of organisational learning as follows. Exploration activities "*capture activities of searching, variation, risk-taking, experimentation, flexibility, discovery, and generating new innovation, but the uncertainty of their value means that the effect is often negative"*. Exploitation activities capture "*activities such as refinement, choice, production, efficiency, selection, implementation, execution and hypotheses showing returns that are positive, proximate, and predictable"*. In addition, Levinthal and March (1993, p. 105) define exploration as "*the pursuit of knowledge, of things that might come to be known*," and exploitation as "*the use and development of things already known*". Building on these definitions, this study then divided learning and innovation into these two different types of activities (exploration and exploitation). This distinction has been seen elsewhere but rarely in a single study (e.g., March (1991) spoke of

exploration and exploitation in terms of learning but others such as Jansen et al. (2006) treated them in terms of innovation types.

Learning exploitation refers to the refinement and extension of existing knowledge, skills, and technologies (March, 1991) that usually creates value through existing or slightly improved capabilities that sustain long-term viability following successful exploration. Normally, a successful exploitation causes fewer risks than exploration (Gatignon, Tushman, Smith, and Anderson, 2002; Lewin, Long, and Carroll, 1999). Another interesting question is the lack of balance between the two types of learning where it will either cause one set of capabilities to deteriorate or to develop. Following March (1991), he had argued the implications for the lack of balance between exploitation and exploration. March (1991) mentioned that if a firm is too oriented toward exploitation, then it is likely to suffer due to a lack of novel ideas. Likewise, a firm that is too oriented toward exploration suffers the costs of experimentation without gaining many of its benefits because it exhibits too many new and risky ideas and little refinement of its existing capabilities (Atuahene-Gima, 2005). However, in this study, the researcher is not focusing on this idea of 'ambidexterity' or 'balance' between exploration and exploitation activities. The scope of the study is focusing on which activities could lead to a better performance, rather than trying to make both activities balanced. The researcher argues that being superior on one side is better than being average on both (which is a flaw in the assumptions underpinning the idea of 'balance', for example).

A similar situation applies to the firm's innovation. Knight and Cavusgil (2004) cited in their article that the flexibility of young and responsive firms enhances the ability to transform product and process innovations into business activities that support superior business performance (Lewin and Massini, 2003). Meanwhile, long-established firms usually face the rigidity and substantial bureaucratisation that hinders their innovation activities (e.g., Lewin and Massini, 2003; Penrose, 1959; Schumpeter, 1942). However, organisations with strong dynamic capabilities are also expected to exhibit superior performance and they are widely assumed to positively affect organisational performance (e.g. Salge and Vera, 2011; Zahra, Sapienza and Davidsson, 2006; Helfat and Peteraf, 2003; Winter, 2003; Zott, 2003; Teece, Pisano and Shuen, 1997). According to Salge and Vera (2011), dynamic capabilities are considered as essential for the organisational adaptation to renew their resource base

and operating routines (Eisenhardt and Martin, 2000). Even though previous literature has presented the common relationship on exploration and exploitation of innovation, exploration innovation leads to radical innovation and in contrast, exploitation innovation leads to developing the incremental products or improving the same branch of product lines (i.e. Atuahene-Gima, 2005; He and Wong, 2004). However, this study is not a repetition of previous literatures. To be more specific, this study is focusing on the perspective of different types of innovation activities and its implication towards capability development in exporting SMEs. This is supported by Dolmans et al. (2014), who show that when small firms are faced with resource constraints, such constraints could lead to creativity. Thus, that creativity in turn could "*create unique innovation while minimising liabilities"* (newness and small size) (Hitt et al., 2011, p. 61).

Similarly, He and Wong (2004) also mentioned that researchers have consistently argued that exploration and exploitation draw on different structures, processes and resources. Thus, each will lead to a different outcome and performance. On the other hand, Levinthal and Myatt (1994, p. 46) also explain that how "*a firm's capabilities evolve is intimately linked with its knowledge about how the competitive markets it serves evolve*". Previous literatures, such as that of Huang and Li (2012), have mentioned that those two learning behaviours provide opportunities for an organisation to translate tacit knowledge into physical products (Sarin and McDermott, 2003; Lynn, Reilly, and Akgün, 2000) and to facilitate new product introduction and innovation (Atuahene-Gima and Murray, 2007; Katila and Ahuja, 2002). Equally, Calantone, Cavusgil, and Zhao (2002) also prove a relationship among learning orientation, innovation, and performance. However, this study suggests that learning behaviours itself, may not give a direct impact towards the innovation. As an alternative, learning and innovation through exploration and exploitation activities would potentially lead to a different implication on one set of a firm's dynamic capabilities, before they could give an impact towards business performance. Following Winter (2003), dynamic capabilities are defined as *"those that operate to extend, modify or create ordinary capabilities"*. In this study, DC is conceptualised as having four components. The lists of component are provided by Pavlou and Sawy (2011). They divide DC into sensing capability, learning capability, integrating capability and coordinating capability (refer to section 2.6.1).

Based on these arguments, the researcher has proposed separate hypotheses for exploration and exploitation activities.

3.2.1 Direct Paths: Exploratory and Exploitative Learning and Innovation and Dynamic Capabilities

March (1991) proposes that exploitation and exploration are two fundamentally different activities between which firms divide their attention and resources. Exploration is fundamentally related more to "*new knowledge, such as the search for new products, ideas, markets, or relationships; experimentation; and risk taking*" (Hortinha et al., 2011, p. 37). Thus, by having exploration activity, it will provide new insight, new knowledge into new features and in turn could benefit more novel innovation (Katila and Ahuja, 2002). Furthermore, through different types of activities of exploration or exploitation, it may therefore change the fundamentals of organisational structures, strategies and contexts. Along the lines with what is cited in the work of Gupta et al. (2006), both exploration and exploitation are connected with learning and innovation, even though there are different types (He and Wong, 2004; Benner and Tushman, 2002; Baum, Li, and Usher, 2000). In addition, some scholars (i.e. Sorensen and Stuart, 2000; March, 1991) have mentioned that learning orientation normally will lead to innovative activities. However, in this study, the researcher segregates learning and innovation into two different types of activities. There are learning exploration and innovation exploration, and learning exploitation and innovation exploitation. Generally, learning exploration refers to "*the essence of exploration is experimentation with new alternatives*" (March, 1991, p.85)", while, learning exploitation refers to "*learning gained via local search, experiential refinement, and selection and reuse of existing routines"* (Baum, Li and Usher, 2000, p. 768).

In this study, learning exploration highlights learning by having a variety inducing of activities (McGrath, 2001). Variety can also increase the degree of new formation (Zahra and Wright, 2011). In addition, Zahra and Wright (2011, p. 71) stated that "*variety is a key source of novelty that generates distinctiveness and differentiation*", which are two key sources of competitive advantage. Thus, the development of firm

exploratory activities of learning is argued to influence or drive the firm dynamic capability of sensing. Obviously, the measures for DC in this study is about the ability to transform. Thus, by undertaking particular types of learning action either require new knowledge or develop new knowledge it then create the circumstances that allow to improve its ability to sense and learn. Huang and Li (2012) stated that through learning exploration, firm could increase their ability to respond to markets, to solve problems, and to enhance performance outcomes. In this study, it is refer to the ability to sensing new environment. The degree of sensing capability is referred to as the ability to spot, interpret and pursue opportunities in the environment. For instance, this includes learning new information about markets and/or seeing markets differently. Building from the above discussion, the researcher posits that through exploratory learning, firms could learn lot of novel and new things to diversify the variety of activities to certain exposure from the knowledge base, which would in turn increase the exposure to new knowledge, and as such, increase the sensing capability. While apply to the innovation activities that the firm already does, exploring new innovation might then diversify the firm and that will generate new knowledge and the learning dynamic capability. This is because the degree of learning capability is defined as the "*ability to restructure the existing operational capability with new knowledge*" (Pavlou and Elsawy, 2011, p. 244). Next, for innovation exploration, the researcher defines innovation exploration as "*radical innovations that are designed to meet the needs of emerging customers or markets*" (Benner and Tushman, 2003, p. 243; Danneels, 2002; Jansen et al., 2006). In this study, it is argued that radical innovations have the tendency to transform existing markets or industries or create new ones (O'Connor, 2008). Not only that, radical innovation also requires new knowledge or departure from existing knowledge (Benner and Tushman, 2002; Levinthal and March, 1993; McGrath, 2001; O'Connor, 2008). Moreover, Reid and Brentani (2012) also stated the idea of radical innovation and the relationship with market vision (i.e. divergent thinking). Divergent thought often results in many wide ranging and unusual ideas being generated. The occurrence of divergent thought means that there is a greater likelihood that some ideas and potential opportunities will be "unusual" and therefore "radical", and hence will result in the generation of many alternative product/application markets (Colarelli O'Connor, 1998). Thus, it is hypothesised:

H1: Learning exploratory is positively associated with an emerging dynamic capability (sensing).

H2: Innovation exploratory is positively associated with an emerging dynamic capability (learning).

The exploitation learning and innovation derive from the firm's motivation to build on an existing set of resources, assets or capabilities (Yalcinkaya et al., 2007; Rothaermel and Deeds, 2004; March, 1991). In addition, March (1991) also stated that exploitation activities have a greater effect on "*using the existing knowledge and refining what already exists; it includes adaptation, efficiency, and execution*" (cited in Hortinha et al., 2011, p. 37). Another point is that exploitative activities' behaviour also benefits from minimising variety and focuses only on particular markets and technological areas in order to maximise efficiency (McGrath, 2001; March, 1991). Furthermore, exploitation activities are also essential to exporters because they facilitate the lower-risk extension of export operations. Hence, the researcher posits that this could enable firms to improve their branching dynamic capabilities by coordinating or integrating their capabilities existence. Coordination and integration capabilities (branching dynamic capabilities) are described as the firm's ability to assess the value of existing resources and integrate them to shape new capabilities (Amit and Schoemaker, 1993; Protogerou et al., 2012). Coordination capability is defined as the ability to orchestrate and deploy tasks, resources, and activities in the new operational capabilities (Pavlou and Elsawy, 2011). It also consists of the teams belonging to different firm departments who work together combining their varied skills and backgrounds in order to design and develop the specific product (e.g. Helfat and Raubitschek, 2000). Coordination between different firm functions is needed for assessment of existing capabilities relative to the environmental requirements (Dosi et al., 2002; Protogerou et al., 2012, p. 621). For integrating capability, this is defined by Pavlou and Elsawy (2011) as the ability to embed new knowledge into the new operational capabilities by creating a shared understanding and collective sensemaking.

Linked with the above discussion, there is a statement that says that exploitative learning pursues the integration of internally focused knowledge (Kim and Atuahene-Gima, 2010). In addition, exploitation activities such as learning would also provide greater opportunities for new combinations and integration of existing knowledge from the emergence of new insight (Atuahene-Gima and Murray, 2007; Pavlou and Elsawy, 2011). Next, it is argued that exploitative innovation could increase efficiency and productivity of the firms (Hortinha et al., 2011).

In this study, exploitative learning is defined as incremental innovations that are designed to meet the needs of existing customers or markets (Benner and Tushman 2003, p. 243; Danneels, 2002; Jansen et al., 2006). Additionally, incremental innovation normally involves adaptation, refinement and enhancement of products, technologies and processes to generate improvements in certain areas that can enhance a firm's competitive position (Rindfleisch and Moorman, 2001). Incremental innovation also has been characterised as continuous or evolutionary innovation and is, thus, of a step-by-step nature rather than a big leap, as is the case with radical innovation (Veryzer, 1998). Thus, by having an exploitative innovation activity, firms may broaden existing knowledge and thus would reinforce existing skills, processes, and structures of the firm (i.e. coordinating capability).
Thus, it is hypothesised:

H3: Exploitative learning is positively associated with the branching dynamic capability (integrating).

H4: Exploitative innovation is positively associated with the branching dynamic capability (coordinating).

Finally yet importantly, this study shows that the innovation could be antecedent to DC and outcome for SC. Hence, the researcher would like to clarify that the measures that been used for IEXPLR, IEXPLT and SPI are different. The SPI (substantive capability) refers to very specific skills of R&D, product development and manufacturing skills and the measures for IEXPLR and IEXPLT refer to set of activities of exploration and exploitation activities. The argument is; if the firm increases activity along increment innovation (IEXPLT) and radical innovation (IEXPLR), then it is creating a set of activity that allow a potentially in time through a learning mechanism for new skills to develop. In another word, the researcher argued

that this is almost similar to 'learning by doing'. By doing the exploration and exploitation of innovation activities, the firm then could generate the condition by which can be learnt and from that learning, firm could potentially improve their innovation skills. This condition also could be relates with experiential learning logic. According to Kayes (2002), '*experiential approaches to learning focus on how managers acquire and transform new experiences and how these experiences lead to a greater sense of satisfaction, motivation, or development*' (p.). While the relationship between learning, innovation and dynamic capability is considered as general, hence, the strength of this relationship may be depending on some related moderating variables. This study pinpoints slack resources as important moderating factors and examines the relevant theoretical rationales and empirical work. "*Slack is a potentially utilizable resource that can influence the ability of firms to implement desired actions*" (Bourgeious, 1981; Huang and Li, 2012, p. 381). Below are the hypothesized argument on linking the resource slack with different form of learning, innovation and DCs.

3.3 Moderating factors: Linking Resource Slack (RS), Learning and Innovation Exploration, Learning and Innovation Exploitation and Dynamic Capabilities Development

There are various types of resource slack (RS) such as human resource slack (Mishina et al., 2004), financial slack (Nohria and Gulati, 1996; Tan and Peng, 2003), operational slack (Bourgeois, 1981) and customer relational slack (Voss et al., 2008). In this study, RS is divided into three types: operation slack (OS), financial slack (FS) (Voss et al., 2008) and former resource slack. In this study, past business performance (PBP) indicates former resource slack. In small-to-medium enterprises (SME), firms tend to have a lack of substantial financial and human resources, as well as plant, equipment, and other physical resources. During the development of SMEs, lack of substantial financial and human resources tend to influence a collection of fundamental intangible knowledge-based capabilities in order to encourage the foreign markets (Knight and Cavusgil, 2004). SMEs might not only face a lack of resources, but may also face an abundance of resources and hence, the difficulty in managing their resources or resource slack. Here, the researcher discusses issues of resource slack, the excess resources that become important determinants of organisational structure, growth, and performance (Penrose, 1959).

RS gives the firm flexibility in managing changes in response to a dynamic environment (Moreno et al., 2009). However, Bourgeois (1981) added that slack is a resource cushion that firms can use in a flexible manner, both to counter threats and exploit opportunities. This definition clearly links the presence of RS to the ability of the firm to explore or exploit domains activities.

Resource slack is also seen as poor management because the organisations that have slack or excess resources (e.g. financial, labour, capacity) are not operating in an ideal way (Nohria and Gulati, 1996). Another instance is having excess inputs such as redundant employees, unused capacity, and unnecessary capital expenditures (Nohria and Gulati, 1996). However, Cyert and March (1963) defined slack as a "supply of uncommitted resources" and they saw resource slack as opportunities for the firms to benefit from more long-term issues such as innovation and strategic development. Furthermore, prior scholars had suggested slack resources as the strategic tools to assist risk taking, innovation and performance in a dynamic environment (Huang and Li, 2012; George, 2005; Keegan and Turner, 2002; Tan and Peng, 2003; Nohria and Gulati, 1996). In addition, some literature appears to support the idea that firm resources (slack resources) have a positive relationship towards exploration activities (Voss et al., 2008) and sometimes can increase the exploitation activities (Voss et al., 2008; Tan and Peng, 2003). Nevertheless, there still has yet to be any consistent studies examining the relationship of organisational slack and its influence on the exploration and exploitation activities (Voss et al., 2008).

In support with the idea of resource slack from Voss et al. (2008), they indicate that different forms of slack resources exert different types of impact on exploration and exploitation activities. For instance, Voss et al. (2008) propose that firms with low levels of resource slack are more likely to explore (Katila and Shane, 2005) and firms with high slacks usually develop the exploitation through their known capabilities (Levinthal and March, 1993). Voss et al. (2008) also stated that previous researchers reported mixed findings. Some of them argued that there is a positive and negative relationship between slack resources and exploration innovation (Nohria and Gulati, 1996), while others suggest that slack resources would only reduce the exploration activity (Mishina et al., 2004). As a result, this issue remains unsettled. As such, in this study, potential moderating conditions are considered and will be tested in terms

of their effect on the relationships among exploratory and exploitation activities and dynamic capabilities development.

Building from that point of view, the researcher herein hypothesises that resource slack plays the role of a moderating effect to strengthen or weaken the relationship between exploitation and exploration activities and the dynamic capabilities development. In this situation, the roles of RS as moderating factors are justified by RBV. The researcher argues that the more resources that the firm holds, the more scope the firm can explore and this exposes the firm to opportunities to innovate. Therefore, this increases their learning capability. However, if the firm holds too much resource slack, then it is going to struggle to manage and coordinate things that they develop. This is because they could be distracted by so many possibilities such as oversupply, difficulty in handling extra employees or the managers themselves will misuse these resources by using them unproductively (Jensen, 1986). This is supported by Nohria and Gulati (1996), when they stated that when there are too many excess resources, this will reduce investment discipline.

Thus, taking the prior discussion into account, the researcher proposes the following hypotheses. It is possible to say that there is a logical connection between levels of slack resources towards moderating the relationship between the exploration and exploitation activities and the dynamic capabilities development. In this present study, the researcher posits that each moderation factor would give an impact either for exploration activities or exploitation activities, but yet in a different way. For instance, operational slack in this study is hypothesised to positively moderate the exploration activities and the emerging dynamic capabilities. The exploration activity itself is resource intensive so without a sufficient slack resource, it will be difficult for the firm to convert its exploratory activity into sufficient value or create sufficient valuable outcomes. Those firms with greater resource slack are more likely to secure greater amounts of value, and in this case, it is in the form of improvements to its emerging capabilities (because with greater slack, its ability to do more exploration and improve its sensing and learning DC will likely be greater). Furthermore, when the firms have excess operational slack such as human resources, time and capacity, firms are hypothesised to have the capacity to induce the exploration activities. Voss et al. (2008) also stated that resource with high absorption (i.e operation slack) normally prefer the exploration activities.

Based on these arguments, it is hypothesised that:

H5 (a): Resource slack (operational slack) positively moderates the relationship between learning exploratory and the emerging dynamic capability of sensing.

H5 (b): Resource slack (operational slack) positively moderates the relationship between innovation exploratory and the emerging dynamic capability of learning.

Next, as suggested by Voss et al. (2008), financial slack (FS) is argued to have the least absorbed form of slack and is the easiest to redeploy. Previous research projected that financial slack will increase the pressure to protect rather than deploy slack, to ensure its availability for ongoing activities and organisational viability (such as exploitation activities) (Tan and Peng, 2003; Voss et al., 2008). Moreover, a low level of slack is seen as insufficient for successful product exploration, but not for product exploitation (Voss et al., 2008).

Therefore, the researcher would argue that FS negatively moderates the exploration (innovation) activity toward creating a new emerging capability of learning.

However, FS is hypothesised to positively moderate the exploitation (innovative) activity towards the branching capabilities of coordination. This is because, according to previous researchers (e.g. Mishina et al., 2004; Tan and Peng, 2003; Nohria and Gulati, 1996), low financial slack is not necessary for product exploration because it favours to keep rather than deploy slack (Voss et al., 2008).

H5 (c): Resource slack (financial slack) negatively moderates the relationship between innovation exploratory and emerging dynamic capability (learning).

H5 (d): Resource slack (financial slack) positively moderates the relationship between innovation exploitative and branching dynamic capability (coordinating).

Next, in this study, prior or past business performance (PBP) is represented as a former resource slack. Organisation theory researchers often use the concept of "slack" when discussing the impact of performance on organisations (Bourgeois, 1981). Hortinha et al. (2011) stated that firms tend to rely on their past experience and performance in order to make decisions (Cyert and March, 1963; Lages, Jap, and Griffith, 2008; Levinthal and March, 1981).

To be more specific, past performance normally affects innovation-related decisions because of their limited resources (Durmusoglu et al., 2008).

Firms with greater slack engage in more exploration activities, while firms with less slack must conserve it for exploitation activities (Hortinha et al., 2011; Voss et al., 2008; Singh, 1986). This is why some researchers state that for exploration activity, firms with poor past performance cannot afford to explore new opportunities and ideas through innovation activities (Hortinha et al., 2011). Thus for firms with poor past performance, exploitative activities are more critical than explorative activities. Firms will then have no choice to explore new opportunities, and instead will attempt to integrate the current resources and capabilities. This is supported by Atuahene-Gima and Murray (2007), where they argued that high levels of exploitation would make the development more difficult. Furthermore, success in diversification strategies also depends on the availability, experience, and knowledge of firms' managerial and expert human resources (Kor and Leblebici, 2005). Thus, in this study, the researcher hypothesised that when firms already have a good business performance in the past, they are not motivated to do any of the exploitation activities. In fact, firms with good business performance are keen to do other exploration activities in order to enhance their performance. Furthermore, whether or not the firms decide to integrate or branch their dynamic capabilities, firms would make their decision based on their past performance. As suggested by Hortinha et al. (2011), past performance also can be used as a moderator rather than as an antecedent of a firm's strategy. Thus, it is hypothesised that:

H5 (e): Past business performance moderates the relationship between learning exploitative and branching dynamic capability (integrating).

H5 (f): Past business performance moderates the relationship between innovation exploitative and branching dynamic capability (coordinating).

3.4 Moderating factor: Linking International Diversity, Innovation Exploration and Emerging Dynamic Capability of Learning

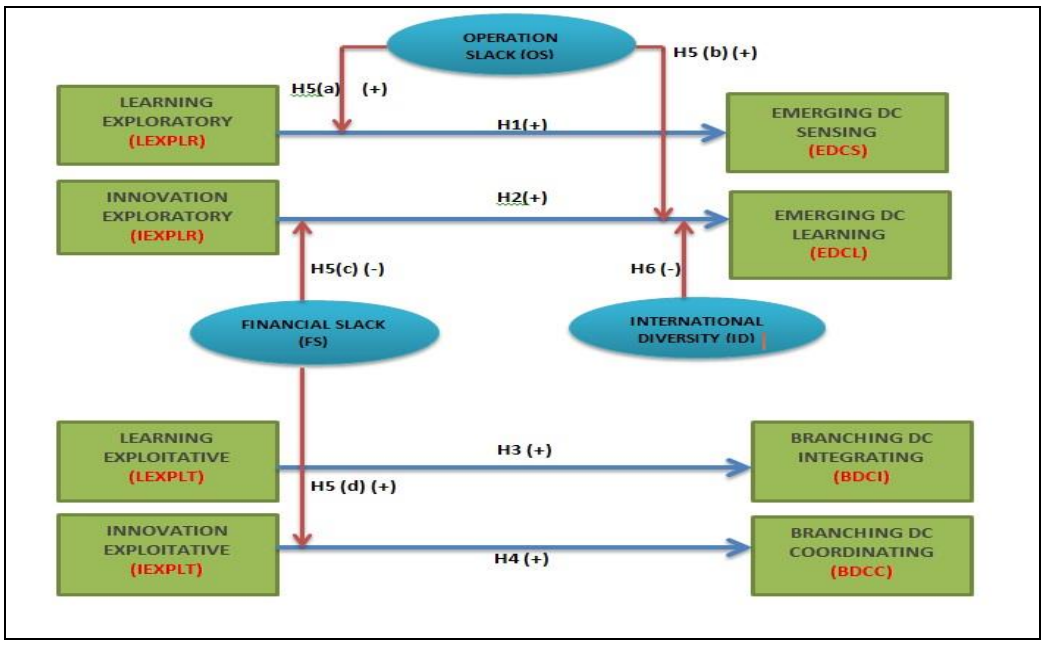
Firms often diversify both geographically and in terms of services to utilise any excess capacity of their resources and capabilities and to benefit from economies of scope (Penrose, 1959). Teece (1980, 1982) explored "Penrose's ideas of resource fungibility by assessing how the nature of a resource, and in particular its "tradability" (or lack of it), affected the firm growth through diversification" (Teece, 2014, p. 15). In addition, Ahuja and Katila (2004) stated that diversified firms normally have the potential to exploit new knowledge and to benefit from user innovation. There are a few types of diversification that firms could utilise, for instance, technology diversification (Garcia-Vega, 2006), product diversification (Cesaroni, 2004) and international diversification (Lord and Ranft, 2000; Inkpen and Dinur, 1998; Hitt et al., 1997). However, in this study, the researcher will only focus on international diversification. International diversification in this study refers to the way the small-to-medium enterprises (SMEs) used to expand their international activities. This has also been included to identify the importance of international operations for the SMEs. International diversity has a direct effect on exposure to new knowledge. By going international, it is good to absorb a lot of resources, and equally, this will give more scope for the firms to sense new opportunities in international markets and learn new knowledge from different international markets. However, the nature of exploration, which prefers the concept of variety inducing (March, 1991), might negatively moderate the relationship between innovation exploration activity and the learning dynamic capability.

This is because when the firm already has innovation activities going on, the existence of international diversity might weaken the relationship of the firm's ability to revamp their routines to identify value, assimilate and utilise their new information and knowledge.

Therefore, the following hypothesis is proposed:

H6: International diversity negatively moderates the relationship between innovation exploratory and emerging dynamic capability (learning).

Figure 3.2 First half of the model



In order to hypothesises the link between dynamic capabilities and substantive capabilities on business performance, the researcher now moves to first discuss the impact of dynamic capabilities on substantive capabilities, and then the researcher hypothesises the substantive capabilities as direct factors that affect onto business performance.

3.5 The link between Emerging DCs, Branching DCs and Substantive Capabilities

According to Protogerou et al. (2012), dynamic capabilities have an influence on substantive capabilities, which then have significant effects on performance. Furthermore, Ali et al. (2010) stated, "*there is increasing evidence that a firm's dynamic capabilities significantly affect firm performance either directly or indirectly*" (p. 366). Thus, to break the tautology of dynamic capability and performance, this study applies the direct factors of stage of substantive capability development and the speed of substantive capability development, in order to enhance the business performance. Following the idea of Zahra et al. (2000), the researcher intends to divide the marketing and innovation capabilities in the form of speed and stage of the capability development. Zahra et al. (2000), refer to stage as depth of a firm's mastery of new knowledge, evidenced by an ability to draw new conclusions and find new links among diverse knowledge bases (Huber, 1991) and speed

describes how rapidly the firm acquires new insights and skills (Dodgson, 1993). Thus, in the current study, the researcher describes depth as a firm's stage of acquiring new skills of innovation and marketing, whereas speed refers to how rapidly the firm acquires new skills of innovation and marketing. Table 3.1 shows the variables of speed and stage of innovation and marketing capabilities with their component items.

Table 3.1 Innovation Capabilities and Marketing Capabilities

Variables	**Items**
SPEED AND STAGE OF INNOVATION CAPABILITIES	*Product development skills* *Research & development (R&D) skills* *Manufacturing skills*
SPEED AND STAGE OF MARKETING CAPABILITIES	**Items** *Business development* *Marketing skills* *Customer servicing skills*

Next, Zahra, Ireland and Hitt (2000), mentioned that the stage of the substantive capability could improve the firm's capability (Usunier, 1996) and help the firm to target new markets (McCann, 1991), while the speed of the substantive capability development could improve performance by "*compressing the product development cycle, enabling the firm to gain the benefits associated with being among the first to the market*" (Zahra et al., 2000, p. 931; Dodgson, 1993).

In this study, dynamic capabilities are treated as two different forms, which are emerging capabilities (consists of sensing and learning) and branching capabilities (consists of integrating and coordinating). The ideas of emerging and branching were built from the studies of Helfat and Peteraf (2003) and Branzei and Vertinsky (2006). Sensing processes produce inputs for the specifications of reconfigured operational capabilities (Eisenhardt and Martin, 2000). The more frequently the firm engages in sensing, the more frequently it is stimulated to react by exploring and specifying new capability configurations that ultimately can influence the speed of its marketing and technology (innovation) capabilities development (Wilden and Gudergan, 2015).

Moreover, this study indicates that dynamic capabilities are used for two reasons. The first is to improve the speed of the development and the other is to improve the stage of development. Thus, it is argued that emerging capabilities (sensing or learning) will be developed faster or slower through the speed of the substantive capabilities (innovation or marketing), while the branching capabilities (integrating or coordinating) may allow more complex or stage of capability development of innovation and marketing, in order to achieve the business performance. Stage refers to a firm's mastery of new knowledge, evidenced by an ability to draw new conclusions and find new links among diverse knowledge bases (Huber, 1991).

Hypothetically, when the firms hold emerging dynamic capabilities, hence the speed of innovation or marketing is predicted to help firms to enhance more business performance. Similar approach applied to branching dynamic capabilities. SMEs which having integrating and coordinating capabilities in their firms is predicted to achieve more better performance with the presence of the innovation and marketing capabilities skills. Drawing on these relationships, it is hypothesised that:

H7: The component of emerging dynamic capability (sensing) positively related to the speed of: H7 (a) innovation capability development and H7 (b) marketing capability development.

H8: The component of emerging dynamic capability (learning) positively related to the speed of: H8 (a) innovation capability development and H8 (b) marketing capability development.

H9: The component of branching dynamic capability (integrating) positively related to the stage of (a) innovation capability development and (b) marketing capability development.

H10: The component of branching dynamic capability (coordinating) positively related to the stage of (a) innovation capability development (b) marketing capability development.

3.6 Direct Effect of Substantive Capabilities and Business Performance: Innovation capabilities and marketing capabilities

In building theoretical support, the researcher turns the attention toward the direct effect of substantive capabilities and business performance. Namely, the researcher refines previous work that suggests general linkages among DC and performance (e.g., Ali et al., 2010) by providing a more nuanced understanding of the direct effect between substantive capabilities and business performance. In linking the evidence for the direct effect of dynamic capabilities on business performance, the researcher's next hypothesis emphasises the influence of dynamic capabilities on firms' substantive capabilities as well as on the business performance relationship. This is because, according to Protogerou et al. (2012), the question of whether and how DC affects performance is still open (Helfat et al., 2007). In addition, "*some scholars have limited the consideration of dynamic capabilities only in rapidly changing environments (e.g. Teece et al., 1997; Teece, 2007) leaving open the examination of their role under other environmental conditions*" (Protogerou et al., 2012, p. 616).

Moreover, the empirical investigation of this issue is still limited and mainly based on case studies, with most theoretical arguments pending empirical confirmation (Protogerou et al., 2012).

In this current study, the researcher decided to look at innovation capabilities and marketing capabilities as the substantive capabilities. According to Day (1994) and Danneels (2002), marketing capability and innovation capability are the most important substantive capabilities (Ali et al., 2010) and are expected to enhance performance (Zahra, Ireland and Hit, 2000). In addition, some researchers (e.g. Eisenhardt and Martin, 2000; Helfat and Peteraf, 2003; Pavlou and El Sawy, 2006; Zahra et al., 2006; Winter, 2003) stated that *"the effects of dynamic capabilities on organizational performance work through the development of both functional and operational competencies (termed substantive capabilities)*" (Ali et al., 2010, p. 367). Supported by Wilden and Gudergan (2015), few empirical researches have studied the association between dynamic capabilities and marketing and technological capabilities (e.g., Vorhies et al., 2011). In line with previous research, researchers indicate that both technological (innovation) and marketing (e.g., Hooley et al., 2005; Song et al., 2005) capabilities are key drivers of a firm's performance and have a positive relationship with firm performance.

To be more specific, this current study discusses how speed and stage of innovation could positively influence the business performance. This is because, according to Gunday et al. (2011), "*many of these researches embrace more or less a positive association between innovations and firm performance, but there are also some studies indicating a negative link or no link at all (Capon et al., 1990; Chandler and Hanks, 1994; Subramanian and Nilakanta, 1996,* p.664*)*,. In addition, Gopalakrishnan (2000, p.139) and Carbonell and Rodriguez (2006), "*generally agreed that both innovation speed and stage of innovation have a positive effect on firm performance*". According to Carbonell and Rodriguez (2006), "*firms today face highly competitive and dynamic environments and the associated need to bring products to market more quickly"* (p.1).

Additionally, speed and stage of marketing are also estimated to have a positive influence on business performance. According to Protegerou et al. (2012), marketing capability enables firms to better understand their customers' current and future needs and has been considered as an important driver for superior performance.

In conclusion for this section, the speed and stage of marketing and innovation capabilities are seen to support the firms to better understand their customers' needs, to influence new customers and to effectively analyse competitors and competition (Ali et al., 2010). In this study, the existence of the substantive capabilities as a direct factor in the DC-performance linkage might logically be expected. That is, DCs affect the substantive capabilities, which in turn affect the business performance of a firm.

Consequently, it is hypothesised that:

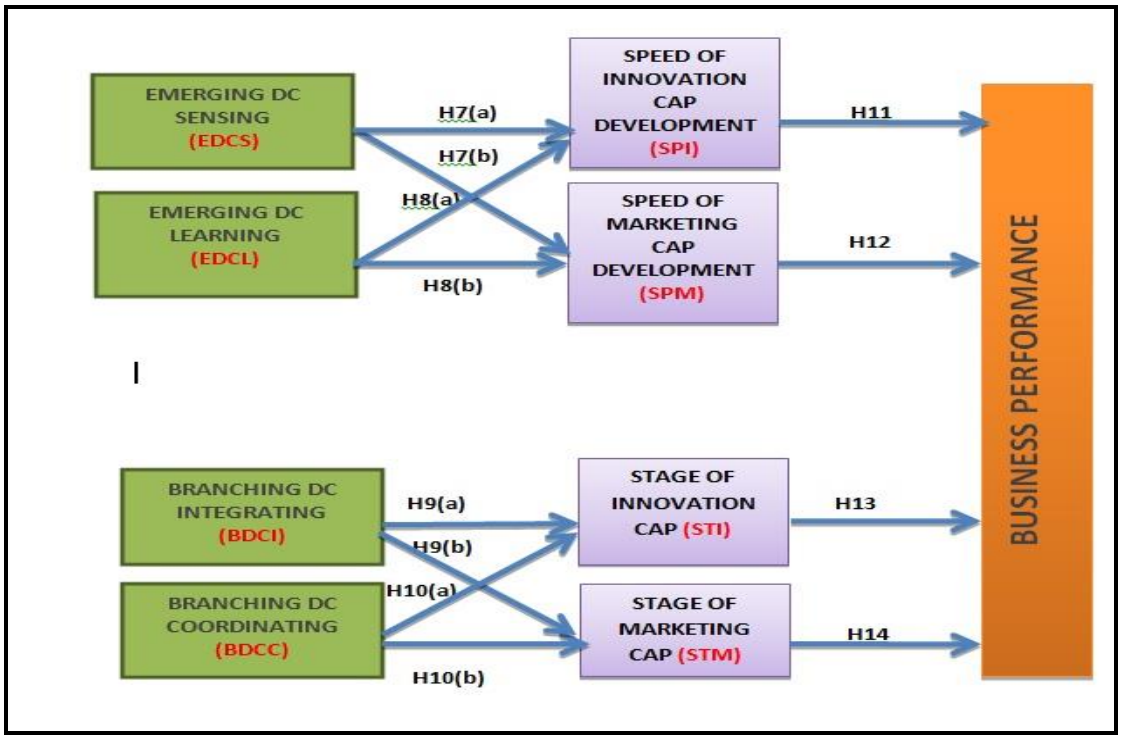
H11: Speed of innovation (SPI) capability development positively related to current business performance.

H12: Speed of marketing (SPM) capability development positively related to current business performance.

H13: Stage of innovation (STI) capability development positively related to current business performance.

H14: Stage of marketing (STM) capability development positively related to current business performance.

Figure 3.3 Second half of the model



CHAPTER 4 : RESEARCH METHODOLOGY
EPISTEMOLOGY, RESEARCH DESIGN AND DATA ANALYSIS TECHNIQUE

This chapter will:

- Review the research objectives.
- Examine the research philosophy and the epistemological consideration that are relevant to this study.
- Assess the most suitable research design to select to guide the development of the research strategy for this study.
- Discuss the sampling process and analysis technique that will be used.

4.0 Introduction

The previous chapter outlined the development of the conceptual framework and the hypotheses based on the review and analysis of literature relevant to this study. This chapter focuses on the epistemological considerations and the development of the primary research methodology that focuses on survey design and implementation to answer the research question within practical and ethical constraints. In this study, the research question and hypotheses will be answered by using mixed-mode surveys (Dillman et al., 2009), web survey questionnaires, drop and collect as well as mail posted to the population sample of 1105 Malaysian manufacturing SMEs registered with the Malaysia External Trade Development Corporation (MATRADE). Following this, some preliminary discussion on analysis technique will be covered. This is to give an initial idea for the next step for advanced data analysis.

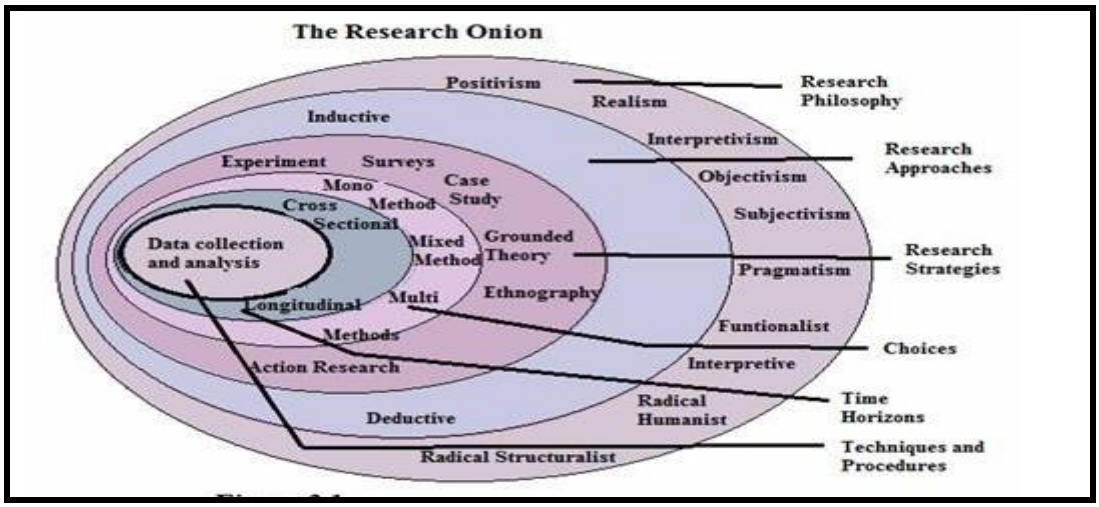
4.1 Research Objectives

By way of brief reminder, the core objectives to this study are:

- To develop insight into how exploration and exploitation activities could lead to a different form of dynamic capability.
- To identify the set of moderating key factors that drives the relationship between exploration and exploitation and the form of dynamic capabilities.
- To examine the direct effects of the relationship between dynamic capabilities, substantive capabilities and a firm's business performance.

In general, this chapter will continue explaining the foundation steps of the study based on research layers suggested by Saunders et al. (2009) (see Figure 4.1). There are six main layers that guided the researcher in conducting this study: (1) to identify the relevant philosophical stances, (2) which study approaches to use, (3) what kind of research strategies could be implemented, (4) the choices of method, (5) time horizon and (6) the techniques and procedures. Mainly, all the layers were adapted into four main sections for this chapter: (i) research philosophy, (ii) research methodology and method, (iii) research design and (iv) data generation techniques and methods implemented.

Figure 4.1 Research Layers



Source: Saunders et al. (2009)

4.2 Research Philosophy

Before being able to identify how dynamic capabilities address these key epistemological questions, the researcher must first review core terminology and classic debates in the philosophy of science. There are four philosophical branches that are linked in order to ensure research is planned, developed and implemented appropriately: Ontology, Epistemology, Methodology, and Methods (Easterby-Smith et al., 2002).

The ontological concept is characterised by the nature of the social reality that needs to be addressed and what can be known about reality (Guba and Lincoln, 1994). In general, ontology represents the researcher's fundamental beliefs and how these shape knowledge about specific matters (Jankowicz, 2000), while, the epistemological concept is characterised by the nature of the relationship between individuals, who they are and what can be known about a particular reality (Easterby-Smith et al., 2002). In general, the relationship between reality and a researcher is referred to as epistemology (Hewege and Perera, 2013). In short, epistemology is the theory of knowledge (Easterby-Smith et al., 2002), and acts as the base for building knowledge in certain situations (Hesse-Biber et al., 2006), while ontology is the question of what constitutes reality and how the researcher can understand existence. The two are inherently linked, therefore. In the social sciences, the question of what is knowledge is the most critical one, because the philosophical position the researcher takes can imply very different points of view. For example, epistemology typically has two groups. Positivism means that if the researcher can accurately measure and test something then that gives a valid basis for knowledge; thus, only quantitative methods are deemed to produce valid knowledge. In contrast, the interpretivist paradigm, within which there are several philosophical positions (e.g., subjectivism, constructivism, and critical realism), appreciates that knowledge is more subjective and reality is different for each individual. This goes back to ontology, because for a positivist if it cannot be measured then it does not exist per se. That is, as an example, under this position there is no God unless it can be measured. Interpretivism on the other hand sees objective truth as subjective to individuals or groups, so is ontologically different.

The following sub-sections will briefly explain the different types of epistemologies and philosophical assumptions on methodology and methods. Before selecting the most suitable and appropriate epistemological stance for this study, an analysis and evaluation of the possible epistemological stances is necessary. This study will briefly explain two main epistemological stances that are related within the social sciences: positivism and interpretivism. These theoretical traditions differ in how they resolve the ontological debate of what constitutes reality and what can be known about reality.

4.2.1 Positivist

Positivism views the world as external and objective. Positivism is in itself an epistemological position but yes it is about scientific knowledge – i.e., if it cannot be measured and quantified, therefore it cannot form knowledge. Positivism is based on realism, idealism which is philosophical views which believe that the world we see is an exact reality replica of the real world itself. Furthermore one of the main principles of positivism is that the world works according to certain laws and therefore, they can be discovered through scientific methods.

Positivism often associated with a quantitative, scientific approach, assumes resistance to qualitative research, and assumes that "*science quantitatively measures independent facts about a single apprehensible reality*" (Healy and Perry 2000, p. 119). According to these authors, positivists separate themselves from the world they study and therefore it is not suitable when the research involves humans and their real-life experiences.

4.2.2 Interpretivist

Interpretivism (i.e. Constructivism) typically associated with qualitative approach, suggests that "*truth is a particular belief system held in a particular context, and it is interested in the values which underpin the findings*" (Healy and Perry 2000, p. 120). The constructivist paradigm assumes relativist ontology, a subjectivist epistemology, and a naturalistic set of methodological procedures. The understanding or meaning of phenomena, formed through participant and their subjective views, make up this world view (Creswell and Piano Clark, 2007).

4.3 Research Methodology

4.3.1 Quantitative versus Qualitative methodologies

Generally, ontology and epistemology are connected with the researchers' views on certain issues, how they acquire knowledge, the information sources and how information is gathered (Che Senik, 2010). Therefore, these perspectives lead into philosophical assumptions on methodology. According to Easterby-Smith et al. (2002), research methodology is the utilisation of approaches to enquire into specific matters, while research methods are the techniques to gather data.

The main research methodologies can be divided into two: quantitative and qualitative approaches. As cited in Hewege and Perera (2013), quantitative research methods are more commonly used than qualitative research methods. They are acknowledged for their rigidity in terms of theory testing and generalising; however, they are not considered versatile in capturing important contextual factors (Hewege, 2010; Vermeulen, 2005). Alternatively, qualitative research methods are efficient in capturing these contextual factors, yet they have been heavily criticised for their lack of generalisability (Arbnor and Bjerke, 2008; Creswell, 2008; Onwuegbuzie and Leech, 2010). There is also a third methodological choice, which is expected to overcome the drawbacks of using a single method (Cameron and Miller, 2007), where researcher can combine the use of quantitative and qualitative research methods (Creswell, 2008). However, according to Hewege and Perera (2013), the main issue in using combined methods is their tendency to contradict the research paradigms, but then it could strengthen mixed-methods research. Normally, mixed-method designs will start with a qualitative pilot study followed by quantitative research (Morgan, 1998). Thus, this encourages the belief that qualitative research in general cannot stand on its own and often needs quantitative work, such as validity and reliability, to support it (Sale et al., 2002).

Before the researcher proceeds to detail the rationales for choosing the quantitative research methods, the table below outlines the distinct characteristics of the quantitative and qualitative paradigms.

Table 4.1 Characteristics of the quantitative and qualitative paradigms

Quantitative Paradigm	Qualitative Paradigm
1. Quantitative methods preferred.	1. Qualitative methods preferred.
2. Seeks the facts or causes of social phenomena without advocating subjective interpretation.	2. Concerned with understanding human behaviour from the *actor's* frame of reference.
3. Logical-positivistic approach.	3. Phenomenological approach.
4. Obtrusive, controlled measurement.	4. Uncontrolled, naturalistic observational measurement.
5. Objective; 'outsider's' perspective; distanced from the data.	5. Subjective; 'insider's' perspective; close to the data.
6. Ungrounded, verification-oriented, confirmatory, reductionist, inferential, hypothetico-deductive.	6. Grounded, discovery-oriented, exploratory, expansionist, descriptive, inductive.
7. Outcome-oriented.	7. Process-oriented.
8. Reliability is critical; 'hard' and replicable data.	8. Validity is critical; 'real', 'rich', and 'deep' data.
9. Particularistic – attempts to analyse.	9. Holistic – attempts to synthesise.

Source: Deshpande (1983); adapted from Reichardt and Cook (1979)

Therefore, this study will only rely on quantitative techniques. The previous literature contains plenty of qualitative research; therefore, it has been considered more insightful to test the causal relationships between resources, capability development and business performance by the application of statistical techniques. In this way, the hypotheses or theories that have emerged from empirical studies will be proved or disproved. Furthermore, in Quantitative study, the researcher actually capture that DC are presence and visualise them in Qualitative are extremely hard. This is because there is a lot of confusion going on in DC conversation. For instance, Zahra in his paper gave in example where in one firm a new product development (NPD) capabilities or innovation capabilities was dynamic capability and in another example he said it was substantive capability. Thus, this create confusion. However, in this current study, the researcher treated SC by capturing the DC processes, which is the aspect of sensing, learning, integrate and coordinate.

4.3.2 Philosophical Position

Once the researcher decides what constitutes knowledge, an appropriate methodology (quantitative or qualitative) and then the research design – whether it be exploratory, descriptive or experimental – can be selected. It is argued that researchers are quite often confused between the concepts of methodology and methods. Basically, methodology refers to various methods that a researcher uses to understand reality (Hewege and Perera, 2013), and methods are the techniques to gather data (Easterby-Smith et al., 2002). Having discussed how the research philosophy influences the research design and process next is the reasoning on how the research philosophy was incorporated into the research methodology.

Beforehand, the following discussion provides the main rationales for choosing Quantitative above Qualitative study. Reichardt and Cook (1979) distinguished that quantitative epistemologies stress verification and confirmation of theories whereas qualitative epistemologies emphasise discovery or generation of theories. Thus, a positivist and quantitative approach is considered most suitable for this study. Adopting a positivist stance effectively excludes a qualitative methodological approach because the two are largely incompatible in how they view the world and, in general, positivist researchers mainly use methods that are useful in verifying hypotheses (for example, experiments and surveys).

Another reason for choosing the quantitative approach is because the qualitative approach is not a favoured method of conducting research in developing Asian countries (Che Senik, 2010). In addition, public perception of academic research is low as many people assume that the research findings do not contribute to social and economic development (Rafidah, 2007). They are more familiar with the empirical findings on internationalisation that rely on quant-survey (Yeung, 1995). On top of that, Wang and Ahmed (2007) have reported that 14 out of 24 studies of dynamic capabilities used the qualitative method. Therefore, there is no need to explore more and more on this aspect. The researcher needs the empirical evidence in order to understand this phenomenon. Next, is the discussion on whether to select the deductive research or inductive research?

4.3.3 Deductive versus Inductive Research

Thomas (2004) argues that what govern the selection of a relevant paradigm and methods are the research problems and research questions. The main aim of this study is to examine the insight on how exploration and exploitation activities could lead to a different form of dynamic capabilities. Therefore, the nature of the investigation is prescriptive rather than just descriptive and it requires deductive reasoning. Deductive study is when the researcher uses prior theory as a foundation for the development of testable hypotheses (Shah and Corley, 2006).

Furthermore, deductive study is used in order to describe the quantitative methodological processes in detail. Deduction is the opposite of induction, whereby a researcher uses existing theory or knowledge to deduce a hypothesis or expectation of what might happen. Induction sources this from the data first, typically in the form of a qualitative and exploratory study.

For that reason, this study was evolved using the standard version of the scientific methods, the hypothetico-deductive method, which provides a useful and systematic approach by which to solve the research problems (Sekaran and Bougie, 2010). It is elaborated by seven (7) steps:

1) Identifying a broad problem area
2) Defining the problem statement
3) Developing hypotheses
4) Determining measures
5) Collecting data
6) Analysing data
7) Interpreting data

In sum this research epistemology is positivism, which is mainly a quantitative approach, there is a singular reality (its ontology) i.e. researchers reject or fail to reject hypotheses, the researchers are distinct and impartial (its epistemology) i.e. researcher objectively collect data on instruments, and the research process is deductive (its methodology) i.e. the researchers test on a priori theory (Creswell and Piano Clark, 2007).

The following table summarises the research approach used in this study:

Table 4.2 Summary of the research approach used in this study

Components	Characteristics
Ontological orientation	Reality is real and apprehensible
Epistemological	Positivism
Characteristics of research approaches	Objective, Impersonal, Reductionist, Generalisation
The role of theory to research	Deductive
Common Methodologies	Surveys: mostly concerned with testing of theory and verification of hypotheses.

Sources: Onwuegbuzie and Leech (2005), Sobh and Perry (2006), and Bryman and Bell (2007)

4.4 Research Design

Selecting an appropriate research design is critical to the entire strategy of data generation and analysis. A research design represents a plan or framework for a study and is used to guide data generation and analysis. In general, a number of research design frameworks exist. Exploratory, causal and descriptive are the three dominant research design structures predominant in existing empirical research literature. In this study, descriptive research is the most appropriate research design to explain the research framework. This is because descriptive research is mostly concerned with the relationship between two variables and, as such, a descriptive study is typically guided by one or more initial hypotheses (Churchill, 1999). Normally, a descriptive design is adopted when the research problem is structured and well understood (Sellitz et al., 1976). Descriptive research is utilised for a number of purposes including: to describe the characteristics of certain groups; to estimate the proportion of subjects in a specified population who behave in a certain way; to make specific predictions; and to assess relationships between variables (Churchill, 1999). In addition, its primary aim is not theory development, even though it could provide useful hints for theory building and theory refinement (cited in Forza, 2002). Predominantly, this study is applying a descriptive design. In particular, descriptive studies can be categorised into two (2) common types: (a) Cross-sectional study and

b) Longitudinal study. Cross-sectional design is closely connected with questionnaires (Bryman, 2001).

Cross-sectional research design can be considered as the generation of data "*on more than one case and at a single point in time in order to collect a body of quantitative or quantifiable data in connection with two or more variables, which are then examined to detect patterns of association*" (Bryman, 2001, p.41). From this definition, the reason why questionnaires are the prevalent research instrument in this design is clear. Questionnaires take a snapshot of a case at a single point in time so that a bank of quantitative data can be generated from which assessments on relationships between variables can be made. The selection of cases depends on the sample and the success of a cross-sectional design is reliant upon the sample of elements being representative of the known target universe or population (Churchill, 1999). On the other hand, a longitudinal study involves investigating a phenomenon or different groups over time to investigate whether there are any relevant changes in pre-identified variables (Balnaves and Caputi, 2001). Longitudinal designs are therefore dynamic relative to the static nature of a cross-sectional design and rely on methods that generate data from a fixed sample and measured repeatedly over time. This can limit the methods available to a researcher as well as constrict a sample of participants willing to offer their time and assistance in a complicated research process. Moreover, there are also significant time and costs involved in conducting such research, normally beyond the constraint threshold of a PhD researcher.

4.4.1 Selection of research design and its justification

The purpose of this study is to articulate hypotheses for testing. Therefore, it is determine that a *descriptive* design would be best suited to resolving the research objectives. This strategy emphasises the quantification of the collection, measurement and analysis of the data (Bryman and Bell, 2007). Thus, a quantitative strategy, based on survey data, was selected over the qualitative methods. The questionnaire was designed to apply to industrial sector SMEs in Malaysia, particularly those involved in exporting activity, and was sent to top-level managers for each of the SMEs through the web survey questionnaires.

As a result, a cross-sectional character was considered to be the most suitable approach to the descriptive design. This study implemented cross-sectional analysis of data, in which samples were analysed once in time, as opposed to a longitudinal study (Sekaran and Bougie, 2010). It is reported that this type of analysis is more suitable to a study that intends to analyse a phenomenon, situation, problem, attitude or issue (Kumar, 2005).

The next section will discuss the finer points of this research strategy by detailing an assessment of the available data generation techniques and consequently the decisions taken and the methods executed for the purposes of generating a robust body of data on the constructs proposed in the conceptual model.

4.5 Data Generation Techniques

The previous section determined the epistemological approach and research design that form the basis for the remaining research strategy. This section now explores the finer points of this strategy by examining in detail the various data generation techniques at the disposal of the researcher and the decisions taken in this regard. The logic behind all decisions is clarified and robustly argued. This section will proceed as follows: methods of generating data; survey instrument methodology; and survey implementation.

4.5.1 Methods of generating data

In this study, primary sources were considered to be the most appropriate option available for data generation. It is known that the central concepts of dynamic capabilities and business performance have not been investigated in sufficient depth, and subsequently a lack of secondary data exists and particular an accurate battery of objective proxies to measure these constructs, regardless of the research problem. Primary data is distinguished on the basis of purpose and its specificity to the research problem. In addition, primary data possesses such benefits as being timely and up-to-date compared to secondary data, offering greater opportunities for completeness and applicability.

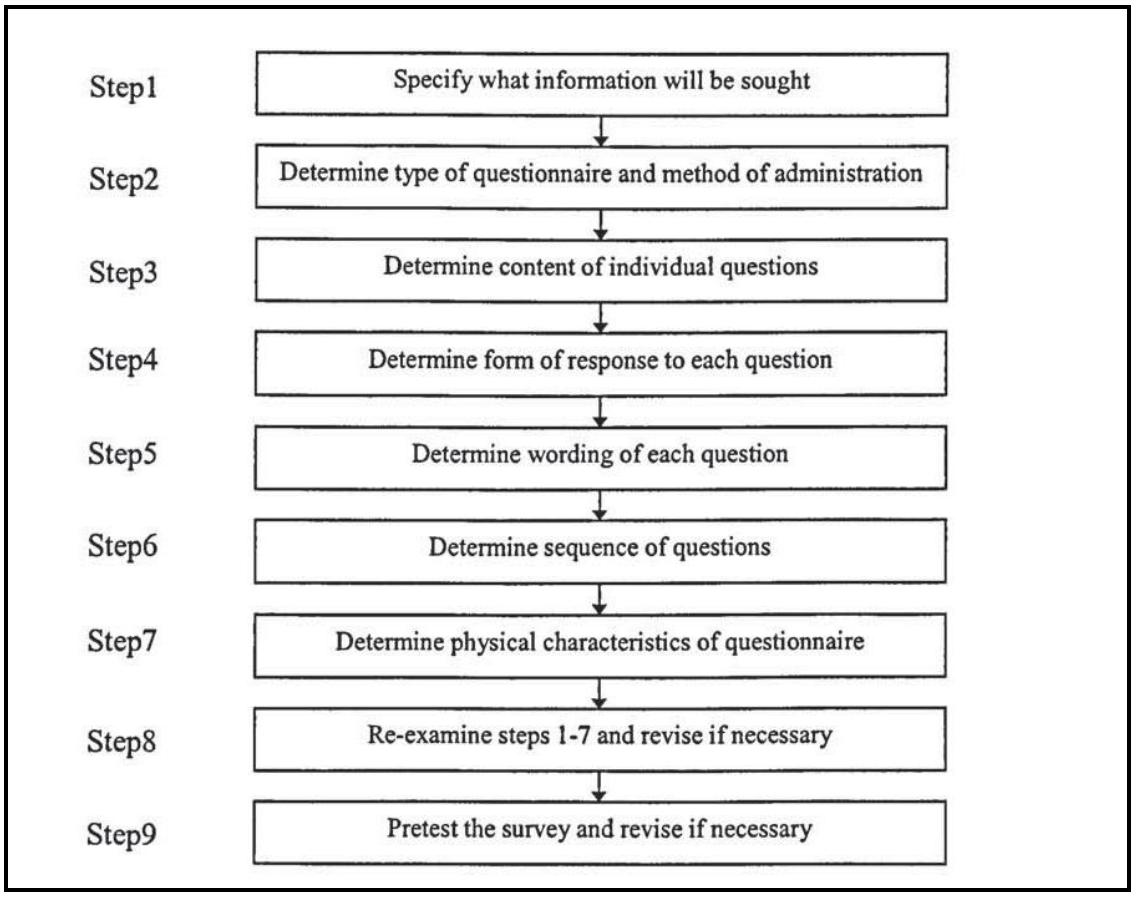
In contrast, Balnaves and Caputi (2001) mentioned that secondary data is more suited to exploratory work in a study and less so to examine a research problem. Moreover, secondary data can be considered as data already generated but published for some purpose other than the immediate study at hand (Churchill, 1999). However, in this study, the researcher initiates primary data instead of secondary data, for the purposes of the immediate study at hand, as mentioned by Churchill (1999).

Once a primary method is chosen, it is necessary to make several supplementary decisions on the actual method of communication. Here, a communication method is one of the basic means of generating the primary data. It involves questioning respondents to secure desired data principally through the use of a questionnaire instrument. In order to generate primary data from respondents, a method has to be adopted that allows the data to be generated and assembled via survey instrumentation. Given the nature of the data needed to examine the conceptualised model and the need to ask questions, the most applicable survey instrument is a questionnaire. The following section describes the development of the questionnaire for this study based on the procedures outlined by Churchill and Iacobucci (2002).

4.6 Survey Instrument Methodology: The Questionnaire Design Process

In order to develop the questionnaire, the researcher has adapted the procedures or guideline suggested by Churchill (1999). There are nine suggested steps that the researcher could follow. This procedure is more of a guideline rather than a strict model that the researcher needs to follow. The guideline is as follow:

Figure 4.2 Stages in developing questionnaire



Source: Churchill and Iacobucci (2002)

4.7 Research Context: Information sought and appropriate informant: SMEs exporting in Malaysia

The present study is focusing on the development of dynamic capability among SMEs in Malaysia in a particular context: international small-to-medium enterprises (SMEs) within the selected manufacturing sector. To be specific, the researcher is only focusing on SMEs that are dynamic in nature and should have exporting activity to at least one country. The firm selection was based on MATRADE and SME directories as discussed in the next section (see section 4.8.1). The purpose of this section is to give an overview of the importance and constraints faced by exporting SMEs and the justification for the research setting.

The international SMEs in Malaysia seem to have a big impact on the growth of the Malaysian economy. For the period 2006 – 2012, the average annual growth rate of SMEs was 6.3%, higher than the average growth of the overall economy of 4.7%.

As a result, SME contribution to GDP increased from 29.4% in 2005 to 32.7% in 2012. Furthermore, Malaysia is the twenty third largest exporters in the world and has signed free trade agreements with many countries and possibly the Trans-Pacific Partnership agreement as well. This will give Malaysia access to some 40 per cent of the world market which is a huge opportunity for the SMEs to spread their wings abroad (newspaper cut December, 2015). The SME Association of Malaysia also strongly urged their members to seriously look at the export market to expand their business. According to Matrade chief executive officer, Datuk Dzulkifli Mahmud, Malaysian SMEs now contribute 19.9 per cent in total exports and the government wants to increase this to 25 per cent by year 2020. As cited in Wright et al. (2005), it is been highlighted that SMEs in emerging economies require the development of managerial strategic flexibility and ability to make decisions over capability-enhancing strategies (Filatotchev et al., 2000; White, 2000). Thus, this is one of the reasons why the researcher chooses Malaysian exporting SMEs as the sample of the current study.

Nevertheless, most SMEs, specifically those in developing countries, will normally face resource constraints. These common constraints include lack of capital, difficulties in procuring raw materials, lack of access to relevant business information, difficulties in marketing and distribution, low technological capabilities, high transportation costs, communication problems, problems caused by cumbersome and costly bureaucratic procedures (especially in acquiring the required licences), and policies and regulations that generate market distortions (Tambunan,2008).

4.7.1 Justification of Malaysia as Study Setting

Justification 1: according to Wright et al. (2005), firms in emerging economies normally face resource insufficiencies and obsolescence. Similarly, Malaysian firms that internationalise are, in general, also faced with complex challenges as well as resource constraints. The lack of resources makes SMEs more likely to fall into capability traps related to their familiarity, their maturity and their proximity (Liao et al., 2003). Moreover, in the Malaysian setting, SMEs are considered as vulnerable to environmental forces compared to larger firms.

Justification 2: one of the Malaysian government's New Economic Development masterplans is to focus on SMEs' development. In doing so, Malaysia provides a very structured approach to SME development. This is because SME development has made a rising contribution to the Malaysian economy, increasing from 29% in 2005 to 32.7% in 2012 (SME Annual Report 2012/13). SMEs in Malaysia account for more than 99% of total establishments in the three main economic sectors of manufacturing, services and agriculture (Saleh and Ndubisi, 2006). In 2012, the Malaysian Prime Minister, Datuk Seri Najib Tun Razak, for instance, provided a holistic development and growth approach masterplan for SMEs, such as funding, capacity building and logistics support as well as helping them to explore export markets. This SME Masterplan (2012–2020) aligned the goals of SME development with the country's aspirations to become a high-income nation by 2020. Moreover, he mentioned that another aim was to help local SMEs to break into the regional and global markets (SME Corp, 2016). In addition, the Malaysian Industrial Master Plans were formulated in order to enhance the growth of the manufacturing sector (MITI, 2005). Therefore, this study mapped the challenges relating to the above situation.

Justification 3: research on dynamic capabilities development can be very fruitful in order to assist the survival of exporting SMEs in Malaysia by overcoming their weaknesses and enhancing their flexibility (quicker acquisition of knowledge about the market needs and opportunities). Thus, having flexibility will make SMEs stronger than large firms. Moreover, Fainshmidt et al. (2016) stated that dynamic capabilities contribute more to performance in developing economies than in developed economies. This is because, Dixon et al. (2010) note, dynamic capabilities are particularly important for firms "*facing significant economic changes, an*

uncertain institutional environment, and poorly developed markets" (Uhlenbruck et al., 2003, p.15). Although dynamic capabilities allow firms to keep with competition in developed economies, they are less likely to give them a competitive edge. However, in developing economies, the "*marginal benefit of dynamic capabilities is likely to be higher due to their rarity and relatively slower diffusion*" (Fainsmidt et al., 2016, p.14). Therefore, the study of dynamic capability in Malaysia setting is reasonable.

Last but not least, this study used a multi-industry sample, as suggested by Hughes et al. (2010), in order to increase observed variance and to strengthen the generalisability of the findings. The databases assessed the industry sector, and the firm size in terms of number of employees and sales turnover. Therefore, in this study, 14 different types of dynamic manufacturing companies were selected from firms with fewer than 200 employees. The reason for choosing the manufacturing sector in this research setting is because this sector substantially contributes to the growth of SMEs and the economy of many countries (Tambunan, 2007).

In summary, this study's sampling frame consists of Malaysian manufacturing SMEs from a multi-industry sample, and they were geographically dispersed. The databases were assessed in terms of the comprehensiveness of fields enabling the identification of dynamism of exporting SMEs in Malaysia, such as how many countries they export to, the industry sectors and the firm size in terms of number of employees.

Having reviewed the research setting and providing the justification for the selected context, the next section considers the most appropriate choice and method of construction of a suitable sampling frame and selection of the sample.

4. 8 Sample Definition

The testing of the hypotheses in this study required particular sampling criteria to be fulfilled. Below are the criteria that the sample should meet:

(i) The sample for this study should be defined as a small or medium enterprise (SME) according to the definition approved by the National SMEs Development Council, Malaysia (that is, an enterprise employing between 5 and not exceeding 200 employees).

Table 4.3 Definition of SME

Category	Micro	Small	Medium
Manufacturing	Sales turnover less than RM300,000 OR Full-time employees less than 5.	Sales turnover from RM300,000 to less than RM15 million OR Full-time employees from 5 to less than 75.	Sales turnover from RM15 million to not exceeding RM50 million OR Full-time employees from 75 to not exceeding 200.

Source: SME Corporation Malaysia (2013), Economic and Policy Planning Division

(ii) The firms must have exporting activities to at least one or more foreign countries. This is to make sure that they have faced sufficient international challenges.

(iii)They need to be manufacturing firms, because they will be facing challenges such as the need to establish and upgrade capabilities due to competing in multiple markets.

4.8.1 Sample frame

This section will further clarify the determination of the sample frame, size and method be used in this study. Developing a comprehensive and representative sampling frame is the most crucial part in this stage.

In the selection of a sample, there is no readily available or complete database that identifies exporting SMEs in Malaysia. This is because; many firms are hesitant to share any data, especially information pertaining to financial performance because of common tax avoidance. Therefore, this study is implementing census population and

a sample population had to be constructive. To identify and categorise SMEs from the exporters directory required a great deal of time. In this case, the researcher needed to recognise and identify the relevant companies one by one via a manual search of a few directories. The main directory is taken from the Malaysia External Trade Development Corporation (MATRADE). Even though the MATRADE database does not cover the whole exporters' population, it was found to be the only comprehensive register of exporting firms in Malaysia. It was set up by the government of Malaysia under the Malaysia External Trade Development Corporation Act 1992, and was established in March 1993 as an external trade promotion support of Malaysia's Ministry of International Trade and Industry (MITI).

According to the law that set up the MATRADE Corporation under Section 13(d), MATRADE has the power to undertake commercial intelligence and market research and create a comprehensive database of information for the improvement and development of trade (MATRADE, 2011). Furthermore, firms registered with MATRADE are more likely to desire a more formal exporting strategy and not one based on unintended exporters. Furthermore, firms registered with MATRADE basically will gain a MATRADE endorsement of their product and services. Thus, from this point of view, MATRADE is considered the most comprehensive and a good database to use. Although it does not cover the entire population of Malaysia exporters, it does cover the widest range of the sample population. However, Churchill (1999) mentioned that there is rarely a perfect correspondence between the sampling frame and the target population of interest.

Next is the process of selection, where the researcher is using the MATRADE product directory website, updated on August 2013 (MATRADE, 2013) for its list of Malaysian exporting firms from various industries. This product directory lists Malaysian exporters of all sizes of companies, comprising manufacturers, contract manufacturers and traders. To suit this study, the researcher selected 14 different types of industries which basically have dynamism in their nature. Dynamism can be defined as amount of change in technologies, customer preferences and modes of competition in the firm's principal industries (Miller, 1987). Jansen et al.'s (2006) definition is also incorporated; they defined dynamic environments as characterised by changes in technologies (e.g. telecommunication and computers), variations in customer preferences (e.g. fashion and food) and fluctuation (e.g. commodities and

minerals and alloys). In addition, Deed et al. (2000) and Pisano (1994) listed a few industries with high technology background as having dynamism in their nature; such as computers, electronics, software development and pharmaceutical and medical instruments. Therefore, in this study, 14 different types of dynamic industries were selected in general: agricultural produce; beverages; chemical, minerals and alloys; computer hardware; computer software; consumer and industrial electrical and electronic products; electrical and electronic parts and components; fashion accessories and textiles; machinery and equipment; medical products; pharmaceutical, toiletries and cosmetics; prepared food; telecommunication; and, last but not least, textiles and yarns. A total of around 5689 companies are categorised as manufacturing exporters in the MATRADE database.

In order to reduce the possible sampling error arising from missed elements, great care was taken during the selection and construction of the sampling frame. This involved double-checking elements and cross-referencing as much as possible. Next, the list of 5689 firms taken from the MATRADE database was checked against the second and third available databases, which are taken from the Federal Manufacturing Malaysia (FMM) directory published in 2012 and 2013 as well as the SME directory website.

The researcher then started to carry out a detailed crosscheck with the FMM and SME directories in order to filter out the firms categorised as SMEs. This is because the FMM directory updates information in every publication and provides fairly complete information, such as the company's name, postal address, email, contact person name, the number of employees and the current export markets. Cross-referencing in this manner is to eliminate duplication, and reduces the possibility for sampling error by improving the match between the sampling frame and the conceptually defined population. In addition, the reasons of cross reference is to check the firms categories as SME. It is because in MATRADE directory they only listed manufacturing exporter in general (large and small firms).

Finally, the number of firms identified as SME exporters was reduced to 1105 companies from the total of 5689 exporting companies. In this instance, the researcher had a target sample population of 1105 exporting SMEs and the survey was implemented with all of them.

4.8.2 Key informants

According to Bryman (1989), the informant is usually someone of seniority who can speak for the organisation. This is also applied in entrepreneurial organisations (Cycyota and Harrison, 2002). Therefore, this survey was addressed to the top management of the companies. The researcher contacted chief executive officers (CEO), top-level managers, or founders of a selected industry of SMEs in Malaysia who were responsible for formulating and implementing the firm's strategic decisions (Kumar, Stern, and Anderson, 1993). Such top management are believed to have internal and external knowledge regarding the organisation and have similar responsibilities regardless of organisational size or scope (Norburn, 1989). The CEO or founder of a company will be the key informant to provide key insights into organisational practices, processes and outcomes (Huber and Power, 1985; Stubbart, 1989). To assess informants' quality, the researcher indicated their degree of knowledge on a seven-point scale (1 = 'very limited knowledge', 7 = 'very substantial knowledge') about the issues under study.

In this case, the researcher implemented the single primary informant. Although the use of single primary informant is a common practice within positivistic organisational research, one could argue that there are various problems when using a single respondent, such as danger from perceptual error by management reason, response error, bias, and not providing an objective response (Dyer and Hatch, 2006). In consequence, this would result in common method bias. However, it is argued that SMEs are simpler organisations compared to larger ones; therefore, the top management of these companies normally would have a comprehensive knowledge of the organisation's processes and issues (Caldeira and Ward, 2002; Wiklund and Shepherd, 2003).

"In large firms CEOs might be separated from "how a firm operates" by layers of middle-managers". However, this is less likely a problem for small and medium sized businesses" (Wiklund and Shepherd, 2003, p. 1310).

Thus, founders, managing directors or CEOs of the SME firms were good enough to be the most appropriate respondents to provide information about their firm's current practices and processes.

4.8.3 Unit and level of analysis

A unit of analysis is essential in order to define the research problem (Zikmund, 2000). It refers to the level of investigation upon which the study focuses. The selection of unit of analysis was *a priori,* well before the data collection process, because the unit of analysis determines how a scale is treated (Hair et al., 2006). Furthermore, not having done so in advance may mean that later analyses cannot be performed. This could happen when the level of reference is different from the unit of analysis, for example, collecting data at one level and interpreting the result at a different level (cited in Forza, 2002). Therefore, the unit of analysis in this study has been determined when formulating the research question (Forza, 2002) and the researcher selected the exporting manufacturing SMEs and the organisational routines of the firm's capabilities and processes as the unit of analysis. It is because, routines and capabilities cause firm-level outcomes, such as financial performance, innovation, and the boundaries of the firm *(*e.g., Nelson and Winter, 1982; Kogut and Zander, 1992; Teece et al., 1997; Eisenhardt and Martin, 2000; Winter, 2003).

Next, after determine the sample frame and the right key informants; a survey will be carried out. Survey can be administered in a number of ways, which will now be assessed. Next, is the discussion on various types of communication methods that the researcher could use to manage the survey.

4.9 Various types of communication methods

Surveying can be carried out by using a web survey, interviewing, drop and collect, or self-administered questionnaire sent through the post. Each communication method has advantages as well limitations. Decisions without careful consideration on which method is best cannot be made; they must be based on the needs of the specific survey as well as time, cost and resource constraints (Forza, 2002). Not only that, a compromise between positive and negative aspects also has to be made when deciding which method is the most suitable for the particular study.

After considering all the factors, the researcher decided to use mixed-mode surveys in this study (Dillman et al., 2009) because having more than one communication method could possibly increase the response rate. Therefore, three main communication methods were chosen, and will be further explained as follows:

Web survey - The web survey is a method of self-administered questionnaires that. This method carries a greater likelihood of contacting otherwise inaccessible respondents, for example chief executive officers and top management officers. In this study, the main advantages of using Qualtrics are in terms of time and cost savings in conducting the survey. In general, it allows respondents to take their time to respond. Hence, more accurate answers can be given and respondents will not be subjected to interviewer bias. It is also significantly enhanced by the knowledge that data capture would be accurate. Qualtrics also provided a sophisticated questionnaire design module which significantly improved the efficiency of the design process and the professional appearance and appeal of the final survey. Moreover, web survey is the least expensive, requires minimal staff, and can be easily carried out. Not only that, web questionnaire also eliminates biasing error because the bias error may result from the personal characteristics of the interviewer and from variability in their skills. Last but not least, web survey is easy to access because it provides wider coverage of geographical contact. Nevertheless, from the respondent's perspective it was easy to use and confidential. Qualtrics also had the advantage of monitoring and adapting the survey in real time as responses were received. The respondents also could be targeted in batches and invitations directed to those segments of the population which in the final stages were evidencing insufficient aggregate numbers of replies. In particular, Qualtrics also offers a choice of question types to suit the requirements of the researcher. Another advantage of using Qualtrics is, it allow exporting the survey data either into excel or SPSS. The first survey was launched during the first week of May 2014, and covered the whole sample population of 1015 companies. After a month, only a few companies had replied with complete answers. Therefore, the researcher decided not to depend on only one type of communication mode, and, another communication type was applied, in order to increase the response rate. However, by the end of this web survey, this method had contributed the highest number of returned and complete questionnaires.

Postal mail administration - Questionnaires were randomly mailed to 500 out of 1015 companies with a covering letter assuring anonymity and confidentiality, and a stamped reply envelope. A covering letter explained the purpose of the study. Complete confidentiality was guaranteed to the respondents. At the end of this postal mail-out, fewer than 20 companies had returned the completed surveys, which supported the idea to use a mixed-mode approach to survey implementation.

Individual visit (drop and pick) - Some studies (e.g. Ibeh et al., 2004; Baruch and Holtom, 2008) indicate that making an individual visit to each of the companies will contribute to a higher response rate. However, this does not apply to this study. After a month and half of visiting almost 60 companies, the researcher had managed to receive fewer than 30 complete surveys. These companies were selected through a random sampling. Most of the company just took the survey set without participating or returning it, even though the researcher had gone to collect it.

4.10 Questions properties and operationalisation of key constructs

In general, there are four types of scales for quantifying information: nominal, ordinal, interval and ratio (Bryman and Bell, 2007; Sekaran and Bougie, 2010). A nominal scale is one in which numbers are assigned to individuals or phenomena. Their purpose is merely to give a label to a class or category. Nominal characteristics do not show any order of distinctions. Using nominal data, very little statistical analysis can be carried out. Only percentages, frequencies, and the mode can be calculated, and limited statistical techniques such as Chi-square can be used to determine significant differences between categories. While ordinal level is number that is assigned to data on the basis of some order. For instance the data is in an order that ranges from the bottom to the top. However, it is not possible to quantify precisely how much difference there is between the categories (de Vaus, 1986). For interval level, data represent numbers used to rank items such that numerically equal distance on the scale represents equal distance in the property being measured. This is, in addition to classification and order. There are precisely defined intervals between and among observations. What is lacking with an interval scale is a stable starting point (an absolute zero), and consequently, the scales cannot be interpreted in any absolute sense. Next, is a ratio scale; a type of scale that uses numbers that rank items in order that the intervals are equal in measurement and have an absolute zero point (de Vaus, 1986). Precisely, this study uses nominal and interval scales. The

instruments in Section A of the questionnaire mainly use nominal scales, while Sections B, C, D, E and F use interval scales with a seven-point Likert scale and the last section (Section G) uses a nominal and interval scales as well as an open questions.

4.10.1 Operationalisation of key constructs

For the operationalisation of the constructs, this study used existing scales that have been tested for validity and reliability in previous research. Although some of the scales were modified and rephrased to suit the purpose and context of this study, most of them were maintained in their original form. Next, a three-year time frame was allocated to most of the questionnaire sections. According to Zahra, Ireland and Hitt (2000), in their journal article, a two-year time frame is perfect to capture some of the effects of international expansion and technological learning. Although a longer time of four or five years might be necessary, this would have resulted in some disturbance of business performance. Thus, as an average, the researcher decided to use three years as the required time frame.

Independent Variables: Learning Exploration and Exploitation

Learning: The learning orientation construct includes 10 items repeated from the work of Atuahene-Gima and Murray (2007) to indicate the extent of exploitative and exploratory learning in the firms. These measurements are believed to be the most suitable ones to explain the exploration and exploitation of learning. This is because the measurement items that have been used are comprehensive and cover the purpose of this study. For instance, their items for exploitative learning covered the extent to which the learning activities focused on the acquisition of information and product knowledge base for the purpose of improving productivity and efficiency. On the other hand, the items for exploratory learning is covered on to which extend the firm members had searched for and used information during the process (Atuahene-Gima and Murray, 2007). In this study, learning exploration is defined based on March's logic and was operationalized as search scope (Gupta et al., 2006); "*the essence of exploration is experimentation with new alternatives*" (1991: 85), while learning exploitation is defined as "*learning that gained via local search, experiential refinement, and selection and reuse of existing routines*" (Baum, Li and Usher, 2000, p. 768).

In detail, Atuahene and Murray (2007) discussed that *learning exploitation* consists of five items regarding the refinement of common methods and ideas, the search for generally proven methods and solutions, the acquisition of information to ensure productivity and update the firm's current project and market experiences, and the emphasis on the use of knowledge related to existing project experience (Huang and Li, 2012).

In contrast *learning exploration* comprises five items focusing on learning activities that involve experimentation and high market risks, the search for knowledge that leads the firm to enter into new markets and technological areas, and the acquisition of novel information that goes beyond current market and technological experiences (Huang and Li, 2012). Below are the items sourced from the study by Atuahene-Gima (2007). These measurements were anchored with the seven-point Likert scale ranging from 'strongly disagree'=1 to 'strongly agree'=7.

5 items – Learning Exploitation

- Our aim is to search for information to refine common methods and ideas in solving problems in the project.
- Our aim is to search for ideas and information that we can implement well to ensure productivity rather than those ideas that could lead to implementation mistakes in the project and in the marketplace.
- We search for the usual and generally proven methods and solutions to product development problems.
- We use information acquisition methods (e.g., survey of current customers and competitors) that help us understand and update the firm's current project and market experiences.
- We emphasise the use of knowledge related to our existing project experience.

5 items – Learning Exploration

- In information search, we focus on acquiring knowledge of project strategies that involve experimentation and high market risks.
- We prefer to collect information with no identifiable strategic market needs to ensure experimentation in the project.
- Our aim is to acquire knowledge to develop a project that leads us into new areas of learning such as new markets and technological areas.
- We collect novel information and ideas that go beyond our current market and technological experiences.
- Our aim is to collect new information that forces us to learn new things in the product development project.

Independent Variables: Innovation Exploration and Exploitation

Innovation exploration is conceptualizing as radical innovations that are designed to meet the needs of emerging customers or markets (Benner and Tushman 2003, p. 243; Danneels 2002). For innovation exploitation, it is conceptualize as incremental innovations that are designed to meet the needs of existing customers or markets (Benner and Tushman 2003, p. 243; Danneels 2002).

In this study, the innovation orientation construct is taken from Jansen et al. (2006) and Yalcinkaya et al. (2007)'s studies. All items are combined under two constructs, exploration innovation and exploitation innovation. To be more specific, for exploration innovation, seven items were taken from Jansen et al. (2006) and another two items were taken from Yalcinkaya et al. (2007). The items for exploratory innovation captured the extent to which units depart from existing knowledge and pursue innovations for emerging customers or markets and the items for exploitative innovation captured the extent to which units build on existing knowledge and meet the needs of existing customers (Benner and Tushman, 2003; Danneels, 2002; Jansen et al., 2006). In addition, Yalcinkaya et al. (2007) define "exploration capabilities" as the ability to adopt new processes, products, and services that are unique from those used in the past and "exploitation capabilities" as the ability to improve continuously its existing resources and processes (p.4). In their study, exploration capability encompasses search, variation, risk taking, experimentation, and innovation, whereas exploration capabilities as the strategic insights that enable firms to develop novel strategies before competitors (Collis, 1994; Yalcinkaya et al., 2007, p.76). Hence, the items were divided as follow:

Exploration innovation

- Our unit accepts demands that go beyond existing products and services.
- We invent new products and services.
- We experiment with new products and services in our local market.
- We commercialise products and services that are completely new to our unit.
- We frequently utilise new opportunities in new markets.
- Our unit regularly uses new distribution channels.
- We regularly search for and approach new clients in new markets.

(Jansen et al., 2006)

- Our firm chooses new approaches to processes, products and services that are different from those used in the past.
- Our firm has included some new aspects to its processes, products and services compared to prior strategies.

(Yalcinkaya et al., 2007)

The same condition applied to the exploitation innovation. Six items were taken from the study by Jansen et al. (2006) and the other two were taken from Yalcinkaya et al. (2007).

Exploitation innovation

- We frequently refine the provision of existing products and services.
- We regularly implement small adaptations to existing products and services.
- We introduce improved, but existing products and services for our local market.
- We improve our provision's efficiency of products and services.
- We increase economies of scales in existing markets.
- Our unit expands services for existing clients.

(Jansen et al., 2006)

- Employees of our firm try to continuously improve the firm's processes, products and services.
- Employees of our firm believe that improvement of the firm's processes, products and services is their responsibility.

(Yalcinkaya et al., 2007)

The scale used was a seven-point Likert scale with a range from 'strongly disagree' =1 to 'strongly agree'=7.

Moderators: Resource Slacks

Slack resources indicate the buffer or cushion of actual or potential resources available for redeployment and transformation in an organisation (George, 2005). Drawing upon previous research (e.g., Singh, 1986; Tan and Peng, 2003; Voss et al., 2006), this study adopted the distinction between absorbed slack and unabsorbed slack. The absorbed slack consists of three items tapping the extent to which the development of the project is under available capacity, under available human resources, and under available time for developmental activities among members. The unabsorbed slack consists of three questions about whether the supply of the retained earnings, financial resources, and debt financing with banks is sufficient whenever the

firm needs them (Huang and Li, 2012). The scale use was a seven-point Likert scale with a range from 'strongly disagree'=1 to 'strongly agree'=7. The items are as shown as below:

3 items – Operational slack

- The development of the project is under the available capacity of your company.
- The development of the project is under the available human resources of your company.
- The development of the project is under the available time for development activities among members.

3 items – Financial slack

- The supply of retained earnings of your company is sufficient as funds whenever the project needs it.
- The supply of financial resources of your company is sufficient whenever the project needs it.
- The supply of debt financing with banks of your company is sufficient whenever the project needs it.

Moderator: International Diversification

International diversity is defined as an international expansion across the borders of global regions and countries by the SMEs. To be more specific, it consists of the ways the SMEs use their resources to expand their international activities. The scale was adapted based on prior research by Hitt et al., (1997), Inkpen and Dinur (1998) and Lord and Ranft (2000). Those scales capture the number and importance of a firm's foreign subsidiaries. The scale in this study comprises the following items measured on a seven-point Likert-type scale, ranging from 'strongly disagree'=1 to 'strongly agree'=7.

3 items – International Diversification

- Large parts of our company's sales are generated abroad.
- We have affiliates in a large number of countries.
- The international business is very important for our firm.

Independent Variables and Control Variables: Dynamic Capabilities

These measurements were built based on the scales established by Pavlou and Sawy (2011) because they offered more concrete and measurable dynamic capabilities compared to study by Teece (2007) (refer Table 2.1). In addition, they "*identify the underlying components of each capability, thus showing that the capabilities closely correspond to the dynamic capabilities literature*" (Pavlou and Sawy, 2011, p. 260). The definitions, routines and sources of each of the constructs are listed in the previous Table 2.1. All the constructs used the seven-point Likert scale asking the respondents to rate the effectiveness each of the items below, 'not effective'=1 to 'very effective'=7.

Table 4.4 Dynamic capabilities

Sensing Capability
1. We frequently scan the environment to identify new business opportunities.
2. We periodically review the likely effect of changes in our business environment on customers.
3. We often review our product development efforts to ensure they are in line with what the customers want.
4. We devote a lot of time implementing ideas for new products and improving our existing products.
Learning Capability
1. We have effective routines to identify, value, and import new information and knowledge.
2. We have adequate routines to assimilate new information and knowledge.
3. We are effective in transforming existing information into new knowledge.
4. We are effective in utilizing knowledge into new products.
5. We are effective in developing new knowledge that has the potential to influence product development.
Integrating Capability
1. We are forthcoming in contributing our individual input to the group.
2. We have a global understanding of each other's tasks and responsibilities.
3. We are fully aware who in the group has specialized skills and knowledge relevant to our work.

4. We carefully interrelate our actions to each other to meet changing conditions.
5. Group members manage to successfully interconnect their activities.
Coordinating capability
1. We ensure that the output of our work is synchronized with the work of others.
2. We ensure an appropriate allocation of resources (e.g., information, time, reports) within our group.
3. Group members are assigned to tasks commensurate with their task-relevant knowledge and skills.
4. We ensure that there is compatibility between group members expertise and work processes.
5. Overall, our group is well coordinated.

Substantive Capabilities Development

These variables were developed and modified from Zahra, Ireland and Hitt (2000). The measurement items for substantive capabilities are referring to very specific skills of innovation and marketing capabilities, for instance product development skills, Research & development (R&D) skills, manufacturing skills, business development skills, marketing skills and customer servicing skills. To be more precise, 'stage' and 'speed' were originally built from the technological learning stage and speed scales.

Initially, twelve items were built for each of the 'stage' and 'speed' constructs: manufacturing skills, product development skills, R&D skills, venture funding skills, engineering skills, process and development skills, customer servicing skills, technology sourcing skills, technology development skills, plant management, marketing skills and business development skills. All the constructs used the seven-point Likert scale asking the respondents to rate the stage (depth) of their firms in developing new skills, from 'basic'=1 to 'complex'='. Firms also need to rate their speed on how fast they developed their new skills, from 'slow'=1 to 'fast'=7.

Dependent Variable: Business Performance

Because the majority of exporting SMEs in the researcher database were not listed, thus, it is not required to provide financial statements (Wilden and Gudergan, 2015). The researcher used perceived measures to assess business performance. Using stated performance measures is a common practice in strategy-related research when financial data are unavailable (e.g., Powell 1992). According to Wilden and Gudergan (2015), previous research showed high correlations between objective and subjective performance measures. Hence, it is fair enough to rely on one type of performance measure.

Following the study of Li, Huang and Tsai (2009), the researcher measured the business performance variable with three dimensions: efficiency, growth, and profit. These measurements were classified as an intangible measurement. A study by Jarvis et al. (2000) stated that most of the owners or managers of small business firms preferred to use subjective measurement compared to so-called 'objective' indicators of business performance as defined in terms of, for example, standard accounting information. Moreover, a few owners or managers did claim to use profit and loss figures, but generally these were considered as lag indicators because they tended to be only available on an annual or monthly basis.

In this current study, respondents were asked to rate the satisfaction of their firm's current performance on a seven-point Likert scale in relation to competitors. The scale was anchored from 'not at all satisfied'=1 to 'very satisfied'=7. In addition, respondents were also asked to rate their previous year's performance in relation to their major competitors, which was based on the seven-point Likert scale of 'much worse'=1 to 'much better'=7.

Three items measured efficiency: return on investment, return on equity, and return on assets in the past three years. Similarly, three items measured growth: sale growth, employee growth, and market share growth, and a further three items measured profit: return on sales, net profit margin, and gross profit margin (Murphy et al., 1996).

3 items – Efficiency

- My firm is usually satisfied with return on investment.
- My firm is usually satisfied with return on equity.
- My firm is usually satisfied with return on assets.

3 items – Growth

- My firm is usually satisfied with sale growth.
- My firm is usually satisfied with employee growth.
- My firm is usually satisfied with market share growth.

3 items – Profit

- My firm is usually satisfied with return on sales.
- My firm is usually satisfied with net profit margin.
- My firm is usually satisfied with gross profit margin.

Control Variables

In this recent study, when testing the business performance relationship the researcher keeps EDCS, EDCL, BDCI and BDCC as control variables. This is because, literature suspected that DCs could directly link to performance, but equally the researcher used as control variables because the same literatures often fail to explain why DCs are affecting business performance. In addition, control variables have no difference from dependent variable; they are used to predicted hypotheses for the other relationship as dependent variable.

Respondent Characteristics: Position, Experience and Degree of Knowledge Measures

Measures were incorporated to detect aspects of respondent characteristics that could later be used to test and ensure that the respondent was of an appropriate position, and possessed sufficient experience and a sufficient degree of knowledge to respond to items in the questionnaire. The measures utilised in this respect were:

What is your job title (position)? To what extent do you feel you possess knowledge regarding the questions asked in this questionnaire?

4.10.2 Questionnaire Format/Design and Re-examination

After determining the suitable variables and measurement, the next key thing is to make sure the design and the format of the questionnaires is appropriate. A considerable degree of time and effort was committed to designing and formulating the questionnaire in order to reduce common method bias (CMB) (Podsakoff et al., 2003). To address this issue, Podsakoff et al. (2003) has design a consideration that they recommend for alleviating risk of CMB/CMV issues, such as: (1) allow the respondents' answers to be anonymous; (2) assure respondents that there are no rights or wrong answers; and (3) counterbalance the order of the measurement of the independent and dependent variables (Podsakoff et al., 2003 and Sousa et al., 2008). Additionally, the questionnaire also went through four vigorous draft revisions and examination before it was considered suitable to advance to the pilot study.

4.10.3 Pre-test study

The initial version of the questionnaire was submitted for a pre-test study between the months of March 2014 and April 2014 and administered to 30 respondents, including managers of relevant companies, academicians and research students (this pre-test sample is excluded from the final study). This pre-test study was conducted to test for face and content validity of the measures used in the questionnaire. In the pre-test, a small pool of different types of exporting SMEs was asked to fill in the questionnaire. At the end of the questionnaire, the pre-test respondents then were asked to evaluate the clarity or the ambiguity of the questions relevant to the Malaysian SME exporters. The questions they were asked are as follows:

Q1. Is each question coherent and understandable?

Q2. Are the terms used in the questionnaire set appropriate and suitable?

Q3. Is the Malay or Chinese translation easy to understand compared to the English version? If not, why?

In addition to test the linguistic clarity and validity, the researcher sought assistance from postgraduate management students and colleagues at Northern University of Malaysia. Furthermore, the suggestions of relevant academics expert in the themes of this research were also taken into account when reviewing the survey. The feedback from this pre-test study was used for modification purposes. In addition, this survey was expecting the respondents to be fairly fluent in English. It is because; a questionnaire in the English language will be used (Gabrielsson et al. 2008). However, the survey was also including Malay-speaking and Chinese-speaking firms, so the researcher had the whole questionnaire translated by a professional translation firm to improve the validity and reliability of the measurement instruments. The English measures were translated into Malay and Chinese (simplified). A back-translation was performed to ensure that the English, Malay and Chinese versions were comparable, and native speakers checked the translations for accuracy. This took place because the researcher is aware that there are multiracial societies in Malaysia, mainly from Malay and Chinese backgrounds. Therefore, having more choice of questionnaire sets is expected to increase the chances of respondents answering the survey in their preferred language.

Finally, a number of useful comments were gathered and certain issues were incorporated into the revision of the questionnaire. Most of the comments referred to the length of the questionnaire. Therefore, the researcher used those opinions and suggestions to revise and re-examine the questionnaire in order to reduce the length. In May 2014, the final questionnaire was mailed to 1015 SMEs, after improving the questions so as to eliminate ambiguous questions.

Prior to commencing the statistical analysis of the survey responses that are presented in Chapter 5, the next section provides response rate and the outputs of testing for non-response bias.

4.11 Response rate

Of the 1105 firms to which the questionnaire was distributed, only 800 firms were identified as being potentially able to answer the survey. 305 firms were considered not available to participate (refer to Table 4.5). This is because some of the firms had opted out of the survey via email or postal mail, or the email did not reach the intended recipient because the firm had closed down or gone out of operation, and, last but not least, some of the firms no longer physically existed. This was confirmed by phone call as well as through the researcher making a personal visit to these firms.

Table 4.5 Total respondents that not available to participate

Reasons	**Apologies and opt out**	**Bounced/returned emails**	**No longer in existence**	**Total**
Number of respondents	103	190	12	305

At the end of this study, 145 firms had returned the questionnaires. After eliminating 15 cases that indicated incomplete answers and some firms that are not categorised as an exporter, this study yielded 130 completed, usable questionnaires (a 16.25% response rate) for the ensuing data analysis. Therefore, an overall sample population of 130 were involved in this study. Even though Diamantopoulos and Siguaw (2000) state that the more variables encompassed in one's model, the greater the sample size requirement, Hoyle (1995) suggests that a minimum recommended sample size when engaging in covariance structure modelling is 100 to 200 subjects. Meanwhile, Hair et al. (1995) also share the same view as Hoyle (1995): that the required minimum sample size when running LISREL is around 100 to 150 subjects. Thus, this study met the minimum sample size required.

After many techniques and procedures were applied to this study in order to enhance the response rate, 16.25% of the questionnaires were usable. The response rate for this study was considered fairly high response rates; particularly, because it involved a key person from each organisation (owner/director/top-level managers) and the average top management response rates are in the range of 15–20% (Menon et al.,

1999; Sousa et al., 2008). Although Baruch and Holtom (2008) stated that research conducted at top executive level is evidenced to have a lower response rate, however, this is not applied to this study. The response rate for this study is considered as good response, especially among the business population range (between 18 and 27%) (Hart, 1987, cited in Ibeh et al., 2004). This is because, these key persons usually have a busy schedule and they do not really cooperating with or entertain academic research. In addition, the response rate of this study is comparable with other studies conducted in the Malaysian setting.

4.11.1 Non-response bias

Non-response is a problem because it raises the question of whether those who respond are somehow different from those who do not respond (Churchill and lacobucci, 2002). Following Armstrong and Overton (1977), a non-response bias check was employed by comparing early with late respondents. The assumption here is that late respondents are more likely to show characteristics of non-respondents than early respondents are (Armstrong and Overton, 1977).

In this study, it was first assumed that there was no bias in the response. Next, a technique suggested by Armstrong and Overton (1977) was conducted to compare the differences in characteristics of different groups of respondents based on the response time period. To assess non-response bias, the researcher uses the T-test in order to compare late respondents and early respondents regarding the means of several variables (Armstrong and Overton, 1977). The researcher found no significant differences between the two groups and therefore concluded that there were no meaningful problems in this study regarding response bias. The result below (Table 4.6) shows that the differences between the means for early respondents and that of late respondents were not significant at five per cent significant level.

Table 4.6 Non-response bias test

Variables	Sig. of t-values
EDCL	0.218964
BDCI	0.83146
BDCC	0.534192
IEXPLT	0.062152
LEXPLT	0.410427
IEXPLR	0.177618
LEXPLR	0.403953

The next section will detail the approach adopted and decision taken towards achieving an effective implementation of the survey, as effective survey implementation is critical to successful data generation.

4.12 Main Survey Implementation: Tailored design method and means to enhance response rate

The most seminal and heavily-cited work in the area of survey implementation is by Dillman (1978), who proposed the value of the *Total Design Method* of survey implementation. Dillman revised this seminal work with the *Tailored Design Method* (2000) in an attempt to adapt the one-size-fits-all approach of the *Total Design Method* to a broader series of alternative situations a researcher can typically be confronted with. *Tailored Design* refers to the development of survey designs that use common procedures grounded in social exchange theory on why people do or do not respond to surveys. This is similar to the *Total Design Method* but differs in that it goes further to describe the additional shaping of procedures and techniques for particular surveys based on more precise considerations (Dillman, 2000).

Dillman (1978, 2000) argued that the administration of a survey should be made in stages broadly covering pre-notification, cover letter, presentable questionnaire, follow-up reminder, the use of incentives and personalisation. Therefore, in this study, the researcher followed each of these steps in order to enhance the response rate.

i) *Pre-notification or advance notice*: before mailing the real survey questions, the researcher sent a pre-notification, through email and postal mail. The main reason for sending the advance notice is to inform the respondents of their selection in the survey sample and that they have a choice to answer the questionnaire package either via web survey or postal mail. In addition, pre-notification could also act as a direct attempt to encourage response. Another intention of pre-notification is to gain the attention of survey recipients and inform them of the purpose and importance of the study. Dillman (1978; 2000) stresses that pre-notification should establish the importance of the topic and stimulate support from the recipient. In this advance notice, the text was designed to convince recipients that a problem exists and is broadly important to the SMEs' environment and their help is needed in order to generate quality information and to identify the solutions. Not only that, an

explanation was given of how the recipient was selected and assurances made of confidentiality and how the data would be used, and teaser information provided on incentives. All letters pertaining to the questionnaire were developed through the Qualtric web survey as well as being printed on University and Department letterhead paper because this has been found to positively impact response rates (Diamantopoulos et al., 1991).

A week after sending the advance notice, it was found that some of the recipients refused to participate in the survey, some of them decided to opt out of the survey, and more than 150 firms could not be reached because the email was undelivered. Most of the reasons related to busy schedules or the firm's policy. Some of the undelivered notifications mentioned that the companies were no longer using the email address or that the email had been blocked by their IT systems, or the firm's email account was over its quota, and some of the email addresses provided were incorrect. Then, the researcher decided to give a phone call to those firms that had not responded and ask for their participation. During this phone call, it was found that some firms had not received the email and later emails were sent upon the new information given.

ii) *Cover letter and personalisation:* after providing advance notification to the firms, the questionnaire package was sent out with a cover letter stating that the potential respondents for this study would be the owner, chief executive officer, managing director, and top-level managers. To ascertain valid respondents and to enhance the response rate during the data collection, the names and positions (personalisation) of the intended recipients were placed on the cover letter. As per Dillman's recommendations (1978; 2000), personalisation could encourage response and demonstrates effort on behalf of the researcher to gain a response. Furthermore, in this cover letter, the text was written to re-emphasise the importance of the research project and its purpose, as well as to emphasise the importance of the recipient replying the questionnaire. Method of selection was again covered. Benefits were also stressed, such as ease and speed of completion, incentives, freepost return and confidentiality.

iii) *Presentable questionnaire*: in general, questionnaires are laid out to be quite friendly and clear, in order to positively influence the decision to participate. However, the format and layout of this questionnaire will be automatically designed inside the Qualtric web survey with a presentable layout to be seen on a computer screen as well as on a smartphone screen. Additionally, for the purpose of mailing out the questionnaire, it was printed on the same high-quality paper as all of the letters.

iv) *Follow-up reminder*: the questionnaire was first launched during the first week of May, 2014. The first reminder was sent during the first week of June and the second reminder was sent a month later. In this study, a reminder email, together with another copy of the questionnaire and a prepaid return envelope, was sent to those who had not replied by three weeks after the initial mail-out. It is proven that reminders are highly effective in increasing the response rate (Jobber and O'Reily, 1998). Four weeks later, a second reminder was sent to companies who had not replied. A number of apologies were received from companies who would not be able to complete the questionnaire, as well as a number of returned emails due to wrong addresses. Then, the researcher allowed another four months' time frame with a couple of reminder, before ending the data collection process.

v) *The use of incentives*: this study used a lucky draw as an incentive and motivation to answer the survey. This study provided a voucher of RM50, RM100 and RM150 to three winners. Three out of 130 respondents were selected randomly at the final stage of the data collection process.

Next, prior to commencement of data collection, this research applied for ethical approval from the Durham University Business School.

4.12.1 Ethical Considerations

The researcher had to complete a research ethics flowchart provided by the university, after discussion with research supervisor. The researcher then had to complete the details as requested, by highlighting YES or NO after each box inside the flowchart. Later on, the signature of the main supervisor was needed to complete the overall procedures.

With regard to the study itself, firstly, the respondents were approached via email as well as via a letter, in two stages (first with only a cover letter and second with a pre-notification letter). A letter of invitation together with a cover letter was sent, to initially identify the respondents, to introduce the purpose of the study and to clarify that their participation in this study was voluntary and optional for them, but yet very important to the success of the study. In both stages, the researcher clearly stated that their firms were selected through certain directories, in order to avoid any doubt on how the researcher obtained their details, such as email address and job position. The researcher also highlighted in the cover letter and pre-notification letter that all information will be treated with strict confidentiality and will only be seen by the two academic researchers involved in this study. No information relating to any individual firm will ever be released to anyone under any circumstances and questionnaire information will only be used in an anonymous form in combination with all other responses to form the results.

A week after sending the cover letter, the researcher then started to send the pre-notification letter with the questionnaire and a direct link to the web survey. Respondents who indicated that they did not want to be involved in this study were excluding from receiving any further letter or information. Overall, the objective for this research ethic is to ensure that the information is to be kept private and confidential.

4.13 Data Analysis Techniques: Structural Equation Model (SEM) as a Tool

This study was analysed using the Statistical Package for the Social Sciences (SPSS) and a Structural Equation Model (SEM). The demographic data are tested in the form of descriptive analysis using SPSS and the research model was examined using the SEM. The exogenous and endogenous variables were also analysed. Exogenous variables are identical to independent variables, while endogenous latent variables are identical to dependent variables. These endogenous variables are influenced by the exogenous variables in the model, either directly or indirectly.

Later on, the research hypotheses were tested using Linear Structural Relationships (LISREL) (Gefen, 2003). The validity and reliability of the constructs in the measurement model were also assessed.

SPSS - A brief explanation of the data analysis and the statistical methods used for analysing the data is presented here. The Statistical Package for the Social Sciences (SPSS) version 20 was used to analyse the questionnaire data. In order to purify the instrument items, exploratory factor analysis (EFA) was carried out to examine the validity of the items and confirm the fundamental structure among the scale variables. Nunnally (1978) recommended that factor loadings higher than 0.4 be considered as of practical significance. Therefore, any item that has a factor loading score lower than 0.4 was eliminated from the analysis. In addition, Cronbach's Alpha was used to examine the reliability of the scale items. A reliability coefficient (alpha) of 0.70 or higher is considered to indicate acceptable reliability (Nunnally, 1978; Grahn and Gard, 2008). Then, the items were tested using Confirmatory Factor Analysis (CFA) and the overall model fit by using LISREL.

SEM-LISREL – LISREL is computer software used to conduct covariance structure analysis (Gefen, 2003). LISREL is the most widely used software for structural equation modelling and indeed is almost synonymous with SEM (Hair et al., 1998). This is because LISREL provides a fairly powerful, and convenient, means for examining group differences and it offers a second-generation multivariate technique which includes structural equation modelling and factor analysis modelling.

In general, many researchers have used SEM (LISREL) to analyse their data (e.g. Amason, 1996; Mukherjee, 2003; Wei et al., 2014). In addition, researchers in the marketing area often use it because it can test theoretically supported linear and

additive causal models (Haenlein and Kaplan, 2004; Statsoft, 2013). SEM is used for estimation of the measurement and structural model (Joreskog and Sorbom, 1995). According to Kline (2005), it provides a straightforward method for handling multiple relationships while providing statistical efficiency. Moreover, SEM allows the comprehensive identification of a relationship and provides a transition from exploratory to confirmatory analysis (Chang and Cheung, 2001; Joreskog and Sorbom, 1995). This approach is usually effective for hypothesis testing.

4.13.1 Justification for selecting Covariance Based (CB-SEM) over PLS SEM

The reasons for choosing the SEM as the analysis technique in this study were because:

(i) SEM enabled the researcher to answer a set of interrelated research questions in a single, systematic, and comprehensive analysis by modelling the relationships among multiple independent and dependent constructs simultaneously (Gerbing and Anderson, 1988).

(ii) Unlike regression tools, SEM not only assesses the structural model, the assumed causation among a set of dependent and independent constructs (specifies the direct and indirect relations among the latent variables), but, in the same analysis, SEM also evaluates the measurement model, loadings of observed items (measurements) on their expected latent variables (constructs). The measurement models also address the reliability and validity of the indicators in measuring the hypothetical constructs (Byrne, 1998).

The combined analysis of the measurement and the structural model enables measurement errors of the observed variables to be analysed as an integral part of the model, and those factor analyses could be combined in one operation with the hypotheses testing. Not only that, the result was found to be a more rigorous analysis of the proposed conceptual model (Jöreskog and Sörbom, 1989).

However, it is necessary to understand that there are many types of SEM in social sciences research. For instance, there is a debate discussing PLS-SEM and CB-SEM. To be more detailed, the PLS-SEM approach differs from CB-SEM. There is a philosophical difference between the two, and Hair, Ringle and Sarstedt (2011)

believe that they are each beneficial for different types of research. If the research is oriented towards confirmation and testing, for instance, then CB-SEM should be used. However, if there is no strong previous theory but there is a need for the development of such, the choice should be PLS-SEM. This distinction is based on other attributes of these two complementary types of structural equation modelling. Therefore, CB-SEM is best suited for this study, because this study is looking to contribute to the theory development, and LISREL is one of the software packages that could be used for CB-SEM analyses (Hair et al., 2011). Furthermore, because the data in this study is normally distributed and is under normal conditions, thus CB-SEM should provide more precise model estimation. In addition, the data for CB-SEM is also expected to have minimal missing values. If these data requirements are violated, there are possibilities of convergence failures, biased parameter estimates, inflated goodness of fit indices, and underestimated standard errors (Shah and Goldstein, 2006).

However, both methods are identified as having pros and cons. CB-SEM results can provide a very poor measurement model, yet a strong relationship between latent variables; in contrast, PLS-SEM can provide an acceptable measurement model but a weak relationship between latent variables. In addition, the results of these two approaches might differ, but the use of good measures and data will produce very similar results (Tenenhaus, 2008). Similarly, according to Reinartz, Haenlein, and Henseler (2009), the differences between CB-SEM and PLS-SEM estimates are very small. Hence, the use of one analysis to another is not a big issue. This is because the results from CB-SEM and PLS-SEM should not be too different (Hair et al., 2011).

4.14 Summary

This chapter has provided a detailed description of the method employed in this study. The development of the questionnaire is based on the procedures outlined by Churchill and Iacobucci (2002). 17 constructs, were used to test the proposed hypothesis. This constructs were adopted and developed based on the previous literature. Next, the questionnaires were delivered to the key informants within the exporting SMEs manufacturing company in Malaysia. 130 questionnaires were usable for the actual data analysis to test the hypothesis.

CHAPTER 5 : DATA ANALYSIS AND FINDINGS

This chapter will:

- Review the descriptive analysis of respondents and industry backgrounds.
- Report on the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA).
- Scrutinise the reliability and validity of the study constructs.
- Discuss the hypothesis testing and run the Structural Equation Model (SEM).

5.0 Introduction

Given the nature of this study, the researcher selected a particular group of respondents to represent the potential target sample population. This study uses a population census, as explained in Chapter 4, section 4.8.1. The respondents were among the top levels of management and were identified as key individuals inside the exporting SME manufacturing firms in Malaysia. A total of 130 firms participated in the final sample, with no missing values. Furthermore, this chapter reports on the data analysis (descriptive analysis) and hypotheses tests using structural models.

]To begin, a number of empirical tests were conducted to examine the suitability of the scales. For example, an EFA was performed followed by a CFA. IBM SPSS Statistics were used to facilitate the preliminary analysis and EFA, while LISREL was used in order to run the CFA and to perform the hypotheses testing by way of structural equation modelling. The hypothesis testing was explained in detail through two separate models. The front end of the model (SEM 1 and SEM 2) includes moderation variables and the second half of the model (SEM 3 and SEM 4).

5.1 Sample Descriptive Analysis: General Characteristics of Respondents and SMEs

This section starts with a brief explanation of the analysis of the survey results and quantitative findings. It begins with a profile description of the respondents' job position within their firm, and their level of knowledge to be able to answer the survey (Table 5.1 and 5.2). This is followed by the descriptive statistics of the exporting SME manufacturing firms in Malaysia. These descriptive statistics are explained by reporting the frequency table to assist the researcher in understanding and interpreting the important features of the data that has been obtained (Ferguson, 1981). Frequency is characterised by the count of each category for a certain variable, usually derived in the form of percentages.

Table 5.1 shows that CEOs and Managing Directors were the highest positions of contributors to the current study; 42.31 per cent of the 130 respondents described themselves as CEOs or Managing Directors. This was followed by Managers or Executives (40.77 per cent), General Managers (8.46 per cent) and Owners (6.15 per cent). The group of Managers and Executives were also considered to be of sufficient ranking and expertise because of the term 'executive'. Thus, in this study, almost 98 per cent of the respondents (Owners, CEOs, Managing Directors, General Managers and Managers and Executives) were described as a key individual in the firm and have extensive knowledge about the firm's mission, vision and strategy. The findings of this study are expected to provide an accurate and reliable set of results, based on the standard of the respondent. There were only 2.32 per cent of responses treated as a missing value in this instance, and this is represented by respondents who did not want to reveal their job position in the firm.

Furthermore, almost 91 per cent of the respondents rated themselves as possessing detailed knowledge, ranging from 4 to 7 (see Table 5.2) regarding the question asked in the survey. This, once again, supports the first analysis where almost 98 per cent of the respondents described themselves as holding a position within the top levels of management. Another 9.2 per cent of respondents rated themselves as having knowledge below 4 (the midpoint). Although they were described as having low levels of knowledge, the researcher still included their responses because 9 per cent of them were holding a job position at top management levels (i.e. Assistant Export Manager, Owner, Head of Finance and Administration, as well as CEO or Director).

Hence, the researcher does not want to disregard their responses, although they rated themselves as having a limited knowledge on this survey. Their responses were still considered as meeting the criteria required in order to assist this study.

Table 5.1 Respondent's Job Position

Position	Frequency (n=130)	Percentage (100%)
Owner	8	6.15
CEO/Managing Director	55	42.31
General Manager	11	8.46
Manager/Executives	53	40.77
Missing Value	3	2.31
TOTAL	**130**	**100.00**

Table 5.2 Knowledge Possessed by Respondents

Scale (1-7)	Frequency (n=130)	Percentage (100%)
1	0	0
2	0	0
3	12	9.2
4	23	17.7
5	50	38.5
6	30	23.1
7	15	11.5
TOTAL	**130**	**100.00**

No knowledge (1); Full knowledge (7)

Next, the descriptive findings about the exporting SMEs background are considered. As discussed in the previous chapter, the sample population's background was among the SMEs which have shown exporting activities to more than two countries. Table 5.3 shows the age of the company, the size of the company (based on the number of full-time employees) as well as the type of industry sector that was involved in this study.

From Table 5.3, it is seen that more than 26 per cent of the SMEs have been established for more than 20 years, 30 per cent of the SMEs considered their age between 11 to 20 years old, 23.85 per cent was in the age range of 5 to 10 years old, and 20 per cent were established for less than 5 years. Hence, the researcher considered that over 50 per cent of the SMEs which were involved in this study were established firms (11 to more than 20 years old) and another 40 per cent were

considered as new and young firms (less than 5 years through to 10 years old). Next, the number of a company's full-time employees ranged from less than five employees to 251 and over. Table 5.3 showed that 97.7 per cent of the firms are considered as SMEs as the number of the full-time employees is below 200 (following the definition for SMEs operated in Malaysia). These results reflect that the study had focused on the right sample population target. In addition, the manufacturing sector that was considered to have the most dynamic characteristics in nature was divided into 13 sub-sectors. Of the sample population, 20.7 per cent were in the beverages and prepared food sectors, the agricultural produce sector was indicated as 10 per cent of the SMEs involved, and the rest of the sectors that were involved were between 0.8 per cent and 6.2 per cent. Even though nearly 34 per cent of the SMEs respondents indicated their firms as part of the "Others" sector, the researcher assumed that the respondents were not clear on exactly which category they fell into. From the data, it was clear to the researcher that 24 per cent of the firms were under the category of computer hardware, computer software, consumer and industrial products, prepared food, as well as in telecommunication. The other 10 per cent of respondents reported that their firms are in the furniture industry, health and beauty, automotive, precision turned parts, decorative flooring material and making wood products. In conclusion, the selection of the firms, covering a wide range of industry sectors, is appropriate and beneficial for an investigation of the proposed hypotheses concerning the dynamic capability of the firm's business performance.

Table 5.3 SMEs Profile

SMEs Profile	Frequency (n=130)	Percentage (100%)
Year of establishment (Firm age)		
Less than 5 years ago	26	20.00
5-10 years ago	31	23.85
11-15 years ago	16	12.31
16-20 years ago	23	17.69
More than 20 years ago	34	26.15
Total	**130**	**100.00**
Number of full time employees (Firm size)		
5 employees or less	20	15.4
6-20	43	33.1
21-50	30	23.1
51-100	16	12.3
101-200	18	13.8
201-250	2	1.5
251 and over	1	0.8
Total	**130**	**100.00**
Type of industry sectors		
Agriculture produce	13	10.0
Beverages	15	11.5
Chemical, Minerals and Alloys	3	2.3
Computer Software	3	2.3
Consumer & Industrial Electrical and Electronic Product	8	6.2
Electrical & Electronic parts and components	7	5.4
Fashion & Textiles	7	5.4
Machinery Equipment	7	5.4
Medical product	4	3.1
Pharmaceutical, Toiletries & Cosmetics	5	3.8
Prepared Food	12	9.2
Textiles, Yarns and Other Related Materials	1	0.8
Others	45	34.6
Total	**130**	**100.0**

After reporting the simple description about the respondents' background and the SMEs profile, the researcher now moves on to report the data purification and reduction process.

5.2 Exploratory Factor Analysis (EFA)

The purpose of exploratory factor analysis is to extract the minimum number of factors that are able to explain the covariance among the observed variables, or how many factors are needed to best represent the data in that respect. According to Byrne (2001), it is the researcher that must decide which variables should be retained or deleted rather than relying on the statistical data itself.

In this study, 130 cases in the data set were subjected to principal component analysis. The Varimax rotation method was used because the data demonstrated high correlation among the extracted factors. Items with less than 0.45 loading, and which are cross-loaded on two or more factors at 0.45 or higher, were excluded. A loading of 0.45 was used because it has been suggested that one should take into account sample size when determining which factor loading is significant (Hair et al., 1998). Traditionally, a loading of 0.3 requires a sample size of over 350 to be significant at the 5% level. According to Hair et al. (1998), when the sample size is around 150 cases, the critical value for the factor loading increases to 0.45 at the 5% level. An Eigenvalue of 1 was used as the cut-off value for extraction. The iterative sequence of factor analysis and item deletion was repeated, resulting in a final list of 81 items belonging to 15 distinct constructs.

Next, the reliability was assessed for each construct by using the Cronbach's alpha coefficient (α); the most commonly used measure of reliability. The "corrected item-total correlation" and "Cronbach's alpha if item deleted" was included while examining the factor structures of the survey items for each construct. The reason for this is that "Cronbach's alpha if item deleted" normally indicates an impact on the reliability when deleting a particular measure from the scale. For instance, if the deletion of an item increases Cronbach's alpha, it would mean that the deletion of this scale item improves scale reliability, and such an item is worthwhile considering for removal as a part of data purification and data reduction.

Generally, perfect reliability is indicated by a coefficient of 1. In practice, a construct is considered reliable when it has an alpha value of greater than 0.70 (Nunnally, 1978; Churchill, 1979). In this study, the Cronbach's alpha coefficient (α) for each construct was above the threshold level of 0.70. Therefore, the constructs in this present study reflect a good degree of reliability (refer Table 5.4- 5.11).

Table 5.4 EFA for Learning Exploratory and Innovation Exploratory

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
Learning Exploratory (LEXPLR)	*LEXPLR4 - Our aim is to acquire knowledge to develop a firm that leads us into new areas of learning such as new technological area.*	**0.899**	**0.863**	**70.58**
	LEXPLR3 - Our aim is to acquire knowledge to develop a firm that leads us into new areas of learning such as new markets.	**0.885**		
	LEXPLR6 - Our aim is to collect new information that forces us to learn new things in the firm product development.	**0.771**		
	LEXPLR5 - We collect novel information and ideas that go beyond our current market and technological experiences.	**0.626**		
Innovation Exploratory (IEXPLR)	*IEXPLR3 - We experiment with new products and services in our local market.*	**0.856**	**0.932**	**68.29**
	IEXPLR4 - We commercialize products and services that are completely new to our unit.	**0.848**		
	IEXPLR2 - We invent new products and services.	**0.817**		
	IEXPLR5 - We frequently utilize new opportunities in new markets.	**0.815**		
	IEXPLR8 - Our firm chooses new approaches to processes, products and services that are different from those used in the past.	**0.775**		
	IEXPLR9 - Our firm has included some new aspects to its processes, products and services compared to prior strategies.	**0.725**		
	IEXPLR7 - We regularly search for and approach new clients in new markets.	**0.686**		
	IEXPLR1 - Our unit accepts demands that go beyond existing products and services.	**0.647**		

Extraction Method: Principal Component Analysis; Rotation Method: Varimax with Kaiser Normalization

Table 5.5 EFA for Learning Exploitation and Innovation Exploitation

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
Innovation Exploitation (IEXPLT)	*IEXPLT3- We introduces improved, but existing products and services for our local market.*	**.844**		
	IEXPLT1- We frequently refines the provision of existing products and services.	**.839**		
	IEXPLT5- We increase economies of scales in existing markets.	**.830**		
	IEXPLT8- Employees of our firm believe that improvement of the firm's processes, products and services is their responsibility.	**.809**	**0.939**	**70.23**
	IEXPLT6- Our unit expands services for existing clients. (Lowering costs of internal processes is an important objective.)	**.801**		
	IEXPLT7- Employees of our firm try to continuously improve the firm's processes, products and services.	**.799**		
	IEXPLT2- We regularly implements small adaptations to existing products and services.	**.794**		
	IEXPLT4- We improves our provision's efficiency of products and services.	**.788**		
Learning Exploitation (LEXPLT)	*LEXPLT2- Our aim is to search for ideas and information that we can implement well to ensure productivity rather than those ideas that could lead to implementation mistakes in the firm and in the marketplace.*	**.852**		
	LEXPLT5- We emphasizes the use of knowledge related to our existing firm experience.	**.852**		
	LEXPLT1- Our aim is to search for information to refine common methods and ideas in solving problems in the firm.	**.847**	**0.886**	**70.10**
	LEXPLT4- We use information acquisition methods (e.g., survey of current customers and competitors) that help us understand and update the firm's current project and market experiences.	**.771**		
	LEXPLT3- We search for the generally proven methods and solutions to product development problems.	**.718**		

Table 5.6 EFA for Emerging Dynamic Capability and Branching Dynamic Capability

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
Emerging Dynamic Capability (EDC)	*EDCL-We are effective in transforming existing information into new knowledge.*	**.822**		
	EDCS -We often review our product development efforts to ensure they are in line with what the customers want.	**.820**		
	EDCL-We are effective in developing new knowledge that has the potential to influence product development.	**.804**		
	EDCS-We devote a lot of time implementing ideas for new products and improving our existing products.	**.804**		
	EDCL -We are effective in utilizing knowledge into new products.	**.790**	**0.956**	**76.54**
	EDCL-We have effective routines to identify, value, and import new information and knowledge.es.	**.783**		
	EDCS-We periodically review the likely effect of changes in our business environment on customers.	**.770**		
	EDCL -We have adequate routines to assimilate new information and knowledge.	**.741**		
	EDCS--We frequently scan the environment to identify new business opportunities.	**.738**		
Branching Dynamic Capability (BDC)	*BDCC -We ensure an appropriate allocation of resources (e.g., information, time, reports) within our group.*	**.877**		
	BDCC -Group members are assigned to tasks commensurate with their task-relevant knowledge and skills.	**.867**	**0.967**	**40.02**
	BDCC-Overall, our group is well coordinated.	**.866**		

BDCC-We ensure that the output of our work is synchronized with the work of others.	**.862**
BDCC -We ensure that there is compatibility between group members expertise and work processes.	**.849**
BDCI-Group members manage to successfully interconnect their activities.	**.795**
BDCI-We are fully aware who in the group has specialized skills and knowledge relevant to our work.	**.754**
BDCI-We carefully interrelate our actions to each other to meet changing conditions.	**.750**
BDCI -We can successfully reconfigure our resources to come up with new productive assets.	**.708**
BDCI -We often engage in resource recombination to better match our product-market areas and our assets.	**.677**

Although the EFA considers EDC and BDC to be one thing, theoretically this was not appropriate and is why the researcher split them later on in the CFA into more component parts. The EDC components are treated as EDCL and EDCS; and the BDC components are treated as branching dynamic capability coordinating (BDCC) and branching dynamic capability integration (BDCI). This approach is justified by the fact that the CFA factor loadings, average variance extracted (AVE) and CR are all very large (see Table 5.6, p.120).

Table 5.7 EFA for Resource Slack

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
Resource Slack Financial (FS)	*FS-The supply of financial resources of your firm is sufficient whenever the project needs it.*	**.906**	**0.921**	**86.55**
	FS-The supply of debt financing with banks of your firm is sufficient whenever the project needs it.	**.903**		
	FS-The supply of retained earnings of your company is sufficient as funds whenever the firm needs it.	**.902**		
Resource Slack Organizational (OS)	*OS-The development of the firm is under the available human resources of your company.*	**.850**	**0.813**	**80.45**
	OS-The development of the firm is under the available capacity of your company.	**.849**		
	OS-The development of the firm is under the available time for development activities among members.	**.760**		
Past Business Performance (PBP)	*Return on investment (ROI)*	**0.871**	**0.960**	**76.16**
	Return on sales (ROS)	**0.923**		
	Net profit margin	**0.892**		
	Overall profitability	**0.894**		
	Return on assets (ROA)	**0.904**		
	Return on equity (ROE)	**0.914**		
	Sale growth	**0.862**		
	Market share growth	**0.733**		
	Employee growth	**0.846**		

Table 5.8 EFA for International Diversity

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
International Diversity (ID)	*Large parts of our firm's sales are generated abroad.*	**.896**	**0.783**	**69.81**
	The international business is very important for our firm.	**.795**		
	We have affiliates in a large number of countries.	**.812**		

Table 5.9 EFA for Speed of Innovation and Marketing

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
Speed of Innovation (SPI)	*Speed (time)-Product development skills*	**.826**	**0.833**	**67.64**
	Speed (time)-Manufacturing skills	**.821**		
	Speed (time)-Research & development (R&D) skills	**.784**		
	Speed (time)-Venture funding skills	**.668**		
Speed of Marketing (SPM)	*Speed (time)-Marketing skills*	**.918**	**0.881**	**73.94**
	Speed (time)-Business development	**.878**		
	Speed (time)-Customer servicing skills	**.789**		

Table 5.10 EFA for Stage of Innovation and Marketing

Construct	Items	Factor Loading	Cronbach's Alpha	Cumulative variance explained (%)
Stage of Innovation (STI)	*Stage-Manufacturing skills*	**.874**	**0.827**	**75.40**
	Stage-Product development skills	**.833**		
	Stage-Research & development (R&D) skills	**.741**		
	Stage-Venture funding skills	**.577**		
Stage of Marketing (STM)	*Stage-Business development*	**.921**	**0.895**	**83.15**
	Stage-Marketing skills	**.908**		
	Stage-Customer servicing skills	**.788**		

Table 5.11 EFA for Current Business Performance

Construct	Items	Factor Loading	Cronbach's Alpha Mean	Cumulative variance explained (%)
Current Business Performance (CBP)	*Return on investment (ROI)*	**.942**	**0.971**	**81.37**
	Return on sales (ROS)	**.940**		
	Net profit margin	**.939**		
	Overall profitability	**.928**		
	Return on assets (ROA)	**.922**		
	Return on equity (ROE)	**.916**		
	Sale growth	**.898**		
	Market share growth	**.825**		
	Employee growth	**.795**		

5.3 Confirmatory Factor Analysis (CFA)

After initial scale purification, CFA was run to test the measurement model using LISREL. In order to run this, firstly all remaining measurement items were separately inserted into three sets of CFA: CFA1, CFA2 and CFA3. Next, some adjustment was made on the basis of modification indices and from there some items were eliminated. After the refinement of the measures, the result of the CFA model fit statistics (Table 5.13) reveal a robust model fit. CFA 1, 2 and 3 were above the threshold suggested by Hu and Bentler (1999). According to them, root mean squared error of approximation (RMSEA) should be close to 0.06, while Browne and Cudeck (1993) suggested that RMSEA values should be in the range of 0.05 to 0.08 to indicate fit, and if the value is greater than 0.10 it indicates a poor fit. Garver and Mentzer (1999) mentioned that a Comparative Fit Index (CFI) and Non-Normed Fit Index (NNFI) of 0.90 or higher would suggest unidimensionality. An RMSEA less than 0.05, NNFI, Incremental Fit Index (IFI), RNI, CFI, or GFI greater than 0.90, and parsimony indexes greater than 0.80 may be useful in some solutions, but they often lead to inappropriate decisions in others (e.g. decision rules for the acceptability of the parsimonious model often lead to inappropriate decisions), and should be considered only as rules of thumb (Hu and Bentler, 1999).

Accordingly, the results of the three sets of CFAs as measurement models in this study provide evidence of unidimensionality of the scales. All items loaded significantly onto their respective constructs. In addition, the CFA also indicated that several items had shared residual variance, and these were dropped accordingly in order to achieve unidimensionality and good fit indexes in LISREL. The dropped items are reported in Table 5.12 and the model yields an excellent fit when particular relevant items are deleted. According to Gefen (2000), it is normal that items are dropped during CFA because this analysis also examines unidimensionality and ensures that the residual variance of the items does not significantly overlap.

Table 5.12 Final Solution for CFA: Items dropped and remained

Constructs	Measurement items (from EFA)	Item dropped	Item remained
Learning Exploration (LEXPLR)	*LEXPLR4 - Our aim is to acquire knowledge to develop a firm that leads us into new areas of learning such as new technological area.*		**YES**
	LEXPLR3 - Our aim is to acquire knowledge to develop a firm that leads us into new areas of learning such as new markets.		**YES**
	LEXPLR6 - Our aim is to collect new information that forces us to learn new things in the firm product development.		**YES**
	LEXPLR5 - We collect novel information and ideas that go beyond our current market and technological experiences.	**YES**	
Constructs	**Measurement items (from EFA)**	**Item dropped**	**Item remained**
Learning Exploitation (LEXPLT)	*LEXPLT2- Our aim is to search for ideas and information that we can implement well to ensure productivity rather than those ideas that could lead to implementation mistakes in the firm and in the marketplace.*		**YES**
	LEXPLT5- We emphasizes the use of knowledge related to our existing firm experience.		**YES**
	LEXPLT1- Our aim is to search for information to refine common methods and ideas in solving problems in the firm.		**YES**
	LEXPLT4- We use information acquisition methods (e.g., survey of current customers and competitors) that help us understand and update the firm's current project and market experiences.	**YES**	
	LEXPLT3- We search for the generally proven methods and solutions to product development problems.		**YES**

Constructs	Measurement items (from EFA)	Item dropped	Item remained
Innovation Exploration (IEXPLR)	*IEXPLR3 - We experiment with new products and services in our local market.*		**YES**
	IEXPLR4 - We commercialize products and services that are completely new to our unit.		**YES**
	IEXPLR2 - We invent new products and services.		**YES**
	IEXPLR5 - We frequently utilize new opportunities in new markets.	**YES**	
	IEXPLR8 - Our firm chooses new approaches to processes, products and services that are different from those used in the past.		**YES**
	IEXPLR9 - Our firm has included some new aspects to its processes, products and services compared to prior strategies.	**YES**	
	IEXPLR7 - We regularly search for and approach new clients in new markets.	**YES**	
	IEXPLR1 - Our unit accepts demands that go beyond existing products and services.	**YES**	
Constructs	**Measurement items (from EFA)**	**Item dropped**	**Item remained**
Innovation Exploitation (IEXPLT)	*IEXPLT3- We introduces improved, but existing products and services for our local market.*		**YES**
	IEXPLT1- We frequently refines the provision of existing products and services.		**YES**
	IEXPLT5- We increase economies of scales in existing markets.	**YES**	
	IEXPLT8- Employees of our firm believe that improvement of the firm's processes, products and services is their responsibility.	**YES**	
	IEXPLT6- Our unit expands services for existing clients.		**YES**

	IEXPLT7- Employees of our firm try to continuously improve the firm's processes, products and services.		**YES**
	IEXPLT2- We regularly implements small adaptations to existing products and services.	**YES**	
	IEXPLT4- We improves our provision's efficiency of products and services.	**YES**	
Constructs	**Measurement items (from EFA)**	**Item dropped**	**Item remained**
Organizational Slack (OS)	*OS-The development of the firm is under the available human resources of your company.*		**YES**
	OS-The development of the firm is under the available capacity of your company.		**YES**
	OS-The development of the firm is under the available time for development activities among members.		**YES**
Financial Slack(FS)	*FS-The supply of financial resources of your firm is sufficient whenever the project needs it.*		**YES**
	FS-The supply of debt financing with banks of your firm is sufficient whenever the project needs it.		**YES**
	FS-The supply of retained earnings of your company is sufficient as funds whenever the firm needs it.		**YES**
International Diversity (ID)	*Large parts of our firm's sales are generated abroad.*		**YES**
	The international business is very important for our firm.		**YES**
	We have affiliates in a large number of countries.		**YES**
Past Business Performance (PBP)	*PBP5Return on investment (ROI)*	**YES**	
	PBP6 -Return on sales (ROS)		**YES**

	PBP3 -Net profit margin	**YES**	
	PBP 9-Overall profitability		**YES**
	PBP 7-Return on assets (ROA)		**YES**
	PBP 8-Return on equity (ROE)		**YES**
	PBP2 -Sale growth	**YES**	
	PBP 1-Market share growth	**YES**	
	PBP 4-Employee growth	**YES**	
Constructs	**Measurement items (from EFA)**	**Item dropped**	**Item remained**
Stage Innovation (STI)	*Stage-Manufacturing skills*		**YES**
	Stage-Product development skills		**YES**
	Stage-Research & development (R&D) skills		**YES**
	Stage-Venture funding skills	**YES**	
Stage Marketing (STM)	*Stage-Business development*		**YES**
	Stage-Marketing skills		**YES**
	Stage-Customer servicing skills		**YES**
Speed Innovation (SPI)	*Speed (time)-Product development skills*		**YES**
	Speed (time)-Manufacturing skills		**YES**
	Speed (time)-Research & development (R&D) skills		**YES**
	Speed (time)-Venture funding skills	**YES**	
Speed Marketing (SPM)	*Speed (time)-Marketing skills*		**YES**
	Speed (time)-Business development		**YES**
	Speed (time)-Customer servicing skills		**YES**

Construct	Measurement items (from EFA)	Item dropped	Item remained
Emerging Dynamic Capability (EDC)	*EDCL7-We are effective in transforming existing information into new knowledge.*		**YES**
	EDCS3-We often review our product development efforts to ensure they are in line with what the customers want.		**YES**
	EDCL9-We are effective in developing new knowledge that has the potential to influence product development.	**YES**	
	EDCS4-We devote a lot of time implementing ideas for new products and improving our existing products.	**YES**	
	EDCL 8-We are effective in utilizing knowledge into new products.		**YES**
	EDCL5-We have effective routines to identify, value, and import new information and knowledge.es.		**YES**
	EDCS2-We periodically review the likely effect of changes in our business environment on customers.		**YES**
	EDCL 6-We have adequate routines to assimilate new information and knowledge.		**YES**
	EDCS1--We frequently scan the environment to identify new business opportunities.		**YES**
Construct	**Measurement items (from EFA)**	**Item dropped**	**Item remained**
Branching Dynamic Capability (BDC)	*BDCC5-We ensure an appropriate allocation of resources (e.g., information, time, reports) within our group.*		**YES**
	BDCC6 -Group members are assigned to tasks commensurate with their task-relevant knowledge and skills.	**YES**	
	BDCC8-Overall, our group is well coordinated.		**YES**

	BDCC4-We ensure that the output of our work is synchronized with the work of others.		**YES**
	BDCC 7-We ensure that there is compatibility between group members expertise and work processes.		**YES**
	BDCI 3-Group members manage to successfully interconnect their activities.		**YES**
	BDCI 1-We are fully aware who in the group has specialized skills and knowledge relevant to our work.		**YES**
	BDCI 2-We carefully interrelate our actions to each other to meet changing conditions.		**YES**
	BDCI 11-We can successfully reconfigure our resources to come up with new productive assets.	**YES**	
	BDCI 12-We often engage in resource recombination to better match our product-market areas and our assets.	**YES**	
Construct	**Measurement items (from EFA)**	**Item dropped**	**Item remained**
Current Business Performance (CBP)	*CBP5Return on investment (ROI)*	**YES**	
	CBP6 -Return on sales (ROS)		**YES**
	CBP3 -Net profit margin	**YES**	
	CBP 9-Overall profitability		**YES**
	CBP 7-Return on assets (ROA)		**YES**
	CBP 8-Return on equity (ROE)		**YES**
	CBP2 -Sale growth	**YES**	
	CBP 1-Market share growth	**YES**	
	CBP 4-Employee growth	**YES**	

After selecting which items should be retained and which items should be deleted from the CFA, the final solution of CFA measurement models was run. Nahm et al. (2004) stated that, if the structural model fits the data adequately the t-values of the structural coefficients can be used to test the research hypothesis. According to Joreskog and Sorbom (1993), the measurement model is used to describe how well the observed indicators serve as measurement instruments for the latent variables. The key concepts of a measurement model are measurement, reliability and validity (Joreskog and Sorbom, 1993). With respect to reliability, the literature has presented construct reliability (CR) and AVE, and these are reported in Table 5.13.

Table 5.13 Confirmatory Factor Analysis (CFA) of Measurement Models

Construct	Measurement Item	Standardized Factor Loading (lambda)	*t*-value	Construct Reliability (CR)	Average Variance (AVE)
CFA 1					
Learning Exploration (LEXPLR)	LEXPLR3	0.87	12.13	**0.88**	**0.72**
	LEXPLR4	0.91	12.89		
	LEXPLR6	0.76	9.95		
Learning Exploitation (LEXPLT)	LEXPLT1	0.88	12.34	**0.88**	**0.64**
	LEXPLT2	0.84	11.41		
	LEXPLT3	0.67	8.33		
	LEXPLT5	0.81	10.76		
Innovation Exploration (IEXPLR)	IEXPLR2	0.88	12.46	**0.90**	**0.69**
	IEXPLR3	0.95	14.27		
	IEXPLR4	0.81	11.08		
	IEXPLR8	0.64	7.90		
Innovation Exploitation (IEXPLT)	IEXPLT1	0.82	10.99	**0.89**	**0.67**
	IEXPLT3	0.91	13.02		
	IEXPLT6	0.78	10.21		
	IEXPLT7	0.76	9.80		
Confirmatory Factor Analysis (CFA1): $\chi^2 = 138.80$; df = 84; χ^2 / df = 1.65; RMSEA = 0.071; CFI =0.981; IFI =0.981; NNFI = 0.976					

Construct	Measurement Item	Standardized Factor Loading (lambda)	*t*-value	Construct Reliability (CR)	Average Variance (AVE)
CFA 2					
Organizational Slack (OS)	RS1	0.66	7.83	**0.81**	**0.59**
	RS2	0.77	9.47		
	RS3	0.86	10.85		
Financial Slack (FS)	RS4	0.90	12.79	**0.92**	**0.80**
	RS5	0.91	13.22		
	RS6	0.87	12.26		
International Diversity (ID)	ID1	0.97	11.54	**0.80**	**0.58**
	ID2	0.65	7.46		
	ID3	0.61	7.05		
Past Performance Business (PBP)	PBP6	0.92	13.69	**0.96**	**0.84**
	PBP7	0.92	13.72		
	PBP8	0.96	14.79		
	PBP9	0.86	12.14		
Confirmatory Factor Analysis (CFA2): χ^2 =82.83; df = 59; χ^2 / df = 1.40; RMSEA =0.056 ; CFI =0.981; IFI =0.982; NNFI = 0.975					
Construct	**Measurement Item**	**Standardized Factor Loading (lambda)**	***t*-value**	**Construct Reliability (CR)**	**Average Variance (AVE)**
CFA 3					
Stage Innovation (STI)	STI1	0.64	7.87	**0.86**	**0.68**
	STI2	0.92	13.30		
	STI3	0.88	12.50		
Stage Marketing (STM)	STM1	0.71	9.25	**0.91**	**0.77**
	STM2	0.94	14.10		
	STM3	0.96	14.59		
Speed Innovation (SPI)	SPI1	0.62	7.65	**0.86**	**0.68**
	SPI2	0.91	13.21		
	SPI3	0.91	13.10		
Speed Marketing (SPM)	SPM1	0.70	9.00	**0.89**	**0.73**
	SPM2	0.93	13.80		
	SPM3	0.92	13.43		

Emerging Dynamic(EDCS)	EDCS1	0.87	12.25	**0.92**	**0.79**
	EDCS2	0.93	13.67		
	EDCS3	0.86	12.10		
Emerging Dynamic(EDCL)	EDCL5	0.87	12.51	**0.95**	**0.82**
	EDCL6	0.94	14.15		
	EDCL7	0.93	13.92		
	EDCL8	0.88	12.70		
Branching Dynamic (BDCI)	BDCI1	0.88	12.53	**0.93**	**0.82**
	BDCI2	0.90	13.05		
	BDCI3	0.94	14.20		
Branching Dynamic (BDCC)	BDCC4	0.92	13.61	**0.95**	**0.84**
	BDCC5	0.93	13.79		
	BDCC7	0.90	13.19		
	BDCC8	0.92	13.55		
Current Business Performance (CBP)	CBP6	0.92	13.71	**0.96**	**0.86**
	CBP7	0.96	14.75		
	CBP8	0.96	14.72		
	CBP9	0.88	12.63		
Confirmatory Factor Analysis (CFA3): $\chi^2 = 616.68$; df = 369 ; χ^2 / df = 1.67; RMSEA = 0.072; CFI = 0.971; IFI = 0.971; NNFI =0.966					

Table 5.13 shows the construct reliability (CR) and AVE results. As can be seen, all construct reliabilities exceed Bagozzi and Yi's (1988) recommended cut-off value of 0.50. However, while other constructs have good results for the AVE test, OS and ID have values slightly lower compared to other constructs. The recommended threshold of AVEs is 0.50 as suggested by Bagozzi and Yi (1988). Furthermore, it has been suggested that AVEs even lower than 0.4 are not severe problems (cf. Diamantopoulos and Siguaw, 2000). It is relevant to note the AVE result for OS and

ID as it may influence interpretation of later results, although it should be kept in mind that their Cronbach alpha scores as reported earlier were acceptable.

5.4 Reliability of Study Construct and Validity

Reliability and validity were evaluated for this study. This study using construct reliability (CR) and average variance extracted (AVE) to be tested as a model evaluation diagnostic as well as the discriminant validity and the face validity for the validation component. Validity refers to the accuracy of a measure. Any instrument must measure what it was intended to measure, i.e. the instrument, as the operational definition, must be logically consistent and cover comprehensively all aspects of the abstract concept to be studied.

5.4.1 Construct Reliability (CR) and Average Variance Extracted (AVE)

A previous literature study has suggested the use of "construct reliability" in order to measure the internal consistency reliability in social science research (Wong, 2013; Hair et al., 2012). In addition, CR and AVE were used to assess convergent validity. In order to check the convergent validity, each latent variable's AVE is evaluated. LISREL does not automatically compute composite reliability, so manual calculation of the results was carried out using an Excel spreadsheet. In general, scores greater than 0.50 support a case for convergent validity. According to Fornell and Larcker (1981), if AVE is less than 0.50 the variance due to measurement error is larger than the variance captured by the construct, and the validity of the individual indicators as well as the construct is questionable. The results provide support for the independence of the dimensions (see Table 5.6 for CFA), that is, the AVE for each construct ranged from 0.58 to 0.84, exceeding the acceptable level of 0.50 (Bollen, 1989; Hu and Bentler, 1999). Based on standardised coefficient loadings, t-values, CR estimates and AVE measures, the results indicated acceptable evidence of convergent validity. These satisfactory indexes show that the measurement model has an excellent fit, and that it can be used as the baseline model to investigate further hypotheses testing.

5.4.2 Discriminant validity and Face (content) validity

In order to establish the discriminant validity, it was assessed by comparing the square root of average variance extracted (AVE) with the correlation between constructs (Fornell and Larcker, 1981). They also suggest that the square root of AVE of each latent variable should be greater than the correlations among the latent variables. Table 5.7 was created with the square root of AVE is manually calculated and highlighted in the bold diagonal of the table. In this case, if discriminant validity is high, it provides evidence that a construct is unique and captures some phenomena that other measures do not (Hair et al. 2010).

Table 5.7: Discriminant validity (square root of AVE and compare with correlation)

Latent Variables	Learning Exploration (LEXPLR)	Learning Exploitation (LEXPLT)	Innovation Exploration (IEXPLR)	Innovation Exploitation (IEXPLT)
CFA 1				
Learning Exploration (LEXPLR)	**0.85**			
Learning Exploitation (LEXPLT)	0.70	**0.80**		
Innovation Exploration (IEXPLR)	0.61	0.69	**0.83**	
Innovation Exploitation (IEXPLT)	0.23	0.46	0.50	**0.82**

Test using Fornell and Larcker (1981)

Latent Variables	Organizational Slack (OS)	Financial Slack(FS)	International Diversity (ID)	Past Performance Business (PBP)
CFA 2				
Organizational Slack (OS)	**0.77**			
Financial Slack(FS)	0.48	**0.89**		
International Diversity (ID)	0.28	0.31	**0.76**	
Past Performance Business (PBP)	0.20	0.33	-0.16	**0.92**

Latent Variables	STI	STM	SPI	SPM	EDCS	EDCL	BDCI	BDCC	CBP
CFA 3									
Stage Innovation (STI)	**0.83**								
Stage Marketing (STM)	0.58	**0.88**							
Speed Innovation (SPI)	0.76	0.49	**0.83**						
Speed Marketing (SPM)	0.51	0.84	0.56	**0.85**					
Emerging Dynamic (EDCS)	0.63	0.62	0.60	0.64	**0.89**				
Emerging Dynamic (EDCL)	0.53	0.55	0.50	0.52	0.78	**0.91**			
Branching Dynamic (BDCI)	0.51	0.56	0.50	0.53	0.72	0.79	**0.91**		
Branching Dynamic (BDCC)	0.45	0.45	0.40	0.42	0.60	0.68	0.86	**0.92**	
Current Business Performance (CBP)	0.39	0.30	0.43	0.24	0.29	0.36	0.40	0.40	**0.93**

Test using Fornell and Larcker (1981)

Next, face (content) validity must be established prior to any theoretical testing when using CFA because without an understanding of every item's content or meaning, it is impossible to express and correctly specify a measurement theory. Hair et al. (2010) encourage that face validity is the most important validity test in a very real way. Hence, face validity is considered as very closely related to content validity since it is determined by a review of the items by the experts (Bryman and Bell, 2007) and not through the use of statistical analyses. In this study, the determination of content validity is based on established scales that have already been tested for their validation, and the questionnaire was comprehensively screened by both academicians

and industry practitioners during the pilot test. Useful comments were expressed with respect to face validity, which were considered and used, where appropriate, for incorporation into a revision of the questionnaire. These included aspects of wording and the length of the survey questions.

5.4.3 Common Method Bias/Variance (CMB/CMV)

The final test for validity, and the existence of error components in the measurement scale used in this study, is common method variance (CMV). The measurement errors may threaten the validity of the conclusions for the relationships between measures of different constructs (Podsakoff, MacKenzie, and Podsakoff, 2003). The major source for systematic error is CMV. Moreover, Hughes et al. (2010) stated that CMV is a common problem for studies looking at key informant data. Therefore, in order to minimise the CMV effects this study carefully constructed all the items and placed them within the general topic categories. Not only that, the researcher also used different response formats and scales, as well as followed standard survey design and administration practices. Moreover, the questionnaire clearly assured respondents of the confidentiality of the results of this current study and that there were no right or wrong answers.

There are various ways to assess the possibility of CMV (Hughes et al., 2010). One of the main methods of understanding whether the problem of CMV is material to the data is the use of a marker variable (Lindell and Whitney, 2001). Thus, in this study the researcher sought at least one marker variable, with the aim of establishing that this marker was different from the other variables and to account for the effect of the marker variable in assessing correlation. The question of "how much knowledge do the participants possess in this study?" with the seven-point scale on their degree of knowledge (1 = very limited knowledge, 7 = very substantial knowledge), is taken as the marker variable because the question has no theoretical relationship with the study constructs. The result suggests that none of the original correlations of relevance appeared to differ significantly from the CMV adjusted estimates (c.f. Bollen, 1989; cited in Weerawardena et al., 2015), which again suggests common method bias is not a problem affecting results of the study.

In addition, Podsakoff et al. (2003) suggest giving crucial attention to the actions taken in the survey design (as discussed above) in order to reduce the CMV. Hence, to address this problem the researcher also applied the most common statistical remedy, the Harman 1-factor test (Podsakoff et al., 2003), using CFA on 17 constructs in the research model. This test found no significant bias in the data set because there was no common factor loading on all the measures, and total variance was 32.67 per cent (below 50 per cent). Therefore, CMV was not considered a major concern in this study.

Table 5.8: Harman Single Factor

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	19.588	32.647	32.647	19.588	32.647	32.647
2	5.411	9.018	41.664			
3	4.831	8.052	49.717			
4	3.173	5.289	55.005			
5	2.587	4.312	59.317			
6	2.484	4.140	63.457			
7	2.176	3.627	67.084			
8	1.777	2.962	70.046			
9	1.668	2.779	72.825			
10	1.599	2.665	75.490			
11	1.197	1.995	77.485			
12	1.116	1.861	79.346			
13	.901	1.502	80.848			
14	.845	1.408	82.256			
15	.790	1.317	83.574			
16	.732	1.220	84.793			
17	.643	1.072	85.865			
18	.607	1.011	86.876			
19	.550	.917	87.793			
20	.515	.858	88.651			
21	.467	.778	89.429			
22	.431	.718	90.147			
23	.400	.667	90.813			
24	.388	.646	91.459			
25	.370	.616	92.076			
26	.335	.558	92.633			
27	.313	.521	93.155			
28	.289	.482	93.636			
29	.277	.462	94.098			
30	.269	.448	94.546			
31	.254	.423	94.968			
32	.232	.387	95.355			
33	.226	.377	95.732			
34	.221	.368	96.100			

5.5 Descriptive statistics for constructs

Table 5.9 shows the profile of the mean, median, mode, standard deviation, and minimum and maximum scores of each construct. It can be seen that most of the mean values are relatively close to the scale midpoint of three, and that all standard deviations exceed one, except for IEXPLT, which is 0.98. Furthermore, two of the constructs (LEXPLR and LEXPLT) had a relatively high mean. The minimum score for all construct is 1.00 and the maximum score is 7.00.

Table 5.9: Descriptive Statistics for each constructs

	Mean	Median	Mode	Standard Deviation	Minimum Score	Maximum Score
CFA 1						
Learning Exploration (LEXPLR)	**5.52**	**5.67**	**6.00**	**1.07**	**2.67**	**7.00**
Learning Exploitation (LEXPLT)	**5.45**	**5.50**	**6.00**	**1.03**	**3.00**	**7.00**
Innovation Exploration (IEXPLR)	**5.12**	**5.00**	**6.00**	**1.25**	**1.50**	**7.00**
Innovation Exploitation (IEXPLT)	**4.22**	**4.00**	**4.00**	**0.98**	**1.50**	**7.00**
CFA 2						
Organizational Slack (OS)	**4.91**	**5.00**	**5.00**	**1.18**	**2.00**	**7.00**
Financial Slack(FS)	**4.31**	**4.00**	**4.00**	**1.51**	**1.00**	**7.00**
International Diversity (ID)	**4.28**	**4.33**	**4.00**	**1.44**	**1.00**	**7.00**
Past Performance Business (PBP)	**4.10**	**4.00**	**4.00**	**1.21**	**1.00**	**7.00**
CFA 3						
Stage Innovation (STI)	**4.50**	**4.67**	**4.00**	**1.34**	**1.00**	**7.00**
Stage Marketing (STM)	**5.01**	**5.00**	**6.00**	**1.33**	**1.00**	**7.00**
Speed Innovation (SPI)	**4.18**	**4.33**	**4.00**	**1.36**	**1.00**	**7.00**
Speed Marketing (SPM)	**4.81**	**5.00**	**4.00**	**1.30**	**1.00**	**7.00**
Emerging Dynamic (EDCS)	**4.98**	**5.00**	**5.00**	**1.21**	**1.67**	**7.00**
Emerging Dynamic (EDCL)	**4.67**	**4.50**	**4.00**	**1.21**	**2.00**	**7.00**
Branching Dynamic (BDCI)	**4.96**	**5.00**	**5.00**	**1.18**	**1.67**	**7.00**
Branching Dynamic (BDCC)	**4.98**	**5.00**	**5.00**	**1.10**	**2.00**	**7.00**
Current Business Performance (CBP)	**4.10**	**4.25**	**5.00**	**1.40**	**1.00**	**7.00**
	N= 130					

5.6 Structural Equation Model (SEM): Hypotheses testing and Key Findings

After the assessment of the measurement model, a structural model was evaluated in order to test the hypotheses in the proposed conceptual framework. Two separate SEMs were specified, in order to avoid problems that may arise due to exceeding recommended parameter–observation ratios. The first structural model incorporated the paths for the hypotheses relating to moderating variables (the front half of the model). The second structural model contained the direct relationship for the dependent variable of business performance (the second half of the model).

In this case, the researcher applied the guidelines proposed by Hair et al. (2010) in order to evaluate the model fitness. In particular, this study focuses on chi-square, RMSEA, CFI, IFI and NNFI. Hu and Bentler (1999) and Yu (2002) suggested that for continuous and categorical data outcomes, then RMSEA should be less than 0.06, TLI greater than 0.95, CFI greater than 0.95, standard root mean square residual (SRMR) less than 0.08 and weighted root mean square residual (WRMR) less than 0.90.

The hypothesis testing results for the direct path and moderators are presented in Table 5.10 and the hypothesis testing results for SEM 3 and SEM 4 are presented in Table 5.12.

5.6.1 Model 1: Initial Direct Paths and Moderating Variables (SEM 1 and SEM 2)

There are four hypotheses that represent the direct paths.

H1: Exploratory learning is positively associated with the sensing capability.

H2: Exploratory innovation is positively associated with the learning capability.

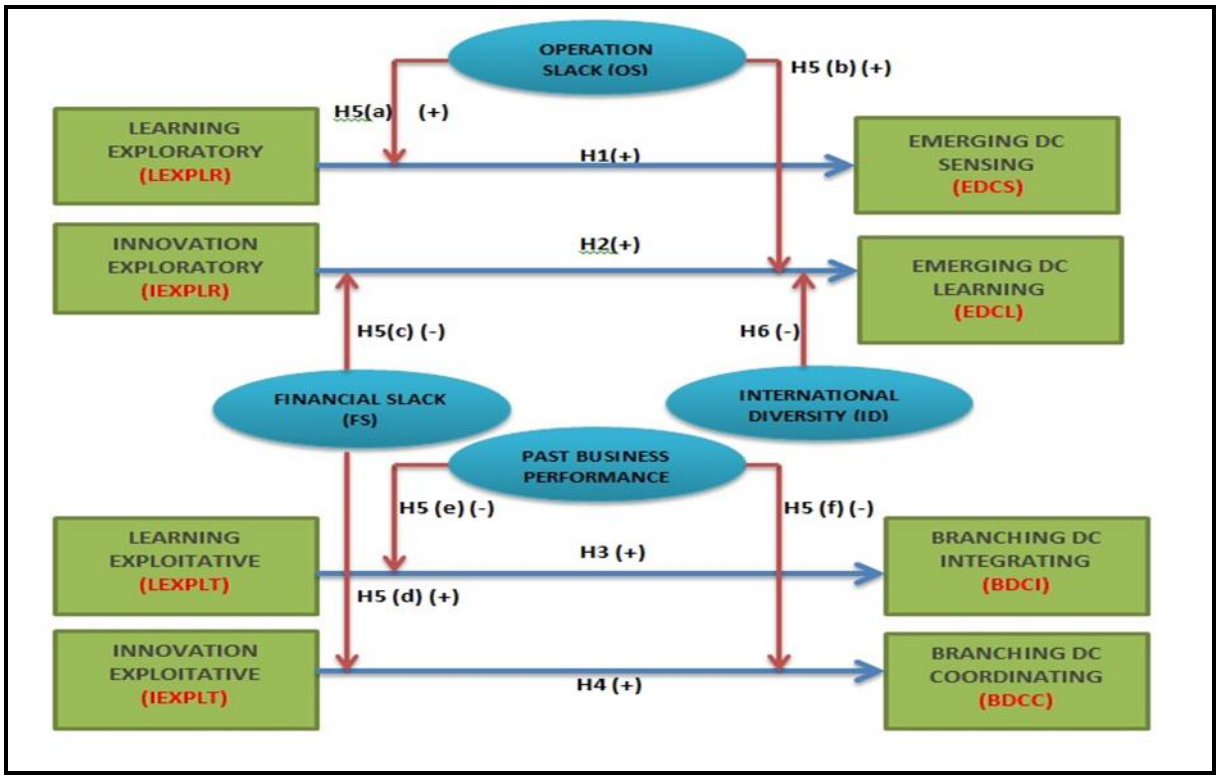
H3: Exploitative learning is positively associated with the integrating capability.

H4: Exploitative innovation is positively associated with the coordinating capability.

In this study, the researcher defines a moderating variable as "a variable that affects the direction and/or strength of the relationship between an independent or predictor variable and a dependent or criterion variable" (Barron and Kenny, 1986, p. 1174; Holmbeck, 1997; James and Brett, 1984). Frazier et al. (2004) mentioned in their article that the identification of important moderators of relations between predictors and outcomes indicates the maturity and sophistication of a field of enquiry (Aguinis, Boik, and Pierce, 2001; Judd, McClelland, and Culhane, 1995) and is at the heart of theory in social science (Cohen et al., 2003).

A moderator effect is an interaction where the effect of one variable depends on the level of another. For instance, in Diagram 5.1 variables OS, FS, past business performance (PBP) and ID were introduced as moderators of the relationship between exploration of learning and innovation, exploitative learning and innovation towards the emerging dynamic capabilities and branching dynamic capabilities.

Diagram 5.1 Model 1: Direct path and moderator variables for OS, FS, PBP and ID



Next, the researcher was interested in testing whether those moderator variables will appear as positive or negative moderators. Firstly, the initial hypotheses that had been developed in a previous chapter have been used as a guideline. There are two main hypotheses (H5 and H6) that are derived from the conceptual model.

H5 (a): Resource slack (operational slack) positively moderates the relationship between learning exploratory and emerging dynamic capability sensing.

H5 (b) Resource slack (operational slack) positively moderates the relationship between innovation exploratory and emerging dynamic capability learning.

H5 (c): Resource slack (financial slack) negatively moderates the relationship between innovation exploratory and emerging dynamic capability learning.

H5 (d): Resource slack (financial slack) positively moderates the relationship between innovation exploitative and branching dynamic capability (coordinating).

H5 (e): Former resource slack (past business performance) negatively moderates the relationship between learning exploitative and branching dynamic capability (integrating).

H5 (f): Former resource slack (past business performance) negatively moderates the relationship between innovation exploitative and branching dynamic capability (coordinating).

H6: International diversity negatively moderates the relationship between innovation exploratory and emerging dynamic capability learning.

From the results, it shows that SEM 1(EDC) has the comparative index (CFI) of 0.956, the RMSEA of 0.070 and IFI of 0.957, which is considered as satisfactory. SEM 2 (BDC) has the comparative index (CFI) of 0.946, the RMSEA of 0.069 and IFI of 0.947, which is also considered as satisfactory. Overall the model fitness of SEM 1 and SEM 2 reported to have a good fit, with RMSEA above the threshold of 0.06 and CFI and IFI above the cut-off value 0.9.

In detail, Table 5.10 shows the results of hypothesis testing. The results for direct path consist of H1, H2, H3 and H4. From the results, both Hl and H2 are supported; learning exploratory has a positive relationship to sensing capability (t=5.33, significant at 1% level) and innovation exploratory also has a positive relationship to learning capability (t =6.23, significant at 1%). Both H3 and H4, which predict that learning exploitative and innovation exploitative are positively related to integrating capability and coordinating capability, respectively, are supported (t =5.35, significant

at 1% level; and t =5.06 , significant at 1% level, respectively). The results for moderating effect are explained by H5a, H5b, H5c, H5d, H5e, H5f and H6. For H5a, OS is posited to positively moderate the relationship between learning exploratory and emerging dynamic capability sensing and H5b positively moderates the relationship between innovation exploratory and emerging dynamic capability learning. From the results, OS has a strong positive moderation effects (by 5%) on the relationship between LEXPLR and EDCS as well as between IEXPLR and EDCL. Thus, H5a and H5b are supported (t =1.88, significant at 5% level; and t =2.08, significant at 5% level, respectively). For H5c and H5d, the researcher posited that FS, it is seen to act differently between the innovation exploration and innovation exploitation activity. The results show that H5c FS negatively moderates the relationship between innovation exploratory and emerging dynamic capability (learning) and for H5d FS is positively moderates the relationship between innovation exploitative and branching dynamic capability (coordinating). However, both results are supported (t = -1.33, significant at 10% level; and t =1.46, significant at 10% level, respectively). Next, the other moderators of H5e, H5f and H6 are also all supported. The result show that, PBP (H5e and H5f) (t = -1.58, significant at 10% level; and t = -2.47, significant at 1% level, respectively) and ID (H6) (t = -1.43, significant at 10% level) report negative moderating effects for the particular path (see Table 5.10).

In summary, the results of Model 1 in this study show that OS is a significant positive moderator between LEXPLR and EDCS as well as between IEXPLR and EDCL. Thus, it reflects the importance of OS to the relevant firms and if this moderator is ignored then it could lead to a slower pace of development of more emerging capabilities in the firm itself. For moderators such as FS and ID, both negatively moderate the relationship between IEXPLR and EDCL. The reason for this is, when firms have more financial availability and are more involved in international activities, both reasons will reduce the development of emerging dynamic capability of learning through their innovation exploratory activity. However, FS gave impact to both forms of innovation activities, regardless of whether they are exploiting or exploring. FS in this study, also acts as a positive moderator but for a different relationship, between IEXPLT and BDCC. The key finding for this is that the greater the financial hold of the firm, the more exploitation activities it is involved in,

specifically in innovation. Similarly, PBP was found to act as a negative moderator towards the relationship between LEXPLT and BDCI, as well as between the IEXPLT and BDCC. Generally, when a firm has a good past performance, they tend to slow down their exploitation activities because firms are aware that they are already in a good condition; thus, do not need to do any exploitation activities.

Table 5.10: Hypothesis Testing Results for Direct Path and Moderation (SEM 1 and SEM 2)

	Hypo-theses	Moderator variable	Path with/without moderator	Model fit	Standard coefficient	T-value
SEM 1 (EDC)	H1	N/A	LEXPLR--→EDCS	Chi-square: 263.87; df:162; RMSEA:0.070; CFI:0.956; IFI: 0.957	0.50	5.33**
	H2	N/A	IEXPLR--→EDCL		0.55	6.23**
	H5(a)	Operational Slack (OS)	LEXPLROS--→EDCS		0.24	1.88*
	H5(b)		IEXPLROS--→EDCL		0.22	2.08*
	H5(c)	Financial Slack (FS)	IEXPLRFS--→EDCL		-0.14	-1.33†
	H6	International Diversity (ID)	IEXPLRID--→EDCL		-0.14	-1.43†
SEM 2 (BDC)	H3	N/A	LEXPLT--→BDCI	Chi-square: 293.93; df:183; RMSEA:0.069; CFI:0.946; IFI: 0.947	0.53	5.35**
	H4	N/A	IEXPLT--→BDCC		0.51	5.06**
	H5(d)	Financial Slack (FS)	IEXPLTFS--→BDCC		0.22	1.46†
	H5(e)	Past business performance (PBP)	LEXPLTPBP--→BDCI		-0.17	-1.58†
	H5(f)		IEXPLTPBP--→BDCC		-0.25	-2.47**

* Significant at 0.05 level (critical *t*-value = 1.645).
** Significant at 0.01 level (critical *t*-value = 2.326).
† Significant at 0.10 level (critical *t*-value = 1.282).
N/A Not available

Table 5.11: Hypothesis Testing Result for SEM 1 and SEM 2

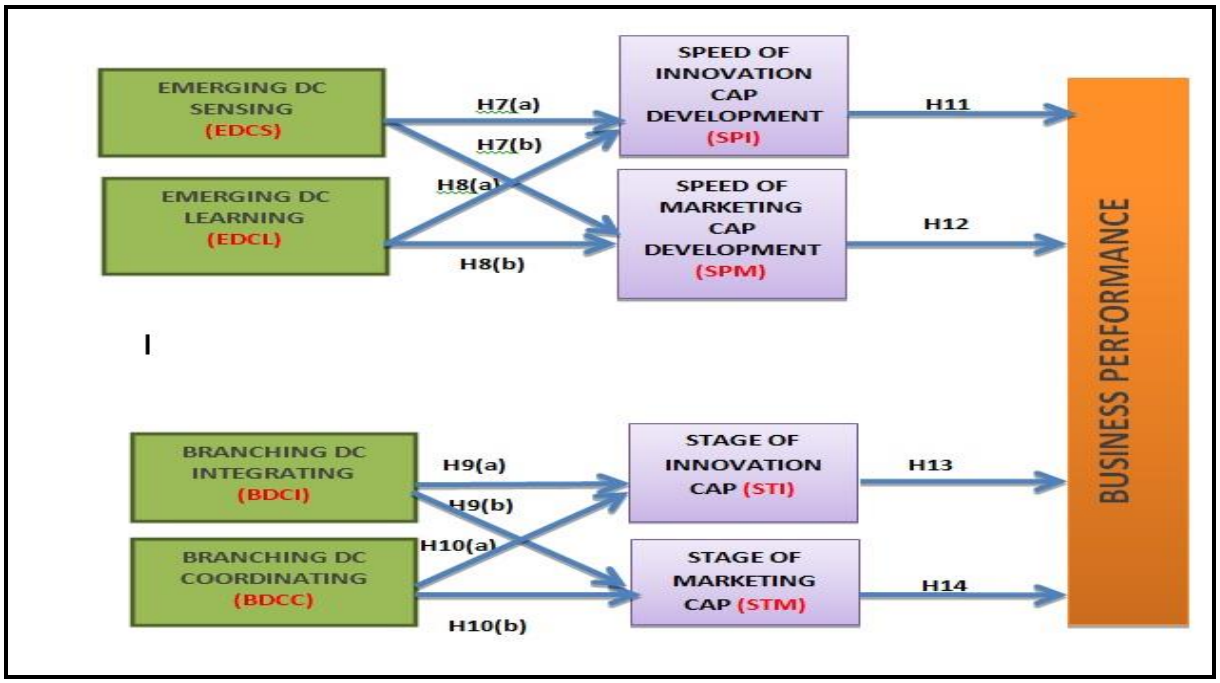
	HYPOTHESIS	REMARKS
H1	Exploratory learning is positively associated with the sensing capability.	**Supported**
H2	Exploratory innovation is positively associated with the learning capability.	**Supported**
H3	Exploitative learning is positively associated with the integrating capability.	**Supported**
H4	Exploitative innovation is positively associated with the coordinating capability.	**Supported**
H5 (a)	Resource slack (operational slack) positively moderates the relationship between learning exploratory and emerging dynamic capability sensing.	**Supported**
H5 (b)	Resource slack (operational slack) positively moderates the relationship between innovation exploratory and emerging dynamic capability learning.	**Supported**
H5 (c)	Resource slack (financial slack) negatively moderates the relationship between innovation exploratory and emerging dynamic capability learning.	**Supported**
H5 (d)	Resource slack (financial slack) positively moderates the relationship between innovation exploitative and branching dynamic capability coordinating.	**Supported**
H5 (e)	Resource slack (past business performance) negatively moderates the relationship between learning exploitative and branching dynamic capability integrating.	**Supported**
H5 (f)	Resource slack (past business performance) negatively moderates the relationship between innovation exploitative and branching dynamic capability coordinating.	**Supported**
H6	International diversity negatively moderates the relationship between innovation exploratory and emerging dynamic capability learning.	**Supported**

Overall, the structural part of the model has been evaluated and the relationships between different endogenous and exogenous latent variables have been identified. All hypotheses have been supported in Model 1. In short, the data obtained has been analysed and supports the proposed model and has providing significant results.

5.6.2 Model 2: Dynamic capabilities, substantive capabilities and business performance (SEM 3 and SEM 4)

There are eight hypotheses derived from these direct paths as shown in Figure 5.1. Four hypotheses were developed from the relationship between emerging dynamic capabilities towards SPI and SPM (substantive capabilities), and branching dynamic capabilities towards STI and STM (substantive capabilities). Another four hypotheses were developed from the relationship between SC and business performance.

Figure 5.1 Direct path: DC, SC and Business Performance



H7: The component of emerging dynamic capability (sensing) positively related to the speed of: H7 (a) Innovation capability development and H7 (b) marketing capability development.

H8: The component of emerging dynamic capability (learning) positively related to the speed of: H8 (a) Innovation capability development and H8 (b) marketing capability development.

In this study, H7a and H7b predict that the component of emerging dynamic capability sensing (EDCS) positively related to the speed of: H7 (a) Innovation capability development (SPI) and H7 (b) marketing capability development (SPM). Result shows that H7 (a) and (b) had a positive path and both hypotheses are supported. For H8a and H8b, this study indicates the component of emerging dynamic capability learning (EDCL) positively related to the speed of: H8 (a) Innovation capability development and H8 (b) marketing capability development. The result shows that both had a positive path. Therefore, both hypotheses are supported.

Next, another two hypotheses that has been tested was as below:

H9: The component of branching dynamic capability (integrating) positively related to the stage of (a) Innovation capability development and (b) marketing capability development.

H10: The component of branching dynamic capability (coordinating) positively related to the stage of (a) Innovation capability development (b) marketing capability development.

For this hypotheses testing, results indicate that both H9a and H9b are positive, thus hypothesis are supported (a= 0.99, a= 1.269 respectively). However for H10a and H10b, both standardised path coefficient are negative (a= -0.562, a= -0.71 respectively), hence both hypothesis are not supported (refer Table 5.12). Firms that engage in BDCI are more conducive to progressing to the stage of innovation capability. However, the researcher theorised that the more employees inside the firms or organisations being coordinated, the more likely they will have less opportunities for changes to routines. Thus, the path showed a negative result between BDCC and both of the STI and STM.

Table 5.12 Result from EDC, BDC onto SPI, SPM, STI and STM

	Hypo-theses	Direct Path	Model fit	Standard coefficient
SEM 3	H7(a)	EDCS--→SPI	Chi-square: 155.38 df: 110 RMSEA: 0.057 CFI: 0.984 IFI: 0.984	0.62
	H7(b)	EDCS--→SPM		0.567
	H8(a)	EDCL--→SPI		0.097
	H8(b)	EDCL--→SPM		0.042
	H9(a)	BDCI--→STI		0.99
	H9(b)	BDCI--→STM		1.269
	H10(a)	BDCC -→STI		(-)0.562
	H10(b)	BDCC-→STM		(-)0.71

In this study, H11 Speed of innovation (SPI) capability development was having a positive relationship towards current business performance. Next, H12 posited that SPM capability development positively related on current business performance (CBP). Unfortunately, H12 shows that none of the paths (SPM to CBP) has a positive relationship. Thus, H12 is not supported. Next, an interesting result was found for H13, Stage of Innovation (STI), has a positive effect on current business performance. Finally, the hypothesis testing for H14, Stage of marketing (STM) capability development onto business performance is not significant, thus hypothesis is not supported. As a conclusion of this section, the results show that both SPI and STI positively affects onto CBP.

Table 5.13: Hypothesis Testing Results for SEM 4: SPI, SPM, STI, STM and Business Performance

	Dependent Variables[a] Current Performance
Control Variables:	
EDCS	(-)0.257(-1.36)
EDCL	(+)0.38(2.57) **
BDCI	(-)0.259(-0.60)
BDCC	(+)0.557(1.51) †
Independent Variables:	
H11:SPI	0.315(2.51) **
H12:SPM	(-)0.053(-0.45)
H13:STI	0.159(1.47) †
H14:STM	0.034(0.27)
Squared Multiple Correlations (Structural Equations) ($R^{2)}$	
SPI	0.426
SPM	0.416
CBP	0.163
STI	0.262
STM	0.434
CBP	0.171
EDCS	0.290
EDCL	0.359
BDCI	0.268
BDCC	0.243

[a] Figures represent standardized path value and associated *t*-value
** Significant at 0.01 level (critical *t*-value = 2.326).
* Significant at 0.05 level (critical *t*-value = 1.645).
† Significant at 0.10 level (critical *t*-value = 1.282).

Table 5.14: Hypothesis Testing Result for SEM 3 and SEM 4

	HYPOTHESIS	REMARKS
H7	The component of emerging dynamic capability (sensing) positively related to the speed of: H7 (a) Innovation capability development and H7 (b) marketing capability development.	**Both are supported**
H8	The component of emerging dynamic capability (learning) positively related to the speed of: H8 (a) Innovation capability development and H8 (b) marketing capability development.	**Both are supported**
H9	The component of branching dynamic capability (integrating) positively related to the stage of (a) Innovation capability development and (b) marketing capability development.	**Both are supported**
H10	The component of branching dynamic capability (coordinating) positively related to the stage of (a) Innovation capability development (b) marketing capability development.	**Both are not supported**
H11	Speed of innovation (SPI) capability development positively related to current business performance.	**Supported**
H12	Speed of marketing (SPM) capability development positively related to current business performance.	**Not supported**
H13	Stage of innovation (STI) capability development positively related to current business performance.	**Supported**
H14	Stage of marketing (STM) capability development positively related to current business performance.	**Not supported**

Table 5.15 Summary of Structural Equation Model Fit Statistics

	Dependent Variable	χ^2	df	χ^2/df	RMSEA	CFI	IFI	NNFI
SEM 1 (EDC with moderator)	NA	263.87	162	1.63	0.070	0.956	0.957	0.937
SEM 2 (BDC with moderator)	NA	293.93	183	1.61	0.069	0.946	0.947	0.926
SEM 3	Current performance	155.38	110	1.41	0.057	0.984	0.984	0.980
SEM 4	Current performance	176.24	110	1.60	0.068	0.979	0.979	0.974

5.7 Summary

In summary, this chapter presents the empirical results of the data. Firstly, the preliminary analysis provides the profile characteristics and statistical descriptive analysis of the sample, exporting SMEs manufacturers. Secondly, the results of the reliability and validity of measures for the sample are detailed. Thirdly, the full SEM process, as the main data analysis, is discussed by the full measurement model prior to the analysis of its structural model. The results from the CFA for the measurement model are presented and the results of the structural model from the hypotheses tests are then detailed. A revised structural equation model, developed to achieve the improved results, is evaluated and discussed at the end. Following this chapter is a comprehensive discussion into these results.

CHAPTER 6 : DISCUSSION AND CONCLUSIONS

6.1 Introduction

This chapter will interpret and discuss the results of the analysis conducted in the previous chapter. It mainly discusses the relationship between this study and the literature presented in Chapter 2. Based on the empirical evidence and the findings from this study, which had been conducted on a Malaysian exporting SMEs sample, this study helps to better understand the whole dynamic capabilities process and development by dividing it into two part. The first half of the model explaining the direct path and moderators and the second half of the model explaining the relationship between DC, SC and business performance. This study also found that the different forms of learning and innovation (i.e. exploratory and exploitative) do have a differential effect on the dynamic capabilities development of the firm, through the moderation variables of resource slacks (i.e. operational slack, financial slack, past business performance and international diversity). Later on this study also captured the relationship between dynamic capabilities (i.e. sensing, learning, coordinating and integrating) and substantive capabilities (i.e. marketing and innovation capabilities). And next between substantive capabilities and current business performance. The chapter is structured in the following way: The first section of the chapter interprets and discusses the results of the hypothesis testing of the initial direct path and moderators' factors. In the second section of the chapter, the researcher discusses the direct effects of the dynamic capability, substantive capabilities and current business performance. Thirdly, research contributions are revealed. Fourthly, limitations of the study are discussed and directions for future research agendas are provided. Finally, a conclusion is drawn from the study.

6.2 Discussion for Direct Paths

This section discusses the first research objective, which was aimed at examining the insight into how exploration and exploitation activities could lead to different forms of dynamic capabilities (DCs). The findings that were associated with four hypotheses of the direct path, and the hypotheses results, are as shown in Table 6.1.

Table 6.1 Hypotheses for Direct Path

	HYPOTHESIS	**FINDINGS**
H1	Exploratory learning is positively associated with the sensing capability.	**Supported**
H2	Exploratory innovation is positively associated with the learning capability.	**Supported**
H3	Exploitative learning is positively associated with the integrating capability.	**Supported**
H4	Exploitative innovation is positively associated with the coordinating capability.	**Supported**

Moreover, existing research demonstrates that learning activity could create innovation, and some other studies usually tested learning and innovation separately. However, this study states that learning in itself is not a sufficient explanatory factor to explain the development of dynamic capabilities. The fact that learning on its own does not explain the relative differences could affect the DC development. Instead, this study has included innovation activity as one of those that are most productive in achieving a robust DC development model. Not only that, this study also segregated learning and innovation into two different forms, exploratory and exploitative, which then informed a more comprehensive explanation of the effect of learning and innovation activities towards the development of DC (sensing capability, learning capability, integrating capability and coordinating capability).

The results of this study show that all the hypotheses (H1, H2, H3, and H4) are supported, even though other studies (e.g. Levinthal and March, 1993) indicated that exploratory activity often led to negativity and uncertainty. However, in this study it is shown that exploratory activities for both learning and innovation are positively associated with the emerging dynamic capabilities. Equally, both exploitation activities of learning and innovation also appear to have a positive relationship towards the branching dynamic capabilities. This finding is similar to that recognised by Özsomer and Gençtürk (2003); Levinthal and March (1993).

These researchers identified that exploitation generates a more positive, proximate relationship. For H1, in detail, this study proved that by having an exploratory learning activity; it would positively affect the capability by sensing a new environment and spotting, interpreting, and pursuing opportunities in the environment (Pavlou and Elsawy, 2011). As cited in Protogerou et al. (2012), the capability to sense and strategically respond to environmental challenges is important in order to allow the firm to reconfigure certain capabilities before they become core rigidities (Teece et al., 1997; Eisenhardt and Martin, 2000). While for H2, exploratory innovation activity also appeared to enhance the ability of revamping existing operational capabilities with new knowledge, by acquiring, assimilating, transforming, and exploiting knowledge. Another reasons is because exploratory innovation requires non routine problem solving and deviation from existing knowledge, and that is why it positively affect the EDCL (revamp new knowledge and so on). In addition, March (1991), stated that learning capability can be considered as a principal means of achieving strategic renewal, that requires firms to explore and learn new methods while at the same time exploiting what they have already learned. Furthermore, learning processes are dynamic and multilevel. In addition, as stated by Reid and Brentani (2012), firms which hold an exploratory innovation activity, required for generating a strong vision on market learning capability – one capable of dealing successfully with a radical new technology. Although insight and innovative ideas may occur to individuals, the individually generated knowledge will eventually be shared within the organisation's context and some of it may become institutionalised as organisation artefacts (Protogerou et al., 2012, p. 619).

For H3, the results from this study support that exploitation learning is having a positive relationship with integrating capability. This result proved that firms which always refine common methods and ideas in solving problems, search for generally proven methods and solution to product development problems as well as using information acquisition methods will have a positive effect towards their firm's dynamic capability of integrating; integrating here, is in a sense of the firm's ability to embed new knowledge into operational capabilities with collective sense-making (Pavlou and Elsawy, 2011). This is because; Teece (2007) agreed that the foundation of DCs is through the integration of knowledge.

For H4, exploitation innovation activity demonstrated to has a positive relationship with dynamic capability of coordinating. This is because when firms frequently refine the provision of existing activities, regularly implement small adaptations and changes, thus it will motivates the capability to facilitate the reconfiguration of operational capabilities (Pavlou and Elsawy, 2011). Furthermore, exploitation innovation is limited in scope and newness, and generates less uncertainty about requisites for organizational units (Gopalakrishnan and Damanpour, 1994), thus that is why it positively affect the BDCC. (coordinate group). This is supported by Teece (2007), where he claimed that both "*innovation and reconfiguration may necessitate cospecialised assets being combined by management in order for innovation to occur*" (p. 1338). That is better for the firm to only focus on particular activity in order to achieve a coordinating capability in their firm.

6.3 Discussion for Moderators

This section discusses the second research objective, which is to identify the set of moderating key factors that affects the relationship between exploration and exploitation, and formation of DCs. The findings that were associated with seven hypotheses within the setting of moderators, and the hypotheses results, are as shown in Table 6.2.

Table 6.2 Hypotheses for Moderators

	HYPOTHESIS	**FINDINGS**
H5a	Resource slack (operational slack) positively moderates the relationship between exploratory learning and emerging dynamic capability sensing.	**Supported**
H5b	Resource slack (operational slack) positively moderates the relationship between exploratory innovation and emerging dynamic capability learning.	**Supported**
H5c	Resource slack (financial slack) negatively moderates the relationship between exploratory innovation and emerging dynamic capability learning.	**Supported**
H5d	Resource slack (financial slack) positively moderates the relationship between exploitative innovation and branching dynamic capability coordinating.	**Supported**
H5e	Resource slack (past business performance) negatively moderates the relationship between exploitative learning and branching dynamic capability integrating.	**Supported**
H5f	Resource slack (past business performance) negatively moderates the relationship between exploitative innovation and branching dynamic capability coordinating.	**Supported**
H6	International diversity negatively moderates the relationship between exploratory innovation and	**Supported**

	emerging dynamic capability learning.	

The findings of this study clearly reveal that the relationship between learning and innovation activities and the dynamic capabilities development could be improved or weakened through three types of resource slack (operational slack (OS), financial slack (FS) and past business performance (PBP)) and international diversity. This is explained by the results from this study, which shows that all the hypotheses (H5a, H5b, H5c, H5d, H5e, H5f and H6) are supported. The findings of this current study reported that the models of fitness of SEM 1 and SEM 2, consisting of initial direct paths and moderating variables, were considered as good in both cases, with RMSEA above the threshold of 0.06 and CFI, IFI above the cut off value 0.9. The results show that OS has a strong positive moderation effect (of 5%) between LEXPLR and EDC Sensing (EDCS) (Hypothesis H5a) as well as between the IEXPLR and EDCL (Hypothesis H5b). Thus, it reflects the importance of OS to the relevant firms and if this particular moderator is ignored within the firm, then it could lead to a slower pace of developing more emerging capability in the firm itself. Additionally, by having an operational slack (human resource, time and firm capacity) it could strengthen the relationship between a firm's exploratory learning activity and the firm's ability to sense a new environment. This is because firms with enough available human resources, time available for development activities among members, as well as enough capacity, will significantly enhance the ability to sense a new market and new customer for the firm. Not only that, good operational slack also helps the firm's exploratory innovation activity to improve their ability to revamp existing operational capabilities with new knowledge. Both hypotheses H5a and H5b supported the findings from previous researchers, such as Dolmans et al. (2014). They stated that when a firm has an excess of operational slack, then that firm has the capacity to induce the exploration activities. In some cases, resource slack could also encourage innovative activities (Dolmans et al., 2014).

For hypotheses H5c and H6, and moderators such as FS and ID, the results stated that both negatively moderate the relationship between IEXPLR and EDCL. One possible explanation for this result could be that when firms have more financial availability and include more international activities, both factors will reduce the development of emerging dynamic capability of learning through their exploratory innovation activity. Although resource slack is important because it "*provides resources for creative and innovative experimentation*" (Bourgeois, 1981, p.35), however, when the firm has more FS, for instance, it will weaken

the relationship between the exploratory innovation and the development of emerging dynamic capability. This is because a firm does not need more financial resources when they already have exploration of innovation activity inside the firm. In addition, firm size can also be a limitation when it comes to radical innovation (McDade, et al., 2002). Usually, larger firms will benefit more from the FS, especially when those particular firms are involved with exploratory innovation activity/radical innovation (Bower, 1970; Reid and Brentani, 2012). This is supported by Hitt et al. (2011), when they stated that for large firm having resource slack, "*they are able to explore opportunities outside their traditional domain and leverage existing business practices in doing so*" (p.61). In this study, small-to-medium sized firms may have fewer benefits from the FS, especially when the firms are having an exploratory innovation activity going on. This is the reason why FS negatively moderates the relationship between exploratory innovation and dynamic capability of learning. In addition, in small-to-medium firm, having FS or having excess available cash or other financial means does not help to positively moderate the exploration innovation activity. This is because, rather than spending the excess financial on revamping new knowledge and so on, it is better for SMEs to focus on their exploitation activity (innovation). And that is why, the results of this study confirm that FS positively moderates the innovation exploitation activity towards firm's coordinating capability and on the other hand FS negatively moderates the relationship between innovation exploration and emerging dynamic learning capability.

In contrast, FS in hypothesis H5d plays an important role when the firm is conducting an exploitation innovation activity. In the current study, it is shown that FS positively enhances the relationship between exploitation innovation (IEXPLT) and the development of branching dynamic capability coordination (BDCC). This is because, in order to support more exploitation activity a firm needs more unabsorbed slack, such as financial slack to ensure the group project is well coordinated.

A similar scenario applies to hypotheses H5e and H5f. Past business performance (PBP) was found to act as a negative moderator towards the relationship between LEXPLT and branching dynamic capability integration (BDCI), as well as between the IEXPLT and BDCC. From the previous arguments, the researcher hypothesised that past performance negatively moderates the relationship between exploitative activities and branching dynamic capabilities. This is because the focus is not on understanding the effects of past performance on the branching capabilities of the firm, but rather on understanding how past performance affects the trade-off between the two exploitation activities (learning and innovation) when

leading to branching capabilities. The researcher acknowledges that firms with good past performance will not favour either integrating or coordinating their dynamic capabilities, and, therefore, when the firm had a good past performance they tend to slow down their exploitation activities. Firms tend to feel that they are already in a good condition, and do not need to pursue any exploitation activities. The results of the present study are consistent with the finding of Hortinha et al. (2011), when they state that only firms with poor past performance favour exploitative activities rather than explorative activities.

Overall, even though FS is captured to give two different impacts on exploration and exploitation activities, it is not the key issue of this study. The reason for this is because FS acts differently towards exploration and exploitation, as stated above. In this study, OS appears to give a positive impact as a moderator to the relationship rather than FS, ID and PBP. In summary, by adding this moderating effect inside the direct path relationship, it then contributes and sheds new light on the discussion of how firms could expand their learning and innovation activities in order to develop more improved dynamic capability.

6.4 Discussion for DC, SC and CBP

This section discusses the third research objective and interprets the findings regarding the direct effects of the DC onto SC and SC onto CBP. The discussions and interpretation of this section relate to eight main hypothesis interests. The results are listed in Table 6.3.

Table 6.3 Hypotheses for DC, SC and CBP

	HYPOTHESIS	**FINDINGS**
H7	The component of emerging dynamic capability (sensing) positively related to the speed of: H7 (a) Innovation capability development and H7 (b) marketing capability development.	**Both are supported**
H8	The component of emerging dynamic capability (learning) positively related to the speed of: H8 (a) Innovation capability development and H8 (b) marketing capability development.	**Both are supported**
H9	The component of branching dynamic capability (integrating) positively related to the stage of (a) Innovation capability development and (b) marketing capability development.	**Both are supported**
H10	The component of branching dynamic capability (coordinating) positively related to the stage of (a) Innovation capability development (b) marketing	**Both are not supported**

	capability development.	
H11	Speed of innovation (SPI) capability development positively related to current business performance.	**Supported**
H12	Speed of marketing (SPM) capability development positively related to current business performance.	**Not supported**
H13	Stage of innovation (STI) capability development positively related to current business performance.	**Supported**
H14	Stage of marketing (STM) capability development positively related to current business performance.	**Not supported**

Next, since the existence of the resource-based view (RBV), further developments of the theory have appeared in order to cope with its original weaknesses. Helfat et al. (2007) point out that a direct association between dynamic capabilities and firm performance is tautological, in the same way that it is for the resource-based view (Bromiley and Fleming, 2002; Easterby-Smith et al., 2009). This is the reason why the researcher is looking at the direct effects of substantive capabilities towards performance. These important findings lend support to, as well as build upon, extant studies which denote that the dynamic capability through substantive capability can realise the business performance (Ali et al., 2010). However, this study is using a more refined version compared to the previous research (e.g. Ali et al., 2010). This is because previous research only suggests substantive capability as the factor that could affect performance, and the researchers do not detail further what the component inside that substantive capability would involve. Therefore, this study makes its novel contribution by detailing the speed and the stage of the marketing and innovation as direct factors that could enhance business performance. Marketing and innovation capabilities contribute to the explanation of this phenomenon according to Wilden and Gudergan (2015), because the use of sensing processes could improve a firm's marketing capabilities as well as the ability to detect technological (innovation) advances earlier. It is also clearly shown that the role of DC is to improve the substantive capability or to build new one(s), because substantive capabilities that the firms have, such as marketing capabilities, innovation capabilities or human resource capabilities, will eventually become eroded (Teece, 2014).

Different forms of dynamic capabilities have different effects on the speed and stages of innovation capabilities and marketing capabilities. Ideally, dynamic capabilities are used to improve the speed of the development and to improve the stage of development. The effects of DCs on SCs are proved when H7a, H7b, H8a, H8b, H9a and H9b are supported. Thus, it is proved that emerging capabilities (sensing and learning) developed faster through the speed of the substantive capabilities (innovation and marketing), while the branching capabilities (integrating and coordinating) allowed more complex stages of capability development of innovation and marketing, in order to achieve the business performance. From this current study, the results suggest that through Malaysian exporting SMEs, firms enhance their sensing dynamic capability and their integrating dynamic capability through the existence of speed and stages of innovation as direct factors. More specifically, results demonstrate that H7a and H7b, H8a and H8b, and H9a and H9b, all had a positive path, therefore these hypotheses are supported. For hypothesis H7a, sensing new opportunities is very much a scanning, creation, learning, and interpretive activity and, according to Teece (2007), an investment in research and related activities, for instance with the help of the Speed of Innovation (SPI) capability, which is usually a necessary complement to this activity. Thus, the study proved that SPI is an appropriate direct factor that is used to enhance the relationship between EDCS and business performance. In addition, EDCS also appears to be significant towards the SPM (H7b). However, no direct effect of SPM appeared to be significant between EDCS and business performance. This is because the emerging dynamic capability of sensing (H7b) and learning (H8b) do not need the fast development of marketing capability in order to enhance the performance. However, firms may need only a normal pace of marketing development. Instead, SME firms in Malaysia need more involvement of innovation capability in order to enhance their business performance. For hypotheses H8a and H8b, EDCL is proved to have a positive path towards the SPI and SPM, respectively. This is because, as argued by Teece et al. (1997), learning is a very important process and it is dynamic, and that is why the learning dynamic capability is significant in terms of pace of innovation and marketing capabilities.

For hypothesis H11, that particular path from SPI to current business performance had a positive relationship. Specifically, the results suggest that in order for EDCS to work, it needs a direct factor in the form of SPI, and so the tautology argument is disproved. It is because EDCS affects the emergence of the new substantive capability (which is SPI) that will then enhance the business performance relationship. This result complements and integrates prior research by considering that "DC is characterised by persistent long-term patterns of firm behaviours that facilitate adaption (Zollo and Winter, 2002), yet they do not directly impact firm performance. Instead, their effects are directed by the more tangible capabilities whose (re)configuration they influence" (Gnizy et al., 2014, p. 479). Similarly, Protogerou et al. (2012) stated that dynamic capabilities influence operational capabilities, which have significant effects on performance. A dynamic capability is considered as "the tools that allow firms to continually build and renovate operational capabilities faster and cheaper than competitors" (Protogerou et al., 2012, p. 622). This is because the role of dynamic capability is to improve substantive capability (Eisenhardt and Martin, 2000). In this study, by having the ability to sense a new environment, firms do not need much help from the speed or marketing capability; however, firms may need a slower pace of marketing capability. In fact, firms need more innovation capability development as a medium to enhance their business performance. This is due to the firms having a good dynamic capability of sensing processes going on, which is the ability of sensing a new environment, such as the ability to spot, interpret, and pursue opportunities in the environment. Thus, EDCS, through their firm's substantive capability (i.e. Speed of Innovation) in terms of their manufacturing skills, product development skills and their research and development skills, could in turn enhance their business performance.

Surprisingly, for the other hypotheses paths, H12 and H14, they appear as not significant in the relationship between SPM and current business performance and between STM and current business performance. Hypothesis H12 shows that none of the paths (through SPM to business performance) are having a positive relationship. The interpretation of the result for EDCL in this study could consist of exportation of SMEs firms having little emerging dynamic capability of learning processes. The learning process here is referring to processes that promote, enhance, and renew technological knowledge, especially in high-technology industries (Helfat, 1997; Protogerou et al., 2012). In this study, it neither influences the Speed of Innovation capability (SPI) nor the marketing capability (SPM), and in turn this SPI and SPM do not direct the relationship between EDCL and business performance.

Even though hypothesis H12 appeared as not significant to the relationship, this does not mean that EDCL does not rely on the SPM capability development. In fact, EDCL might only contribute to a slow pace of speed of marketing capability development. Although other studies (e.g. Morgan et al., 2009) stated that marketing capability does affect the DC-performance relationship, in this study it could not be applied.

For the next hypothesis testing, a similar story was found for H13, Stage of Innovation (STI), where it was discovered to be positive towards Current Business Performance (CBP). The results of the present study are consistent with the findings of Hooley et al. (2005). Their empirical findings strongly support the relationship between integration of management capabilities and teamwork and innovation enhancement (cited in Merrilees et al., 2011). The same applies to this current study, where the researcher theorises that integration and level of innovation capability are interrelated. When the firms have integrating activities going on within, having the innovation capability as a direct factor could enhance their current business performance.

Hypothesis H14 path showed a negative result between STM and CBP. To statistically support this statement, once again the direct path from BDCC to CBP has shown a positive effect, hence, it is proved that BDCC does not rely on any additional mechanism in order to affect the performance. The researcher theorises that the more people there are within a firm or organisation being coordinated, the more likely it is to lead to fewer opportunities for routines to change.

In summary, the results show that only SPI and STI are positively related to CBP. For BDCI, it develops more complex innovation capabilities compared to marketing capabilities, whereas BDC coordinating only develops basic innovation and marketing capabilities. Danneels (2002) and Day (1994) stated that marketing and technological (innovation) capabilities are two of the most important substantive capabilities. However, in this study, only innovation capabilities play an important role, while marketing capabilities only have basic development through that particular relationship.

6.5 Research contributions

This study contributes to the gap in dynamic capability conversation with empirical data, from exporting SMEs in respect to capabilities creation and development that will offer successful approaches to understanding the dynamics of a firm's growth. In addition, the RBV suggests that capabilities are a source of unique and sustainable competitive advantages to the firm, because they transform resources into products or services superior to those of competitors (Amit and Schoemaker, 1993; Barney, 1991; Grant, 1991; Makadok, 2001). This study indicates that activities such as acquiring, absorbing, coordinating, and integrating resources from external and partner organisations can enhance capabilities (Ethiraj, Kale, Krishnan, and Singh, 2005; Priem and Butler, 2001; Sirmon, Hitt, and Ireland, 2007; Teece, Pisano, and Shuen, 1997).

However, regarding the documented relationship between resources and business performance, little is actually known about how entrepreneurial firms can capitalise on those resources that relate to distinctive capabilities to achieve superior business performance. A mass of information is being used to try and make sense of the use of adaptive and absorptive capabilities on an on-going basis. Hence, the researcher has contributed to the conversation between dynamic capability and substantive capability. The resulting theoretical model, which is an extension of the work of the models of Helfat and Peteraf (2003), Branzei and Verstinsky (2006) and Ali et al. (2010), could assist policy-makers in improving existing support programmes for business strategy and enhance business performance.

In addition, there remains an abundance of unexplored opportunities to draw on entrepreneurship literature in order to build upon exporting SMEs. Two such opportunities include looking beyond SMEs that operate internationally, to also considering SMEs that rely on international combinations, and identifying the impact that international SMEs creation, as a form of entrepreneurship, has on markets and economic development. Therefore, this study provides related information regarding the business environment phenomenon that helps the exporting SMEs to improve their business success. Generally, SMEs that operate internationally become more competitive, and executives will need to ensure that their organisations develop, produce, sell, market, and distribute goods to customers as effectively and efficiently as possible. Therefore, similar conditions for exporting SMEs both in developing and emerging countries could use this information to focus on implementing top

global processes in their organisations, by adapting them locally as needed and linking them globally.

Moreover, the study examines how exporting SMEs should utilise the strength of their firms' resources and develop their dynamic capabilities, in an attempt to maximise their business performance. This study had separated explorative and exploitative learning and innovations in order to understand the complexity of their implications on dynamic capabilities formation and business performance. Zahra, Sapienza and Davidson (2006) reported that prior researchers have not given much attention to the process by which these capabilities develop, emerge or evolve, especially in small or younger firms that have limited resources, knowledge bases and expertise in building and integrating diverse capabilities.

Another contribution is to RBV perspectives. Hypotheses H7, H8, H9, H11 and H13 in this study were facilitated to overcome the tautology argument in RBV (Priem and Butler, 2001b; Pavlou and Sawy, 2011), the dynamic capabilities (Williamson, 1999; Wilden et al., 2013) and performance relationship. This study also provides empirical evidence of the link between dynamic and substantive capabilities using a sample of 130 exporting SMEs firms in the manufacturing industry in Malaysia. In doing so, this study helps to overcome the lack of empirical grounding of the dynamic capabilities field as stated by Wilden and Gudergan (2015), Pavlou and Elsawy (2011), Priem and Butler (2001) and Williamson (1999). Moreover, this study has made a substantial contribution to this area via the application of RBV theory. Learning and innovation activities are treated accordingly to the RBV perspective as the source of competitive advantage of SMEs firms.

6.6 Managerial Implication

A number of managerial implications are derived from this study. Specific insight can be gained from the study for managers or practitioners, with the research illustrating the significant role that different types of learning and innovation activities could perform in other types of dynamic capabilities (e.g. emerging and branching). Given the turbulent conditions of the current environment, managers should understand that more efforts should be made in order to catch up with competitors and compete in more equal terms. Managers must be aware of the changing environment where traditional ways of working are no longer valid and acquire new ways of thinking to play according to the new competition rules. SMEs, known for their concern about daily problems, should be aware of the dynamics of the marketplace and believe that the key for their survival might be the development of internal and external capabilities. Therefore, practitioners must not be afraid of change and must understand its benefits.

Parkhe (1991) mentions that the fastest learner can gain the competitive advantage, and this is particularly true for the small-to-medium firms. This is because they are relatively small and lack other resources. Fast learning will give them an advantage (Man et al., 2007). However, managers should not concentrate only on one type of organizational activity such as learning, but should also focus on innovation activities in order to developing better dynamic capabilities. At the same time, managers should realise the critical importance of interacting with moderating factors that have been identified in this study. The moderating factors such as resource slacks and international diversity are identified to give a positive moderation effect as well as a negative moderation effect on that particular relationship. One of the examples is the positive moderating effect of operation slack on the relationship of exploratory learning and dynamic capability of sensing. Thus, it is suggested that practitioners or managers place more importance on managing that particular resource slack in order to make sure that there is a strong relationship between learning, innovation and dynamic capabilities.

This study also points to the importance of emerging and branching capabilities in order to enhance the business performance. This study also demonstrates to managers that resources alone cannot ensure business success. The business is supposed to develop their emerging and branching capabilities, for instance, through their sensing, learning, integrating or coordinating their dynamic capabilities. This means that firms must be aware of how to mobilise and deploy knowledge-based resources in combination with their other resources

and capabilities. The same idea can be applied to any firm's decision-makers. The decision-makers are advised to focus on their exploratory and exploitation activities in order to enhance their sensing and ability to revamp new knowledge, as well as their ability to integrate knowledge and coordinate their group for efficiency.

Furthermore, this study could assist the manager or top management in order to give more focus on innovation capabilities. This is because studies have shown that the impact of the emerging dynamic capability of sensing and the branching dynamic capability of integrating components are influenced by their speed and stages of innovation capabilities. Thus, devoting resources to developing and utilising sensing and integrating capabilities does not directly lead to business performance. However, they both need the presence of innovation capabilities compared to marketing capabilities. Furthermore, the other two components of the emerging dynamic capability of learning and branching dynamic capability of coordinating had basic development. Thus, marketing and innovation capabilities are primary drivers of a firm's performance and thus should be central interest to managers.

6.7 Limitations and Future Research Agenda

This research has achieved its overall research objectives. However, several limitations should be considered when interpreting the finding of the study. Some limitations may provide opportunities for future research. One of the limitations to this study is the research design, a cross-sectional analysis which normally prevents causal inferences. In addition, the cross-sectional analysis does not allow the researcher to observe the short- and long-term impact of dynamic capabilities and substantive capabilities. The study's survey responses generated data from a single moment in time, and hence constitute a lack of richness and prohibit exploration of relationships over time. In spite of having considered performance over the past three years in order to counterbalance good or bad years attributable to unusual circumstances (Miller, 1991), however, a longitudinal study approach or mix data collection method would appear to be more desirable for measuring both patterns of dynamic capabilities development and business performance that may change over time. This will be more insightful in order to understand more fully the link between dynamic and substantive capabilities.

Moreover, this study is reliant on a single key informant, introducing the possibility that common method bias may influence the results. Although, according to Fahy (2002), the CEO is the best person in an organisation to assess the strategic factors affecting firm performance and thus, was chosen as a targeted informant, however, future research could benefit from multiple respondents within organisations, since the present research has taken firms as a unit of analysis, and not persons. Furthermore, undertaking more than one single key informant may improve the understanding of the different parts of an activity system and how they shape each other and, in promoting dynamic capability development within SMEs given their central role. The next limitation is that this study only uses pre-existing scales rather than building new one. One of the reasons is that the questions have already been extensively tested at the time of their first use, and thus the researcher could be confident that they are good indicators of their concepts of interest. The second reason is due to cost/money - as no question developers are needed - and time – as questions, coding categories and accompanying show cards do not need to be developed and tested.

The next limitation in this study regards the construct for business performance by dropping the measures for growth when testing the CFA. This is because EFA suggested that all of the performance items, including growth, be loaded into one construct and that is why the researcher did not consider other items. Furthermore, when it comes to CFA, this study lost three items of growth due to model fitness as well as factor loading. Thus, if the researcher included other items that were not suggested by EFA and CFA, then it may introduce some multicollinearity.

The limitations of this study create opportunities for future research. Future models of this dynamic capabilities process should also consider additional moderators in the first end of the relationships. There could be many other potential moderating factors that could provide a likely fruitful avenue for future research, as this study only focused on international diversity as one of the organisational factors. Other factors, such as technology diversification or product diversification**,** could also be considered.

In addition, since this study is based on one country, future research could also focus on other emerging countries, which have a rapid growth and experience international business success. Moreover, the current study is restricted to small/medium enterprises and manufacturing firms, and does not look at larger firms or service firms. Thus, future research could investigate whether large firms or services firms use similar business strategy behaviour. This

is because, according to Galbreath and Galvin (2008), in service firms, resources, intangible assets and capabilities are also considered important for explaining performance variation. Moreover, it is also worth looking at born global firms. Initially, this study began with the intention to study born global firms, however after having examined and reviewed the literature and shaped the models, the researcher then realized that it is extremely difficult to apply it to an operationalisation of the Malaysian database and that is why the researcher decided to focus on exporting SMEs, instead of comparing born global and SMEs.

The next suggestion is to look at the network perspective and the importance of exporting SMEs. This is because small and young firms also need networks in order to overcome *"perceived barriers on cultural and regulatory issues, plus other matters deemed important to specific management teams"* (Crick, 2009, p. 466). The literature on strategic networks suggests that firms can draw on relationships to gain access to a pool of resources that would otherwise be difficult to obtain. For instance, firms could acquire resources, such as know-how, financial resources, skilled employees, or product-services, by informal cooperation (social networks) (Hughes et al., 2007). According to Hughes et al. (2007), this kind of resource attraction is normally lower in cost, because firms will reduce the time investment to build the basic social capital. Similarly, findings from Weerawardena et al. (2015) suggest that firms should actively engage in building networks with potential sources for technology acquisition purposes, which is suggested as a way for small firms to access much-needed technological knowledge. Fundamentally, network theories of internationalisation are rooted in learning theories. According to Johanson and Vahlne (1977), in their Uppsala model, companies require networks to facilitate their experiential learning. The similarity between the Uppsala model and the network model relates to the effects of learning and knowledge, whereas companies gradually internationalise further as they learn more about markets. Later on, Johanson and Vahlne (2009) further developed a view of business networks of the environment faced by an internationalising firm, where in order to cope with the uncertainty of their surroundings, firms must learn. The business network view stated that "*exchange within a network allows a firm to acquire knowledge about its relationship partners, including their resources, needs, capabilities, strategies, and other relationships*" (Johanson and Vahlne, 2009, p. 1414). Last, but not least, this study used the subjective measure for the business performance. Further studies would encourage researchers to look at the objective performance of a firm, especially the financial data that may enrich the findings.

6.8 Conclusion

In order to strengthen the RBV and DC, there is still a great need to support the theoretical underpinnings of the RBV concepts and premises (Priem and Butler, 2001; Kraaijenbrink et al., 2010). The need to support the underpinnings of the concepts through empirical research is important to the continued development and usefulness of the RBV in strategic management.

The summary implication of the first half of the model is that different forms of slack resources exert different and sometimes conflicting influences on exploration and exploitation activities. These effects are evident through main effects and interactions with dynamic capabilities development; which is the initial direct path of the model is the relationship between different form of learning, innovation and business performance. As a result, this study had excellently answered the first and second research objectives. Next, second half of the model of this study had challenged the tautology between DC and business performance relationship. Thus, this study also had answered the third research objective; to unpack the black box between DC and performance and eventually proposed the structural model of dynamic capabilities and business performance. Consequently, exporting SMEs firms are especially challenged to revise their routines or capabilities (March, 1991) and managers are not meant to create 'once and for all' solutions to their operations, but should continually revise the capabilities that they have developed (Zahra et al., 2006).

This current study also suggests several directions for future research. These suggestions are only few examples out of many more future research paths that could be taken in the development of the RBV in the field of strategic management.

Overall, the results of this study provide a strong theoretical and empirical foundation for understanding the processes and development of dynamic capabilities on the exporting Malaysian SMEs manufacturer, under the RBV perspective. It is hoped that the theoretical and empirical results presented here provide a useful starting point for embarking on future research directions, such the ones described above. Therefore, the present study is a valuable foundation of debate for both academics and practitioners.

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APPENDIX A: SURVEY

COVER LETTER FOR SURVEY

Durham University
Business School

BETTER BUSINESS THINKING

Dear CEO/Managing Director/Owner/Export Manager,

I am coordinating an important study of international Small to Medium Enterprises in Malaysia (SMEs). With this study, I aim to understand how SMEs firms create new and improved their business activities. The findings from this study will help to address the lacks of current research, industry reports and potentially public policy.

Please be assured that the information you provide is **strictly confidential** and it is intended for academic research only. The findings of this study will be reported in my doctoral thesis which will be submitted to the University of Durham, U.K., as required for the degree of Doctor of Philosophy. This research is fully funded by **Ministry of Higher Education in Malaysia (MOHE).** Your cooperation and response is extremely valuable to this investigative research and I strongly encourage you to participate. The questionnaire should only take about **15 minutes** to complete.

Only small samples of firms have been asked to help in this study and as an incentive to those who respond, I should like to offer the opportunity to receive a **lucky draw prize** voucher from **Jaya Jusco** (available from RM150.RM100 and RM50) in addition to a copy of the study findings, which is available upon request.

If you have any further questions on any aspect of this study, please send an email to **afifah.ramlee@gmail.com** / **a.a.ramlee@durham.ac.uk**.

I greatly appreciate your involvement in this study.

Yours faithfully,

AFIFAH ALWANI RAMLEE
Doctoral Researcher
Durham University Business School, Mill Hill Lane, Durham, DH1 3LB
United Kingdom

www.durham.ac.uk/business

Pre-notification Letter

Dear CEO/Managing Director,

I am coordinating an important study of international Small to Medium Enterprises in Malaysia. With this study, I aim to understand how SMEs firms create new and improved their business activities. The findings from this study will help to address the lacks of current research, industry reports and potentially public policy.

Your firm is one of a small number that will shortly be asked to provide information on a range of learning and innovation activities towards the business performance. Your firm has been selected in my small sample of firms. Your response to the short survey is voluntary but I urge you to complete it when you receive it. Your cooperation is central to the success of the study and is very helpful.

You have been chosen to answer this questionnaire because your position in the company qualifies you to provide the most reliable views. You will shortly receive the link to this questionnaire and completing it should take not more than 15 minutes. Your completed questionnaire and your responses are vital to the accuracy of this study.

All information will be treated with strict confidentiality and only be seen by the two academic researchers involved in this study. No information relating to any individual firm will ever be released to anyone under any circumstances. Questionnaire information will only be used in an anonymous form in combination with all other responses to form the results.

As a token of appreciation for those who participate in the study, I would like to offer a copy of the study results soon after I have completed the analysis.

Thank you in advance for your cooperation in this important study.

Yours faithfully,

AFIFAH ALWANI RAMLEE

First Reminder Letter

A short time ago a questionnaire seeking information relating to International activities of Small Medium Enterprises(SMEs) was mailed to you.

If you have already completed and returned it to me, please accept my sincere thanks. If not, could you please try and do so today. **Please be aware that your responses are vital to the accuracy of the research findings**. The findings will only be used for academic research purposes and the research is fully funded by **Ministry of Higher Education in Malaysia (MOHE).**

Your response is extremely valuable to this investigative research and I strongly encourage you to participate. The questionnaire should only take about **15 minutes** to complete and all responses will be treated with **absolute confidentiality.**

Only small samples of firms have been asked to help in this study and as an incentive to those who respond, I should like to offer the opportunity to receive a lucky draw prize voucher from Jaya Jusco (available from RM150,RM100 and RM50) in addition to a copy of the study findings.

I greatly appreciate your involvement in this study.

Yours faithfully,

AFIFAH ALWANI RAMLEE
Doctoral Researcher
Durham University Business School, Mill Hill Lane, Durham, DH1 3LB
United Kingdom

www.durham.ac.uk/business

QUESTIONNAIRE

A study of International Small to Medium Enterprise (SMEs) in Malaysia.

A Study of Learning and Innovation Activities, Capabilities Development and the Business Performance

Section A: About your Business

Q1: How many full time employees presently work in your business?

☐ 5 or less ☐ 6-20 ☐ 21-50 ☐ 51-100 ☐ 101-200 ☐ 201-250 ☐ 251 and over

Q2: When was your firm established (approximately what year)? __

Q3: When did your firm first start exporting (approximately what year)? ___

Q4: Considering your firm's export activities in general, please circle the best describes your scope of export activities? ***(Please circle one box only)***

Regularly (1)				***Occasionally(5)***
1	**2**	**3**	**4**	**5**

Q5: Considering your firm's export activities in general, which of the following statements best describes these activities? ***(Please tick one box only)***

☐ Your firm focuses its efforts on, and allocates resources for its exporting operations to, certain carefully selected export markets

☐ Your organization's policy is to export to as many markets as possible, with no particular focus on specific overseas markets

Q6: Please state what type of industry sector best describes your business:

☐ Agriculture Produce
☐ Beverages
☐ Chemical, Minerals and Alloys
☐ Computer Hardware
☐ Computer Software
☐ Consumer & Industrial Electrical and Electronic Product
☐ Electrical & Electronic parts and components
☐ Fashion & Textiles
☐ Machinery Equipment
☐ Medical product
☐ Pharmaceutical, Toiletries & Cosmetics
☐ Prepared Food
☐ Telecommunication
☐ Textiles, Yarns and Other Related Materials

☐ Others: _____ (Please specify)

Q7: What is the current stage of business development of your company?

☐ *Introduction stage*
(Products and services are unfamiliar to many potential users and industry wide demand is only just beginning to grow)

☐ *Growth stage*
(Total industry wide demand for products or services is growing at a rate of 10% or more annually)

☐ *Maturity stage*
(Products and services are familiar to the vast majority of prospective users and industry wide demand is relatively stable)

☐ *Decline stage*
(Total industry wide demand for products or services is decreasing at a more or less steady rate)

Q9: Please indicate the approximate **sales turnover** of your firm in the last year:

Q10: Approximately, what percentage of your company's total sales is derived from its export sales?

Section B: Learning and Innovation Activities

In general, please rate your **agreement** or **disagreement** with the following statements relating to learning and innovation activities: (Please circle the answer)

Learning Exploration	**Strongly Disagree (1)**						**Strongly Agree (7)**
Q1. In information search, we focus on acquiring knowledge of firm strategies that involve a high market risks.	1	2	3	4	5	6	7
Q2. We prefer to collect information with no identifiable strategic market needs to ensure experimentation in the firm.	1	2	3	4	5	6	7
Q3. Our aim is to acquire knowledge to develop a firm that leads us into new areas of learning such as new markets.	1	2	3	4	5	6	7
Q4. Our aim is to acquire knowledge to develop a firm that leads us into new areas of learning such as new technological area.							
Q5. We collect novel information and ideas that go beyond our current market and technological experiences.	1	2	3	4	5	6	7
Q6.Our aim is to collect new information that forces us to learn new things in the firm product development.	1	2	3	4	5	6	7
Learning Exploitation							
Q1. Our aim is to search for information to refine common methods and ideas in solving problems in the firm.	1	2	3	4	5	6	7
Q2. Our aim is to search for ideas and information that we can implement well to ensure productivity rather than those ideas that could lead to implementation mistakes in the firm and in the marketplace.	1	2	3	4	5	6	7
Q3. We search for the generally proven methods and solutions to product development problems.	1	2	3	4	5	6	7
Q4. We use information acquisition methods (e.g., survey of current customers and competitors) that help us understand and update the firm's current project and market experiences.	1	2	3	4	5	6	7
Q5. We emphasize the use of knowledge related to our existing firm experience.	1	2	3	4	5	6	7

Exploratory Innovation	**Strongly Disagree (1)**						**Strongly Agree (7)**
Q1. Our unit accepts demands that go beyond existing products and services.	1	2	3	4	5	6	7
Q2. We invent new products and services.	1	2	3	4	5	6	7
Q3. We experiment with new products and services in our local market	1	2	3	4	5	6	7
Q4. We commercialize products and services that are completely new to our unit.	1	2	3	4	5	6	7
Q5. We frequently utilize new opportunities in new markets.	1	2	3	4	5	6	7
Q6. Our unit regularly uses new distribution channels.	1	2	3	4	5	6	7
Q7. We regularly search for and approach new clients in new markets.	1	2	3	4	5	6	7
Q8. Our firm chooses new approaches to processes, products and services that are different from those used in the past.	1	2	3	4	5	6	7
Q9. Our firm has included some new aspects to its processes, products and services compared to prior strategies.	1	2	3	4	5	6	7

Exploitation Innovation	**Strongly Disagree (1)**						**Strongly Agree (7)**
Q1. We frequently refine the provision of existing products and services.	1	2	3	4	5	6	7
Q2. We regularly implement small adaptations to existing products and services.	1	2	3	4	5	6	7
Q3. We introduce improved, but existing products and services for our local market.	1	2	3	4	5	6	7
Q4. We improve our provision's efficiency of products and services	1	2	3	4	5	6	7
Q5. We increase economies of scales in existing markets.	1	2	3	4	5	6	7
Q6. Our unit expands services for existing clients. (Lowering costs of internal processes is an important objective.)	1	2	3	4	5	6	7

	Strongly Disagree (1)						Strongly Agree (7)
Q7. Employees of our firm try to continuously improve the firm's processes, products and services.	1	2	3	4	5	6	7
Q8. Employees of our firm believe that improvement of the firm's processes, products and services is their responsibility.	1	2	3	4	5	6	7

Section C: Resource Slack and Firms Diversifications

These questions ask you to rate your **agreement or disagreement** with the following statements relating to the availability of slack resources in your firm and firms diversification:

I define the resource slack as "the stock of excess resources available to an organization during a given planning cycle".

Resource Slack	**Strongly Disagree (1)**						**Strongly Agree (7)**
Q1. The development of the firm is under the available capacity of your company.	1	2	3	4	5	6	7
Q2. The development of the firm is under the available human resources of your company.	1	2	3	4	5	6	7
Q3. The development of the firm is under the available time for development activities among members.	1	2	3	4	5	6	7
Q1. The supply of retained earnings of your company is sufficient as funds whenever the firm needs it.	1	2	3	4	5	6	7
Q2. The supply of financial resources of your firm is sufficient whenever the project needs it.	1	2	3	4	5	6	7
Q3. The supply of debt financing with banks of your firm is sufficient whenever the project needs it.	1	2	3	4	5	6	7

Technology Diversification	**Strongly Disagree (1)**						**Strongly Agree (7)**
Q1.Our technology portfolio comprises technologies in many different technological areas.	1	2	3	4	5	6	7
Q2. The important technologies of our business units are very different	1	2	3	4	5	6	7
Q3. We apply technological knowledge from completely	1	2	3	4	5	6	7

different fields of technology.

Product Diversification	**Strongly Disagree (1)**						**Strongly Agree (7)**
Q1. Our product portfolio comprises a large number of different products.	1	2	3	4	5	6	7
Q2. The diversity of our product portfolio is high.	1	2	3	4	5	6	7
Q3. We are active in various industrial areas.	1	2	3	4	5	6	7
International Diversification							
Q1. Large parts of our firm's sales are generated abroad.	1	2	3	4	5	6	7
Q2. We have affiliates in a large number of countries.	1	2	3	4	5	6	7
Q3. The international business is very important for our firm.	1	2	3	4	5	6	7

Section D: Capabilities

Please indicate how well your firm has developed new skills in each of the areas listed below, for the last **three (3) years**:

Capability Development	**Stage**								**Speed(time)**						
	Basic (1)				**Complex (7)**				**Slow (1)**				**Fast (7)**		
Skills															
Manufacturing skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Product development skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Research & development (R&D) skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Venture funding skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Engineering skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Process & management skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Customer servicing skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Technology sourcing skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Technology development skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Plant management	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Marketing skills	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Business development	1	2	3	4	5	6	7		1	2	3	4	5	6	7

Please rate the effectiveness of each of the items listed for the **last three (3) years**.

Dynamic capabilities	**Not Effective (1)**						**Very Effective (7)**
Sensing Capability							
1. We frequently scan the environment to identify new business opportunities.	1	2	3	4	5	6	7
2. We periodically review the likely effect of changes in our business environment on customers.	1	2	3	4	5	6	7
3. We often review our product development efforts to ensure they are in line with what the customers want.	1	2	3	4	5	6	7
4. We devote a lot of time implementing ideas for new products and improving our existing products.	1	2	3	4	5	6	7
Learning Capability							
1. We have effective routines to identify, value, and import new information and knowledge.	1	2	3	4	5	6	7
2. We have adequate routines to assimilate new information and knowledge.	1	2	3	4	5	6	7
3. We are effective in transforming existing information into new knowledge.	1	2	3	4	5	6	7
4. We are effective in utilizing knowledge into new products.	1	2	3	4	5	6	7
5. We are effective in developing new knowledge that has the potential to influence product development.	1	2	3	4	5	6	7
Integrating Capability							
1. We are forthcoming in contributing our individual input to the group.	1	2	3	4	5	6	7
2. We have a global understanding of each other's tasks and responsibilities.	1	2	3	4	5	6	7
3. We are fully aware who in the group has specialized skills and knowledge relevant to our work.	1	2	3	4	5	6	7
4. We carefully interrelate our actions to each other to meet changing conditions.	1	2	3	4	5	6	7

5. Group members manage to successfully interconnect their activities.	1	2	3	4	5	6	7

Cont: Dynamic capabilities	**Not Effective (1)**						**Very Effective (7)**
Coordinating capability							
1. We ensure that the output of our work is synchronized with the work of others.	1	2	3	4	5	6	7
2. We ensure an appropriate allocation of resources (e.g., information, time, reports) within our group.	1	2	3	4	5	6	7
3. Group members are assigned to tasks commensurate with their task-relevant knowledge and skills.	1	2	3	4	5	6	7
4. We ensure that there is compatibility between group members expertise and work processes.	1	2	3	4	5	6	7
5. Overall, our group is well coordinated.	1	2	3	4	5	6	7
Reconfiguration capability (indicator items for second-order constructs)							
1. We can successfully reconfigure our resources to come up with new productive assets.	1	2	3	4	5	6	7
2. We often engage in resource recombination to better match our product-market areas and our assets.	1	2	3	4	5	6	7

Section E: Business Environment

Indicate your degree of agreement about how well these statements describe the market and competitive environment during the **past three (3) years.**

	Strongly Disagree (1)						**Strongly Agree (7)**
1. The actions of local and foreign competitors in our major markets were changing quite rapidly.	1	2	3	4	5	6	7
2. Technological changes in our industry were rapid and unpredictable.	1	2	3	4	5	6	7
3. The market competitive conditions were highly unpredictable.	1	2	3	4	5	6	7
4. Customers' product preferences changed quite rapidly.	1	2	3	4	5	6	7
5. Changes in customers' needs were quite unpredictable.	1	2	3	4	5	6	7

Section F: Performance

*With reference to the current performance and performance in comparison to the **previous years**.*
Please evaluate your *business performance*, **relative to your major competitors**, in term of:

	Current year								**Previous year**						
	Not at all satisfied (1)						**Very satisfied (7)**		**Much worse (1)**						**Much better(7)**
Financial															
Market share growth	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Sale growth	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Net profit margin	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Gross profit margin	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Return on investment (ROI)	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Return on sales (ROS)	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Return on assets (ROA)	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Return on equity (ROE)	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Non financial	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Overall profitability	1	2	3	4	5	6	7		1	2	3	4	5	6	7
Employee growth	1	2	3	4	5	6	7		1	2	3	4	5	6	7

Please indicate the degree to which **you are satisfied** with your business performance over the **past 3 years.**

	Not at all satisfied (1)						**Very satisfied (7)**
Profitability	1	2	3	4	5	6	7
Sales turnover	1	2	3	4	5	6	7
Sales growth	1	2	3	4	5	6	7
Return on Investment (ROI)	1	2	3	4	5	6	7
Market share	1	2	3	4	5	6	7
Yourself satisfaction	1	2	3	4	5	6	7

Please indicate the degree of your **expectation** towards the product development over the past 3 years.

New Product Development	**Below expectations (1)**						**Exceeded expectation (7)**
Revenue from new products or services	1	2	3	4	5	6	7
Growth in revenue from new products or services	1	2	3	4	5	6	7
Export profitability of new products or services	1	2	3	4	5	6	7
Growth in export sales of new products or services	1	2	3	4	5	6	7

Section G: Personal Background Information

Q1: Please indicate your position (job title) in the firm;

…….

Q2. What is your age? …….

Q3. Gender:

☐ Male ☐ Female

Q4: How many years of working experience do you have?

In general: ……

In the current company: ……

Q5: Educational level:

☐ Primary school ☐ High school ☐ Certificate/Matriculation ☐ Diploma

☐ Bachelor degree ☐ Post-graduate Others: ……

Q6: To what extent do you feel you possess knowledge regarding the questions asked in this questionnaire? **(Please circle on the number given)**

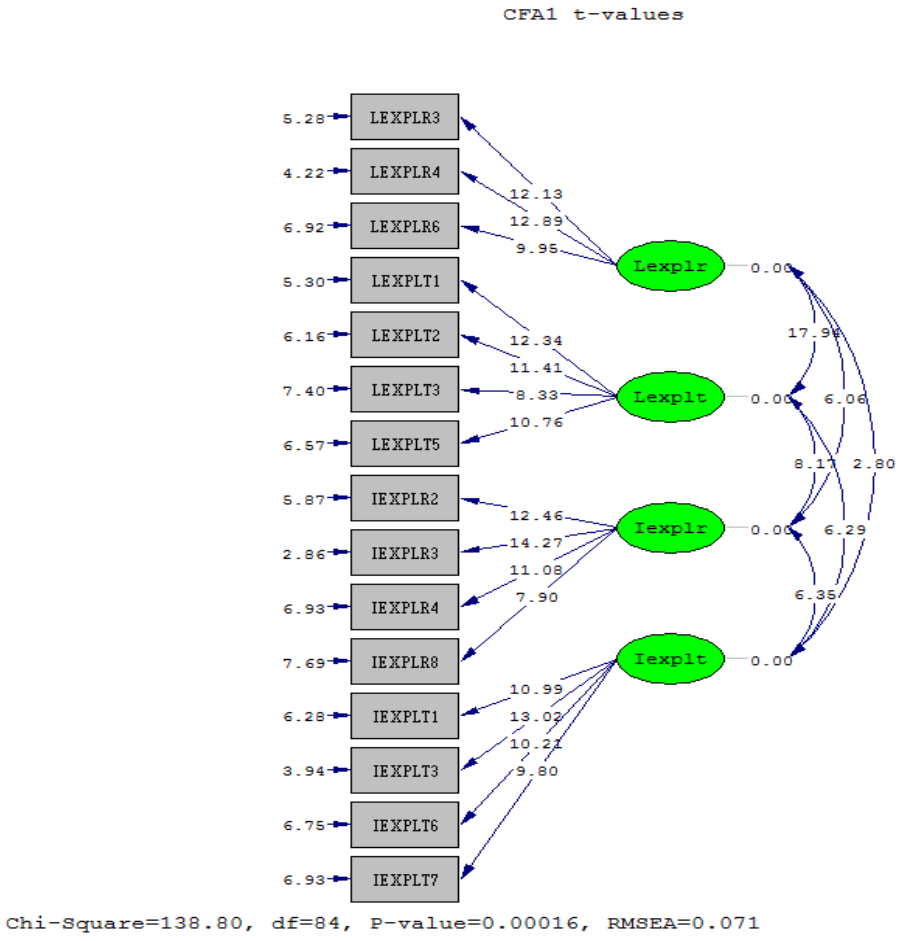
No Knowledge (1)						***Full Knowledge (7)***
1	**2**	**3**	**4**	**5**	**6**	**7**

Thank you very much for your co-operation in this important study

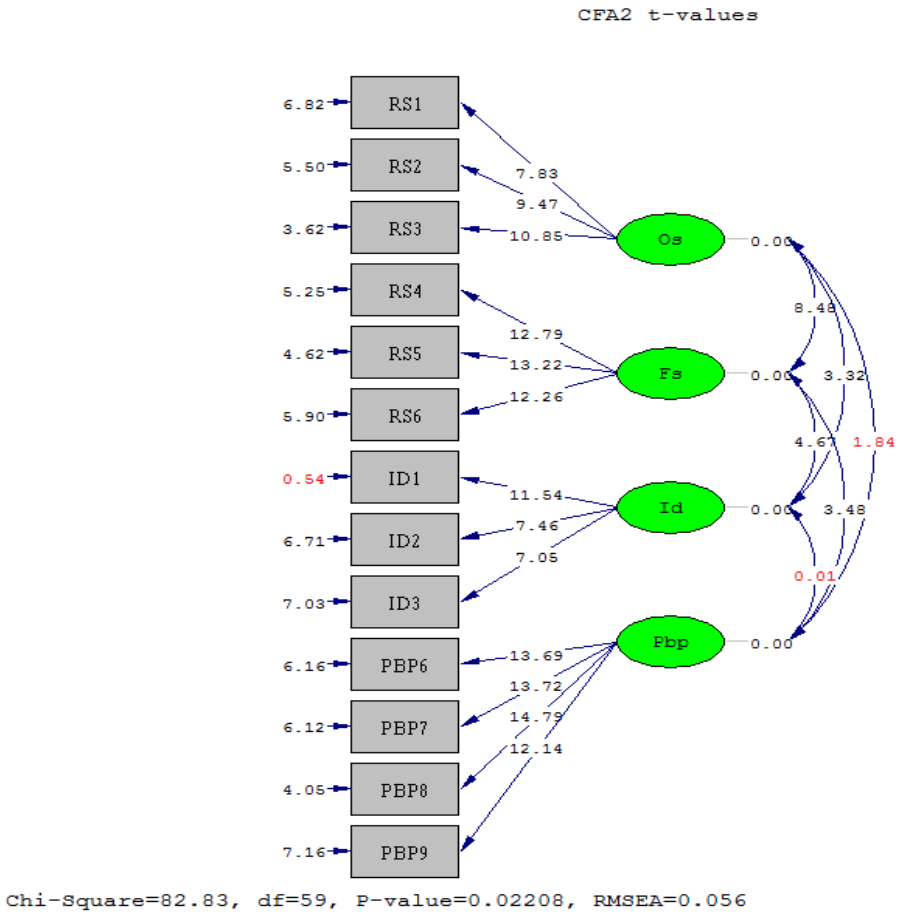
All information provided in this questionnaire will remain absolutely confidential and only be used in an aggregate, anonymous form in combination with all other responses.

APPENDIX B: RESULTS

CFA 1 t-Value

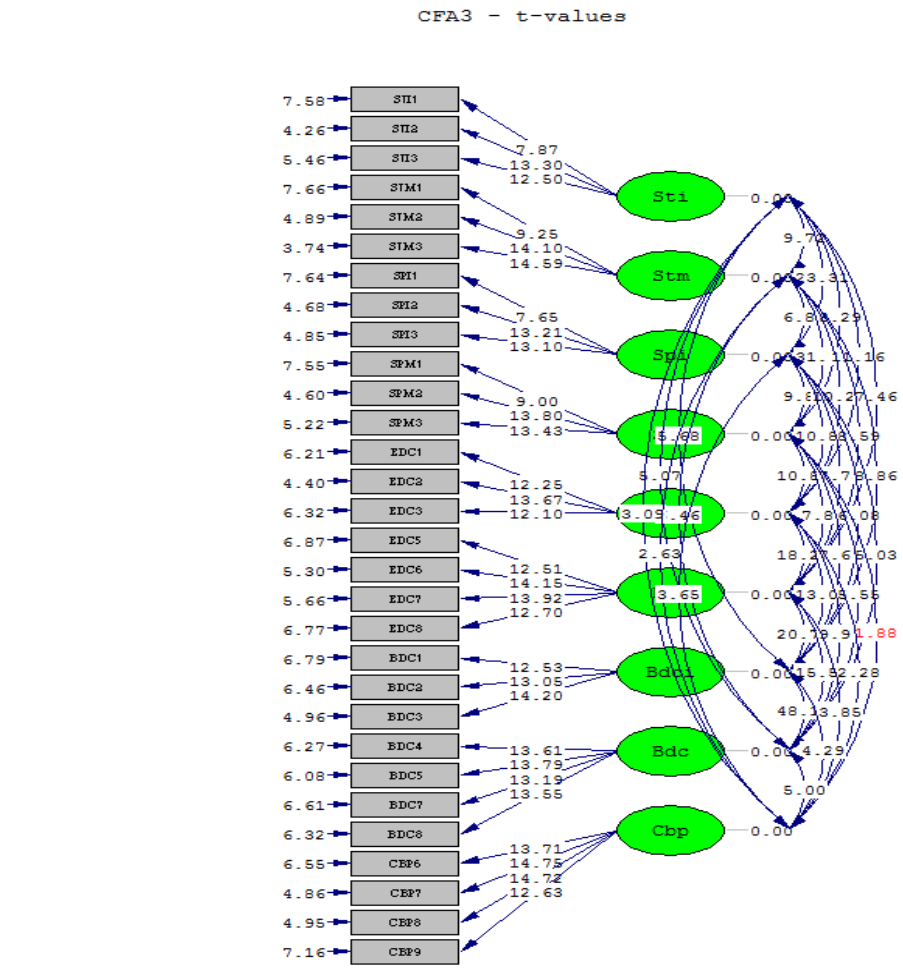


CFA 2 t-Value

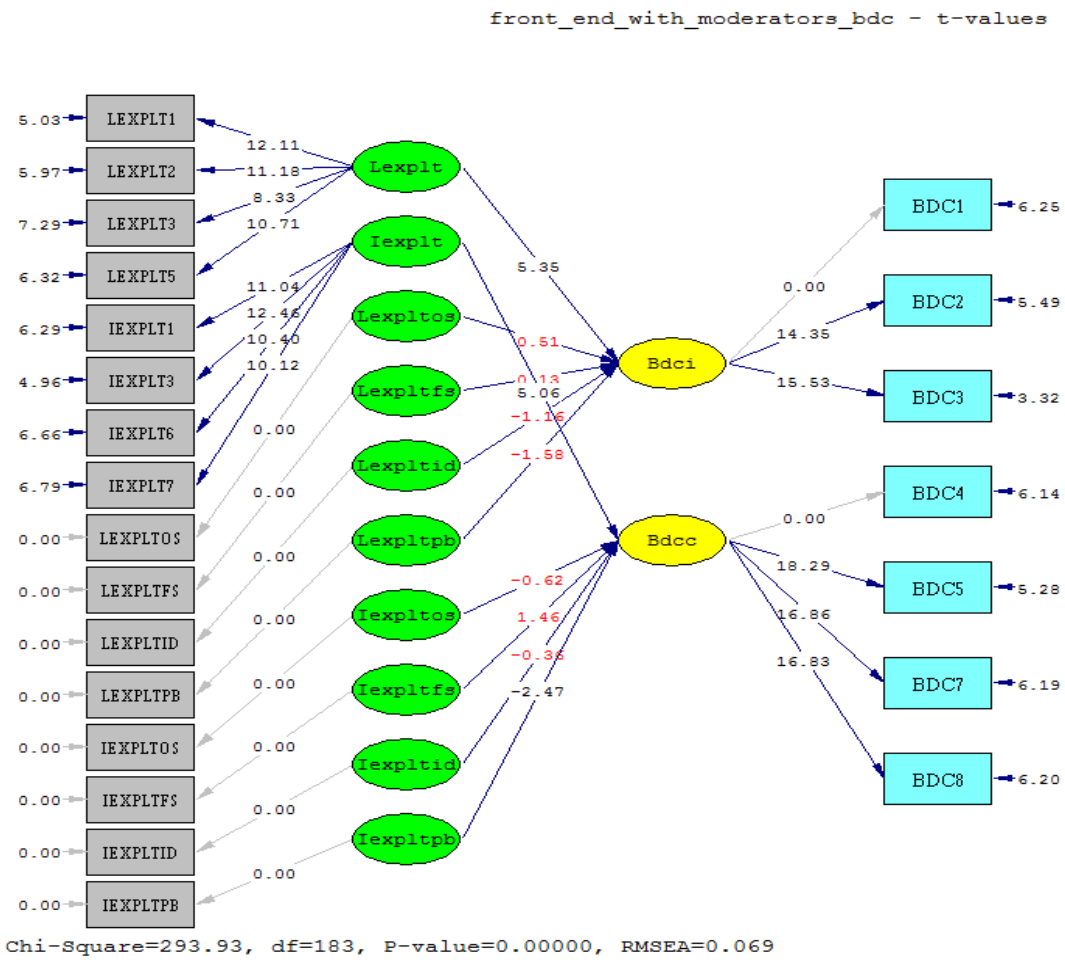


Chi-Square=82.83, df=59, P-value=0.02208, RMSEA=0.056

CFA 3 t-Value


CFA3 - t-values
Sti
Stm
Spm
Bdd
Bdc
Cbp
Chi-Square=616.68, df=369, P-value=0.00000, RMSEA=0.072

MODERATORS BDC



MODERATORS EDC