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**Post-entry internationalisation speed, managerial  
cognition, and firm performance: A dynamic  
capability perspective**

A dissertation presented in partial fulfilment of  
the requirements for the degree of

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International Business

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## **Abstract**

Inspired by the deficiency in theoretical advancement in and fragmentation of empirical findings regarding the temporal dimension of firms' internationalisation, this study examines the interaction effects of both mediation and moderation on the direct relationship between internationalisation speed and firm performance. Departing from prior studies that mainly focus on either the direct speed-performance linkage or the interactive role played by static resources at the firm level, the present study suggests that an important source of performance variations is the idiosyncratic dynamic capabilities both at firm level and individual managerial level. Based on the dynamic capability perspective, this study proposes that both absorptive capacity, which acts as a specific type of dynamic capability in relation to organisational learning, and managerial cognition, which functions as a micro-foundation of dynamic capability, play important roles in explaining the heterogeneity in the direct internationalisation speed-performance relationship. Moreover, the level and development of the firm's absorptive capacity is the outcome of interactions among firm strategy in terms of internationalisation speed, managerial cognition, and their contingent factors including prior international experience and market dynamism. Using survey data collected from a sample of 343 SMEs operating in Australia and New Zealand, these assumptions are tested and confirmed through structural equation modelling. The findings suggest that absorptive capacity fully mediates the direct speed-performance relationship. Internationalisation speed, interacting with prior international experience, influences the trajectory of absorptive capacity development. In addition, managerial cognitive styles in terms of rational decision-making and heuristic decision-making are found to impose distinct influences on absorptive capacity development under the influence of market dynamism. This study makes a significant contribution to internationalisation theories. First, it reconciles the seeming inconsistency between traditional internationalisation models and international entrepreneurship literature in terms of several key learning-related factors. Moreover, it extends existing internationalisation models by taking time and managerial cognition into consideration.

**Key words:** internationalisation speed, absorptive capacity, international experience, managerial cognition, market dynamism, performance, dynamic capability, and organisational routines.

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## List of Abbreviations

AVE	Average variance extracted
CFA	Confirmatory factor analysis
CFI	Comparative fit index
CMV	Common method variance
CR	Composite reliability
IFI	Incremental fit index
LAN	Learning advantages of newness
MNEs	Multinational enterprises
OECD	Organisation for Economic Cooperation and Development
RMSEA	Root mean square error of approximation
SEM	Structural equation modelling
SMEs	Small and medium sized enterprises
SD	Standard deviation
TCD	Time compression diseconomies
TLI	Tucker-Lewis index
VIF	Variance inflation factor

## **Chapter 1 - Introduction**

### **1.1 The Research Topic and its Background**

The temporal dimension of internationalisation, once implicit in the literature, has received increasing research attention and occupied the central position in the debate on the relative influence of internationalisation process theory and the emerging international entrepreneurship paradigm in explaining performance outcomes of internationalisation speed (Hilmersson, Johanson, Lundberg, & Papaioannou, 2017). Earliness, measured through time elapsed between the firm's establishment and its first international venture (Oviatt & McDougall, 2005c), was initially proposed to capture the temporality of internationalisation. However, this conceptualisation based on the notion of 'speed' has been criticized for its narrow view of the temporality of internationalisation (Chetty, Johanson, & Martín, 2014). It not only overlooks post-entry speed (Prashantham & Young, 2011), but also neglects changes to diversity of entry modes and to breadth of foreign markets over time (Casillas & Acedo, 2013). As a result, post-entry speed has increasingly become a focus of research on firm internationalisation (García-García, García-Canal, & Guillén, 2017; Hitt, Li, & Xu, 2016; Meschi, Ricard, & Tapia Moore, 2017; Mohr & Batsakis, 2017).

Despite some theoretical advancements, the study of the temporal dimension of internationalisation is still in its infancy and suffers serious theoretical and empirical shortcomings. First, existing studies present inconsistent or even conflicting findings on the performance implications of internationalisation speed. Some studies rooted in internationalisation process theories argued for a slow and gradual internationalisation process (Johanson & Vahlne, 1977, 1990). In contrast, other studies based on international entrepreneurship theories advocated for the benefits of rapid internationalisation (Oviatt & McDougall, 2005c). Only more recently have scholars attempted to reconcile these conflicting results by examining the curvilinearity and contingency of the speed-performance relationship (García-García et al., 2017; Jiang, Beamish, & Makino, 2014; Mohr & Batsakis, 2017; Yang, Lu, & Jiang, 2017). Drawing on the knowledge-based view, these studies focus more on the interactive effects of knowledge. However, the mere accumulation of knowledge cannot sustain firms'

survival in rapidly changing environments (Priem & Butler, 2001). The value of knowledge may depreciate as firms expand into different institutional contexts or with the passage of time. Frequent changes in global markets require firms to develop certain types of capabilities that can alter existing resources in relation to external challenges (Teece, 2014a; Teece, Pisano, & Shuen, 1997).

Absorptive capacity, as a specific type of dynamic capability, enables firms to build up and maintain competitive advantages in dynamic environments, such as internationalisation (Cohen & Levinthal, 1990; Flor, Cooper, & Oltra, 2018; Patel, Kohtamäki, Parida, & Wincent, 2015; Sciascia, D'Oria, Bruni, & Larrañeta, 2014). Efficient organisational learning and capability development is a necessity for rapid foreign expansion. On one hand, as an enabler of organisational learning from external environments, absorptive capacity enables firms to store the externally-acquired knowledge and build up knowledge bases. On the other hand, absorptive capacity enables firms to combine the externally acquired knowledge with existing knowledge and apply it in the subsequent expansion into similar or even distant markets. Prior studies on absorptive capacity concentrate on its facilitating effects on innovation (Masaaki, Crystal, & Janet, 2014; Patel et al., 2015) and knowledge transfer across subsidiaries (Minbaeva, Pedersen, Björkman, Fey, & Park, 2014) or in inter-organisational networks (Yoo, Sawyerr, & Tan, 2016). However, it is still unknown how absorptive capacity could interact with firm strategy in terms of internationalisation speed to generate superior performance in global markets (Al-Aali & Teece, 2014).

Second, the importance of organisational learning in explaining firm internationalisation has been emphasised in both internationalisation process theories and international entrepreneurship research (Hilmersson et al., 2017). However, existing studies mainly focus on the direct influence of organisational learning on internationalisation speed (Acedo & Jones, 2007; Casillas & Moreno-Menéndez, 2014). As a result, scant research has examined whether and how acceleration of internationalisation would influence absorptive capacity as a firm-level capability which is conducive to acquisition and application of external knowledge (Clarke, Tamaschke, & Liesch, 2013). A firm's existing knowledge base constitutes its current absorptive capacity (Autio, Sapienza, & Almeida, 2000). Organisational learning through international activities enables the firm to enlarge its knowledge base, which would accordingly lead to changes in its



absorptive capacity. Surprisingly, very little research has examined in depth the nature of the relationship between organisational learning and absorptive capacity (Sun & Anderson, 2010). Existing studies on absorptive capacity primarily adopt a static perspective and examine its antecedents, outcomes and contingent factors (Rodríguez-Serrano & Martín-Armario, 2017), and assume that firms have a rather stable level of absorptive capacity (Schildt, Keil, & Maula, 2012). Very few studies have taken a dynamic perspective and examined how firm-level absorptive capacity changes as an outcome of international pursuit (Marabelli & Newell, 2014).

More importantly, internationalisation process theories and international entrepreneurship research present fragmented or even conflicting views on the relationship between organisational learning and capability development (Zahra, Zheng, & Yu, 2018). Emphasising path-dependent organisational learning, the internationalisation process theories argued that accumulation of experience from prior international activities is essential for expansion into distant foreign markets (Eriksson, Johanson, Majkgard, & Sharma, 1997; Hutzschenreuter & Matt, 2017). In contrast, international entrepreneurship research proposed the concept of learning advantages of newness, and highlighted the strategic advantages enjoyed by firms with limited prior international experience in developing organisational capabilities (Autio et al., 2000; Wu & Voss, 2015). Internationalisation process theories tend to overestimate the role of prior experience in subsequent international expansion and neglect the depreciation in its value with the passage of time (Berends & Antonacopoulou, 2014). On the other hand, international entrepreneurship research tends to underestimate the learning challenges imposed by the heterogeneity in institutional contexts, and overlook the cumulative benefits from prior experience (Arregle, Miller, Hitt, & Beamish, 2016; Mulotte, 2014). Inconsistent with internationalisation process theories, literature on absorptive capacity emphasises its path-dependent nature and considers prior experience as an important antecedent to absorptive capacity (Patterson & Ambrosini, 2015). However, little research has examined whether and how prior experience regulates absorptive capacity in the internationalisation process.

Third, the role of managerial cognition is seriously underspecified in existing internationalisation theories (Maitland & Sammartino, 2015). Decision-making has a direct influence on organisational outcomes. Internationalisation involves a hierarchical

decision-making process in which foreign markets are first selected, then entry mode choices are made based on the risk profile of the selected markets. Decision-making in internationalisation is an information-intensive process, which requires collection of market and institutional information, and is further complicated by noisy, ambiguous information, and discrete changes in global markets. Managers or owners make sense of foreign environments and form their perceptions, which are significantly influenced by their cognitive structure and processes. The personalised interpretation of the situations they face will influence strategic choices, and through these choices, shape firm performance (Clark, Li, & Shepherd, 2018; Doornich, 2018).

Existing research has primarily examined the influence of managerial demographics, such as prior experience and social capital, on internationalisation decision-making and outcomes (Arentz, Sautet, & Storr, 2013; Marvel, Davis, & Sproul, 2016; Semrau & Hopp, 2016). However, managerial demographics are not an appropriate proxy for managerial cognition. The literature of psychology has distinguished rational versus heuristic processes as two types of cognitive process (Evans, 2006). With respect to rational decision-making, many international business studies embrace the theoretical assumption of decision-making as fully rational (Goll & Rasheed, 1997; Priem, Rasheed, & Kotulic, 1995), while others highlight decision-makers' bounded rationality and its detrimental effects on performance (Levine, Bernard, & Nagel, 2017; Welter & Kim, 2018). With respect to heuristic decision-making, research has provided a highly limited understanding about its application in the context of internationalisation and associated performance outcomes (Loock & Hinnen, 2015; Monaghan & Tippmann, 2018), although the psychology literature has argued for its potential benefits in simplifying the decision-making process (Gigerenzer & Gaissmaier, 2011).

In addition to fragmented findings on performance implications, even less is known about whether and how managerial cognition would affect firm-level dynamic capability. Some scholars have rationalised managerial cognition as the micro-foundation of dynamic capability (Autio, George, & Alexy, 2011; Helfat & Peteraf, 2015; Teece, 2007). Decision-makers' mental models and preference for information processing shape the focus of their attention and influence their interpretation of external challenges and opportunities (Chaston & Sadler-Smith, 2012; Plambeck, 2012), which would subsequently affect how existing organisational routines are assembled

and reconfigured at the firm level (Marcel, Barr, & Duhaime, 2011). Moreover, changes in external environments would determine how much time is allowed for decision-making and the complexity of the causal relationships, which would in turn influence managers' selection of cognitive process and decisions on deployment of organisational routines (Child & Hsieh, 2014; Elbanna & Child, 2007). Following this stream of literature, managerial cognition may affect the firm-level information seeking scope and collection process during internationalisation, and ultimately the utilization of externally acquired information (Volberda, Foss, & Lyles, 2010). As external stimuli, changes in foreign markets would require development of new organisational routines or modification of existing ones. However, given the neglect of managerial cognition in the existing internationalisation models, little is known regarding how managerial cognition affects the deployment of organisation routines that are conducive to knowledge acquisition and application, and even less is known about how changes in the external environment would affect the deployment.

## **1.2 Research Questions and Objectives**

Inspired by the research gaps discussed above and guided by the dynamic capability theory as a theoretical lens, the present study will focus on the dynamics of learning capability in relation to the temporal dimension of internationalisation and their performance implications in the context of SMEs. In accordance with the overall research aim, the following research questions have been proposed:

1. How does absorptive capacity interact with firm strategy regarding internationalisation speed to influence performance in global markets?
2. How does internationalisation temporality, including post-entry internationalisation speed and prior international experience, influence absorptive capacity?
3. How do managerial cognition and its contingent factor of market dynamism affect absorptive capability at a firm level, and what are the performance outcomes?

To effectively address these research questions, the following research objectives have been developed:

1. To examine the relationship between post-entry internationalisation speed and performance;
2. To identify the role played by absorptive capacity in influencing the relationship between post-entry internationalisation speed and performance;
3. To examine the relationship between post-entry internationalisation speed and absorptive capacity, and the contingent role played by prior international experience on the relationship;
4. To investigate the influence of rational decision-making on absorptive capacity development and on performance respectively, and the contingent role played by market dynamism on the influences;
5. To investigate the influence of heuristic decision-making on absorptive capacity development and performance respectively, and the contingent role played by market dynamism on the influences.

### **1.3 Research Design and Methodology**

Generally speaking, the method a researcher adopts is determined by the research paradigm followed and the philosophical stance taken in the study. The present study involves testing/validating a set of hypotheses, which are derived from a conceptual framework formulated to address the identified research gaps. The empirical base of this study is data collected through the survey method. Thus, the research paradigm for this study is ‘positivism’, and the methodological approach adopted in this study can be described as being ‘deductive’.

More specifically, a ‘quantitatively deductive’ approach is applied in the present study, and its research design is developed by taking the following steps:

- (1) The research gaps are identified regarding the research phenomenon of the firm’s internationalisation;
- (2) In order to address the research gaps, a conceptual framework is proposed on the basis of the existing theories (dynamic capability theory, internationalisation process model, and international entrepreneurship research);
- (3) A set of hypotheses are derived from the conceptual framework to delineate the causal and interactive relationships among several key factors of the firm’s

internationalisation: dynamic capabilities, firm strategy in internationalisation, managerial cognition, and firm performance;

- (4) Empirical data are collected through a questionnaire survey;
- (5) Quantitative data analysis techniques, mainly structural equation modelling analysis, are applied for data analysis;
- (6) Empirical results from modelling analyses are interpreted and discussed in comparison with findings from the prior research with the purpose to advance theories of firm internationalisation.

New Zealand and Australia are particularly suitable for the present study, given the large number of SMEs in both countries and strong dependence on international markets. Based on information contained in several versions of the 'Directory of Enterprises' for these two countries, 2,700 SMEs that have generated income from foreign markets in the past five years (1,000 in New Zealand and 1,700 in Australia) were randomly selected. Owners or managers were targeted since they have discretion over and/or would be knowledgeable about strategic decision-making and firm performance issues. Primary data were collected through an online questionnaire survey, which was conducted from July 2016 to February 2017. Two rounds of follow-up emails were also sent out, serving as reminders. At the end, 343 usable responses (228 from Australia and 115 from New Zealand) were received. Preliminary tests were conducted in order to evaluate the quality of data, after which measurement model and path models were tested using structural equation modelling.

#### **1.4 Significance of the Research**

This study makes important contributions to internationalisation theories. First, stimulated by the recent renewed interest in organisational learning (Autio et al., 2011; Khan & Lew, 2018; Sapienza, Autio, George, & Zahra, 2006), this study contributes to the literature by reconciling two inconsistent perspectives on organisational learning in existing internationalisation theories. Traditional internationalisation models emphasise path-dependent learning and suggest a gradual and incremental internationalisation process, while international entrepreneurship research proposes the concept of learning advantages of newness, and highlights the strategic importance of rapid internationalisation. This study reconciles the theoretical conflicts between key

learning-related concepts in existing internationalisation theories by outlining the influence of internationalisation temporality on realisation of learning advantages of newness. This study supplements the literature on the relationship between organisational learning and absorptive capacity by revealing the influence of firm strategy of internationalisation speed on the firm-level ability to learn over time and space (Arndt & Pierce, 2018). It also enriches the understanding of the influential role of prior experience on absorptive capacity by revealing its beneficial and detrimental implications for the trajectory along which absorptive capacity changes.

Second, this study highlights the importance of dynamic capabilities and individual imprints in SME internationalisation by revealing the pivotal roles of absorptive capacity and managerial cognition in affecting the internationalisation speed and performance. Previous studies on internationalisation strategies have primarily focused on MNEs, and have emphasised competitive advantages derived from firms' market position. Thus, the traditional market-focused model of internationalisation is inadequate to explain SMEs' internationalisation behaviour. The capability-based internationalisation model, extended by incorporation of managerial cognition, has much power to explain the heterogeneity in internationalisation strategies and performance implications (Autio et al., 2011; Maitland & Sammartino, 2015).

Third, by disclosing the influence of managerial cognition on absorptive capacity, this study highlights managerial cognition as a valid and crucial individual-level factor to account for the heterogeneity in firm strategies and performance. Moreover, it also highlights the necessity of connecting factors influencing dynamic capabilities across firm and individual levels, thus contributing to the literature regarding dynamic capabilities (Phillip & Mike, 2018). In the context of internationalisation, a firm's absorptive capacity is not just a function of history- and path-dependent organisational learning. Key decision-makers' mental structures and preferences for information processing are also likely to exert influence on firm-level routines, thereby affecting absorptive capacity and performance outcomes. As shown by the empirical results of the study, the rationality and heuristics of the managers, depending on market dynamism, affect the natural trajectory of absorptive capacity and performance implications of rapid internationalisation. This finding provides a nuanced

understanding of the importance of micro- and macro- factors in organisational research, and highlights the cognitive micro-foundation of dynamic capabilities.

## **1.5 Structure of the Thesis**

This thesis is composed of seven chapters and is structured as follows:

Chapter One provides an overview of the thesis. This chapter presents the research background, research scope and research objectives, followed by the articulation of the significance of this study. The structure of this thesis is also outlined at the end.

Chapter Two presents a critical review of theories and studies related to internationalisation and its temporal dimensions in particular. It firstly summarises the literature on the internationalisation process and reveals a shift of research focus to the temporal dimension of internationalisation. Research gaps are identified through a synthesis of fragmented findings on internationalisation speed and performance implications. Then, the dynamic capability theory is reviewed and justified as the overarching theoretical lens to guide the study by exploring the nature of dynamic capability, its creation and development process, context dependence and outcomes. Lastly, key theoretical constructs employed in the study are identified based on a comprehensive review of the internationalisation stage theory and international entrepreneurship research.

Chapter Three presents the conceptual framework and hypotheses development. Based on the rationale for linkages between theoretical constructs that are drawn from internationalisation theories reviewed in Chapter Two, a conceptual framework is developed centred on the absorptive capacity as a type of firm dynamic capability and its interactions with internationalisation speed and managerial cognition to influence firm performance. Then, derived from the conceptual framework, a set of hypotheses are proposed, which are empirically tested in the study.

Chapter Four covers the philosophical position and methodology adopted in the study, research context and research design. The distinctive ontological and epistemological positions of quantitative and qualitative research are discussed in order to justify the

selection of quantitative research for this study. Then, the rationale for combining samples from New Zealand and Australia as a research context is briefly discussed. This chapter also delineates the population and sampling method, questionnaire design, measures of variables, data collection process and techniques used in data analysis, followed by a brief discussion about methodological limitations.

Chapter Five presents the empirical results of both preliminary tests and structural equation modelling (SEM). The preliminary tests highlight the characteristics of survey data, respondents and sample firms, and the final sample size for structural equation modelling. Then, more importantly, the results of the measurement model and path models of SEM are presented and delineated.

Chapter Six provides in-depth interpretation and discussion of the empirical findings. As part of this chapter, the relevance of the findings to the existing literature and their contributions to filling identified research gaps are also discussed.

Chapter Seven concludes the study. It summarises key findings and contributions to relevant theories, followed by a discussion of practical implications. Then, limitations associated with the research methodology and interpretation of findings, and directions for future research are discussed.



## **Chapter 2 - Literature Review**

This chapter presents a critical review of theories and empirical studies pertaining to the internationalisation process and its temporality dimension in particular. The primary objective of this chapter is to unveil the neglected temporal dimension of internationalisation in international business research and delineate the fragmented research on internationalisation speed due to the inefficient distinction between several temporal concepts. Moreover, the appropriateness of dynamic capability theory as a theoretical lens to examine performance implications of rapid internationalisation speed will also be justified.

More specifically, Section 2.1 provides a brief overview regarding the relationship between internationalisation and performance. Section 2.2 reviews two key decisions made during internationalisation: foreign market selection and entry mode choices. Section 2.3 highlights the shift in international business research focus from market entry to the temporality of internationalisation, followed by a summary and critical analysis of recent developments in research on post-entry internationalisation speed in Section 2.4. The dynamic capability theory as the theoretical foundation of this study has been reviewed regarding several aspects, including the nature of dynamic capability, its creation and development process, context-dependence and outcomes. In Section 2.6, as two main research streams that dominate studies on the internationalisation process and its temporal features in particular, internationalisation process theories and international entrepreneurship research are reviewed, with an attempt to identify key dynamic capabilities that are crucial to account for the heterogeneity in post-entry internationalisation speed and performance.

### **2.1 Internationalisation as a Growth Strategy**

Internationalisation has been considered an important growth strategy for firms, particularly for SMEs whose business scope has been geographically confined (Kyläheiko, Jantunen, Puumalainen, Saarenketo, & Tuppuru, 2011). The phenomenon of internationalisation has attracted intensive research attention from strategic management, international business and entrepreneurship. Internationalisation provides

firms with opportunities to achieve a larger volume of production, to take advantages of market imperfections, to improve firms' knowledge base and innovation, and to leverage unique resources in different markets (Dunning, 2000; Lu & Beamish, 2001), thus resulting in enhancement of competitive advantages and performance. However, internationalisation is also associated with striking and unique challenges in addition to those associated with domestic markets. The operation of international business in diverse foreign markets incurs costs of transaction, communication, coordination and control. Moreover, the knowledge and capabilities developed in domestic markets are not necessarily applicable given the economic, cultural and political differences between domestic and foreign markets (Joardar & Wu, 2017). Internationalisation is a strategy that requires a fundamental departure from existing business practices and entails high levels of risk. The trade-off between benefits and risks inherent in internationalisation essentially explain the performance outcomes of internationalisation (Mohr & Batsakis, 2017).

The performance implications of internationalisation have been widely acknowledged as the ultimate goal in strategic management as well as the central research theme (Hitt, Tihanyi, Miller, & Connelly, 2006; Kirca et al., 2011). During the last four decades, a significant number of empirical studies in international business have examined the relationship between internationalisation and performance. However, the findings remain inconsistent or even contradictory (Glaum & Oesterle, 2007). Focusing on the benefits of internationalisation, such as access to low cost labour, broader learning and marketing opportunities, some studies advocated for a positive linear relationship (Kim, Hwang, & Burgers, 1989; Pangarkar, 2008). Meanwhile, some other studies suggested a negative linear relationship by focusing on the cost of internationalisation stemming from liabilities of foreignness and newness (Wan & Hoskisson, 2003). It has been noted that the narrow focus on either benefits or costs of internationalisation fails to fully capture the fundamental complexity of dynamics involved in internationalisation (Cardinal, Miller, & Palich, 2011). Accordingly, complex nonlinear relationships have been proposed by incorporating both benefits and costs associated with internationalisation. However, the findings regarding the nature of the internationalisation-performance relationship remain inconsistent. Supporters of a U-shaped relationship stated that firms may not benefit instantly from internationalisation due to liabilities of foreignness. Performance will increase as ownership advantages are

exploited through an increased amount of international commitment and as new capabilities are developed in foreign markets (Lu & Beamish, 2001). In contrast, some scholars advocated for an inverted U-shaped relationship (Chiao, Yang, & Yu, 2006). Following this view, the positive influence of internationalisation on performance can only be sustained to a certain point. After that point, internationalisation starts to decrease performance due to increasing coordination costs associated with international operations and further stretch of thin managerial resources across various foreign markets.

The review of prior research suggests that views and empirical results regarding the internationalisation-performance relationship are rather inconsistent and/or even conflicting, indicating that the academic understanding of the performance effects of internationalisation is still far from conclusive. The present study aims to reconcile the inconsistent views/empirical findings on the internationalisation-performance relationship by examining the contingent nature of the relationship and by conceptualising internationalisation speed as the firm's diversification of foreign markets entered and entry modes adopted.

## **2.2 The Internationalisation Process**

Internationalisation is defined as a process by which a firm increases its level of involvement in foreign markets over time (Welch & Luostarinen, 1988). Internationalising firms demonstrate a variety of international behaviours (Baum, Schwens, & Kabst, 2015). Over the past several decades, research in the international business literature has intensively focused on selection of foreign market and entry mode as key strategic decisions pertinent to firm internationalisation. Decisions on location and entry mode are strategically important and mistakes in either of them would impose a detrimental impact on performance. This section provides detailed discussion of the research regarding selection of foreign market and entry mode.

## **2.2.1 Selection of foreign market**

### *Theories relevant to foreign market selection*

Selection of foreign markets has been considered as the primary concern in the internationalisation process (Kraus, Ambos, Eggers, & Cesinger, 2015). In the literature of international business, two perspectives have been used to examine selection of foreign markets: the economics tradition that is rooted in trade theory and industrial organisation, and the behavioural tradition inspired by the firm behavioural theory and the firm growth theory (Kim & Aguilera, 2016). The economics tradition focuses on country- and industry-specific factors that drive firm internationalisation. The most influential theory is the eclectic paradigm, which states that selection of foreign market is determined by the interaction of three sets of interdependent variables: ownership advantage, location advantage, and internalisation advantage (Dunning, 1993). Foreign markets are selected based on certain criteria, such as low risk of losing control over firms' ownership advantage, access to immobile, natural or other strategic resources, and minimisation of transaction costs (Dunning, 2000). Thus, according to the perspective of traditional economics, selection of foreign market is a calculative and rational economic decision (Beugelsdijk, Kostova, Kunst, Spadafora, & van Essen, 2018). The growth opportunities and/or cost advantages in a foreign market determine its attractiveness to internationalising firms. There is little room for managerial discretion (Buckley, Devinney, & Louviere, 2007). These theories have been predominantly applied in the research on the internationalisation process of multinational enterprises (MNEs), which involves intensive resource commitment.

In contrast, the behavioural tradition focuses on managerial issues that create impediments to firms' internationalisation. The primary barrier to internationalisation is the scarcity of managerial attention when a considerable amount is required to absorb necessary information in order to dispel the uncertainty and risk perceived in foreign markets. The most influential theory in the behavioural tradition is the Uppsala model or stage models of internationalisation, which have been widely applied in the research on SMEs' internationalisation. The Uppsala model gives considerable latitude to organisational learning and posits that selection of foreign market is a path-dependent outcome (Johanson & Vahlne, 1977). At the initial stage of internationalisation,

geographically and culturally close foreign markets are more likely to be selected due to the low level of perceived uncertainty and risk. At later stages, experiential learning and the context of prior learning experience determine the subsequent foreign market entry.

Both economics and behavioural traditions have highlighted the role of rationality in the decision-making regarding foreign market entry (Buckley et al., 2007). However, the economics tradition emphasises firm-focused rationality and assesses the costs and benefits in light of the economic and competitive constraints operating in a foreign market. The behavioural tradition emphasises manager-focused rationality and concentrates more on how organisational learning mitigates managerial bias, thus affecting selection of foreign markets. Studies have found that the decision-making regarding foreign market selection may not always align with economic tradition (Buckley et al., 2007), and managerial cognition also has an influence on decision-making (Clark et al., 2018). The role of managerial cognition is even more critical in the context of SMEs since the owner or manager makes most decisions. This highlights the importance of incorporating managerial cognition into the internationalisation model.

### ***Performance implications of geographic expansion***

Extant studies used internationalisation scope (e.g. the number of foreign markets) to reflect the geographic dispersion of international operations across countries (Ref, 2015). Geographic expansion reflects a firm's ability to operate in markets that are different from its domestic market in terms of customer preference, resources, institutions and competition. Some firms confine their international activities within geographically close markets and focus on serving a small number of foreign markets, while others expand globally and target a large number of foreign markets. The relationship between geographic expansion and performance has received a significant amount of attention. A curvilinear relationship between internationalisation scope and performance has been found in the literature. An increase in the number of foreign markets can positively affect firms' international sales, since a higher number of outlets increases the sales of products (Li, Qian, & Qian, 2012). Furthermore, the increase in the diversity of foreign markets exposes firms to a wider range of new knowledge and experience, which improves firms' ability to explore international opportunities and beat competitors in terms of product innovation (Patel, Fernhaber, McDougall-Covin, & van der Have,

2014; Wang, Chen, & Chang, 2011). However, from the perspective of cost efficiency, an increasing number of foreign markets may impair firm performance, since it requires a significant amount of time and resource commitment to diverse markets. As a result, the relationship between the internationalisation scope and performance may become negative (Cieřlik, Kaciak, & Thongpapanl, 2015).

### **2.2.2 Choice of entry mode**

#### *Theories relevant to entry mode selection*

Once a foreign market is selected, the subsequent critical decision in internationalisation is entry mode choice, which determines the amount of resources committed to the selected foreign markets (Kraus et al., 2015). A choice of entry mode reflects the level of control a firm has over its international activities and the level of risk that the firm will bear in the selected foreign markets (Hill, Hwang, & Kim, 1990). Extant studies have classified entry mode choice into two categories: equity entry mode and non-equity entry mode (Hollender, Zapkau, & Schwens, 2017). Equity entry mode requires a high level of resource commitment and entails a high level of risk, but allows firms to have tight control over operational and strategic decision-making in a foreign market (Brouthers & Nakos, 2004). In contrast, non-equity entry mode is less resource intensive and provides firms with great flexibility, but firms are not able to closely monitor changes in the foreign market and subsequently become more vulnerable to external challenges (Brouthers & Nakos, 2004). The research attention has predominantly concentrated on MNE entry mode choice. The current knowledge regarding SMEs' entry mode choice is equivocal (Laufs & Schwens, 2014).

Theories that have been widely applied in the study of entry mode choice are the transaction cost theory, the institutional theory, and the resource-based view. The transaction cost theory is the most widely used theoretical perspective in research on entry mode choice. According to the theory, entry modes that involve a high level of resource commitment will be chosen in the following conditions: (1) when the firm's competitive advantages are built upon proprietary knowledge and technology; (2) when the firm is unable to predict the behaviour of individuals in a foreign market; (3) and/or when the political and legal risks are low in a foreign market (Brouthers & Nakos,

2004). A high commitment entry mode enables firms to protect technological knowledge from diffusing to competitors (McNaughton & Bell, 2001), and minimise opportunistic behaviour displayed by individuals in foreign markets (Klein, Frazier, & Roth, 1990), while a low resource intensive entry mode allows firms to remain flexible to market and institutional challenges in foreign markets (Erramilli & Rao, 1993).

The institutional approach is an extension of the eclectic paradigm (Brouthers, Brouthers, & Werner, 2008). It suggests that the institutional environment of a foreign market, which encompasses culture, economy and politics, affects the boundary of a firm's choice of entry mode (Brouthers & Hennart, 2007). The great distance in culture and ideology between home and host country, and/or the inefficient functioning of the political, legal, and economic institutions in a host country entail high cost and risk for doing business (De Villa, Rajwani, & Lawton, 2015; Schwens, Eiche, & Kabst, 2011). The perceived risk and cost subsequently discourage firms from using a resource-intensive entry mode (Kraus et al., 2015; Laurell, Andersson, & Achtenhagen, 2013). The negative influence of institutional distance on internationalisation is even more prominent in the context of SMEs, since they are resource constrained and tend to have relatively weak legitimacy in foreign markets (Ojala, 2015). Recently, research has examined the influence of home country institutional environment on entry mode choice. Some studies found that the level of political risk in the home country affects the development of certain capabilities, which helps firms confront challenges of internationalisation (Cuervo-Cazurra, Ciravegna, Melgarejo, & Lopez, 2018).

The Uppsala model has also been applied to examining entry mode choice (Johanson & Vahlne, 1977). Similar to the case of foreign market selection, a firm follows an incremental process to increase the amount of resources committed to the entry mode adopted in a foreign market. Usually, it starts with exporting, followed by contract agreements, joint ventures and lastly establishment of wholly-owned operations. Thus, the entry mode selection is a time-dependent process (De Villa et al., 2015; Johanson & Vahlne, 2009). The previously applied entry modes, especially those frequently used, determine the subsequent entry mode choice (Swoboda, Elsner, & Olejnik, 2015). The Uppsala model highlights the importance of prior experience as a valuable firm-specific resource that affects entry mode choice. This point also echoes the central argument of

the resource-based view that valuable, rare, and inimitable firm-specific resources and capabilities are critical for development of competitive advantages.

### ***Performance implications of entry mode diversification***

Entry mode choice has been considered an important strategic decision, since it involves resource commitment in foreign markets with different levels of control and risk. Unlike the research on antecedents to entry mode choice, the research on its performance implications has progressed in a fragmented manner and mainly focused on MNEs. A significant amount of research attention has focused on the performance implications of equity-based entry modes in the context of MNEs, rather than those of non-equity entry modes (Zhao, Ma, & Yang, 2017). More specifically, research efforts have been mainly devoted to comparing the performance effects of two equity-based entry modes, namely joint ventures and wholly-owned subsidiaries (Brouthers & Hennart, 2007). Some studies have found that the wholly-owned subsidiaries outperform joint ventures (Woodcock, Beamish, & Makino, 1994; Zhao et al., 2017). To take it further, some studies stated that the survival and performance implications of joint ventures and wholly-owned subsidiaries depend on alignment of transactional and institutional factors (Brouthers, 2013; Meschi, Phan, & Wassmer, 2016).

The performance implications of SMEs' entry mode choice have received scant research attention. It has traditionally been accepted that SMEs with limited resources would choose entry modes with low resource commitment, such as exporting, when operating in foreign markets. Nevertheless, some SMEs, known as international new ventures, have been found to commit to foreign markets through resource-intensive entry modes. Accordingly, entry mode choice by SMEs has received increasing research attention. With a significant body of research focusing on the performance effect of exporting, only a few studies have attempted to compare the performance implications of equity- and non-equity entry modes in the context of SMEs. The empirical results remain conflicting. Some studies suggest that equity entry modes outperform non-equity entry modes (Lu & Beamish, 2001), while other studies found that the influence of entry mode choice on performance is not clear (Brouthers & Nakos, 2004; Hollender et al., 2017). These studies conceptualised entry mode as binary: equity entry mode versus non-equity entry modes. The classification of entry mode choice as binary may be not



appropriate in the context of SMEs, as SMEs are not a smaller version of MNEs. Compared to their larger counterparts, SMEs are resource constrained, which limits their ability to choose entry modes that involve a high level of resource commitment (Ripollés, Blesa, & Monferrer, 2012). Thus, non-equity entry modes are the dominant mode of operation adopted by SMEs. Moreover, SMEs differ from their large counterparts in ownership and managerial styles (Cheng & Yu, 2008), which lead to different choices in equity-based entry modes. To be more specific, many SMEs are family-owned and/or owner-managed. These firms display great risk aversion and strong intention to maintain management control over business operations; thus they are more willing to choose wholly-owned subsidiaries rather than joint ventures (Boellis, Mariotti, Minichilli, & Piscitello, 2016; Yamanoi & Asaba, 2018). In addition, SMEs are highly sensitive to external challenges and are vulnerable to changes in market conditions and institutional/technological environment (Cheng & Yu, 2008), thereby compromising SMEs' ability to bear risk associated with resource-intensive entry modes.

The conceptualisation of SME entry mode choice as binary overlooks the critical issue of whether SMEs diversify their entry modes as a way to diversify risk in response to market and institutional challenges and ultimately improve performance (Arregle et al., 2016; Oliveira et al., 2018). In order to reflect the heterogeneous choices in entry modes, especially those among non-equity entry modes, recent studies have applied a new range of entry modes. It encompasses indirect exporting, direct exporting, contractual agreements (such as contract production, licensing and franchising), joint ventures, and wholly-owned subsidiaries. This conceptualisation of entry modes provides a better opportunity to reflect SMEs' simultaneous commitment to multiple entry modes and to capture the associated performance implications.

### **2.2.3 Combined effects of the selection of foreign market and entry mode on performance**

Internationalisation is a multifaceted phenomenon (Miller, Lavie, & Delios, 2016). Foreign market selection indicates the breadth of internationalisation, while entry mode choice suggests the depth of internationalisation. Together, the selected foreign markets and entry modes portray the multi-dimensional nature of the internationalisation process

for firms. A diversification of foreign markets and entry modes empowers firms to gain market power and access to abundant resources (Hitt et al., 2006), thereby improving their response to opportunities and challenges in rapidly changing global markets (Chung, Lee, Beamish, & Isobe, 2010). Despite the acknowledgment of the multifaceted nature of internationalisation, prior research tends to focus primarily on a single dimension and to examine its associated performance implications. Early studies used internationalisation degree, scale or depth (using measures such as the ratio of international sales to total sales, or foreign assets to total assets) to capture internationalisation. It reflects the level of a firm's international commitment and denotes its dependence on international markets. This conceptualisation is widely used, probably because of the easy access to sales data of the MNEs, most of which are listed companies. Despite its popularity in international business studies, internationalisation degree has been criticised for not being able to capture the heterogeneity of international diversification (Vachani, 1991). Other studies used internationalisation scope (e.g. the number of foreign markets) to reflect geographic dispersion of international operations across countries (Ref, 2015). These constructs can only capture one dimension of internationalisation and fail to fully reflect the multiple dimensions of the internationalisation process (Hitt et al., 2006).

Foreign market selection and entry mode choice should not be examined in isolation. Internationalisation involves a hierarchical decision-making process in which foreign market is first selected, and then entry mode choice is made based on the risk profile of the selected foreign market (Kraus et al., 2015). Operating international activities across multiple foreign markets enables firms to diversify risk arising from institutional challenges in host countries (Laufs & Schwens, 2014; Luiz, Stringfellow, & Jefthas, 2017). Decisions on foreign market selection and entry mode choice are sequential and indispensable to internationalisation. Moreover, an increase in either geographic scope or entry mode range would require great commitment of resources. Considering the scarcity of resources, a firm increasing its engagement in a wide range of foreign markets might find it difficult to increase the level of resource commitment to each of the engaged markets simultaneously. There must be a balance between geographic expansion and the variety of entry mode used for international operations. Otherwise, the firm's resource base will be stretched, which may decrease firm performance.

The operationalisation of internationalisation as a unidimensional concept in prior research provokes a methodological concern (Hennart, 2011; Marano, Arregle, Hitt, Spadafora, & van Essen, 2016; Wiersema & Bowen, 2011), which may lead to inconsistent and conflicting empirical findings regarding the internationalisation-performance relationship. The use of multidimensional conceptualisations has been encouraged in order to capture the breadth and depth of internationalisation (Miller et al., 2016). However, there is no agreement on a universal conceptualisation of internationalisation. It is recommended that the multidimensional conceptualisation of internationalisation should fit with the study's theoretical intent in order to maximise the content validity of the conceptualisation (Annavarjula & Beldona, 2000).

Another issue with extant research is that research on either geographic expansion or entry mode tends to be static in nature. Existing internationalisation literature has considered time as an implicit concept, with little explicit development in comparison with changes in foreign market and entry mode (Casillas & Moreno-Menéndez, 2014; Eden, 2009). With the development of the international entrepreneurship literature, the temporal dimension of internationalisation has received increasing attention and plays a crucial role in today's appraisal of internationalisation research (Hurmerinta-Peltomäki, 2003). The next section provides more discussion on the temporal dimension of internationalisation.

### **2.3 Shifting Research Focus to Internationalisation Temporality**

Internationalisation is a time-dependent process (Jones & Coviello, 2005). It is surprising how few studies have considered time as an essential element and examined the temporal effects of internationalisation on performance, resulting in a call for incorporating the time dimension into internationalisation models (Hitt et al., 2016; Hurmerinta-Peltomäki, 2003; McMullen & Dimov, 2013). Temporality is a time-related, multifaceted concept, including duration, timing and the temporal modalities of past, present and future (Adam, 2008; Berends & Antonacopoulou, 2014; Hilmersson et al., 2017). Duration concerns the length of time, and is closely related to the concept of speed. Speed measures the amount of progression or changes over a specific period of time. Timing concerns the specific moment at which an event occurs or an action is undertaken in relation to other events or actions. The temporal modalities of past,

present and future concern how prior experience affects the understanding of current situations and anticipation for the future. Temporality offers a way to draw causal inferences between events taking place at different times (Hernes, Simpson, & Söderlund, 2013). The actions taken in the past determine performance outcomes in the present.

The temporal dimension of internationalisation is critical to understand the magnitude of outcomes of firm internationalisation (Marano et al., 2016). However, literature on the temporal dimension of internationalisation suffers from a lack of conceptual clarity between two temporal concepts: earliness and internationalisation speed. The insufficient distinction between these temporal concepts not only prevents the research community from developing a clear understanding of performance implications of rapid internationalisation, but also hampers theoretical advancement (Hilmersson et al., 2017).

### **2.3.1 Speed in internationalisation models**

Two main research streams dominate the research on internationalisation speed: internationalisation process theory and international entrepreneurship research. Both streams view internationalisation as a process that occurs over time. However, they have divergent views on the temporal features of internationalisation, and associated performance implications. Internationalisation process theory depicts internationalisation as a slow and incremental process, by which a firm develops its international operations in gradual steps and starts with geographically or psychologically close foreign markets in order to minimise the level of uncertainty and perceived risk (Johanson & Vahlne, 1977). In contrast, scholars of international entrepreneurship observed that some firms have started internationalisation rapidly and generated performance benefits from a rapid internationalisation process, due to factors such as market homogenisation, advancements in technology and communication, and availability of entrepreneurs with a wealth of prior international experience (Oviatt & McDougall, 2005c).

Internationalisation process theory and international entrepreneurship research differ in their interpretation of time. Internationalisation process theory treats time as an implicit concept and puts more emphasis on duration (e.g. the time span between consecutive

international events). International entrepreneurship research considers time as an explicit concept and pays more attention to the timing of internationalisation in relation to the date a firm was founded. Accordingly, these two research streams focus on different stages of the internationalisation process. Internationalisation process theory focuses more on the post-entry stage, while international entrepreneurship theory focuses on the pre-entry stage. In order to reconcile conflicting views regarding the performance effect of internationalisation speed, it is necessary to make a clear distinction between earliness and post-entry internationalisation speed.

### **2.3.2 Pre-entry internationalisation speed: Earliness**

As the first temporal concept to capture the temporality of internationalisation in the literature of international entrepreneurship, earliness has received a significant amount of research attention. It is measured through the time elapsed between a firm's foundation and its first international venture (Oviatt & McDougall, 2005c). The concept of earliness was proposed to distinguish a specific type of firm, usually labelled Born Global or International New Ventures', from those that follow an incremental internationalisation process. International new ventures seek to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries right from their inception (Oviatt & McDougall, 2005c). Existing research on early internationalisation mainly focuses on its antecedents, while research on its performance implications is fragmented. More details are provided in the following two subsections.

#### ***Antecedents to early internationalisation***

Early internationalisation is considered as an entrepreneurial process, which is inspired by entrepreneurs' prior international experience (Autio et al., 2000; Oviatt & McDougall, 2005b; Zucchella, Palamara, & Denicolai, 2007). Entrepreneurs' prior experience may serve as a firm's initial knowledge base, upon which the firm can leverage to efficiently absorb new knowledge (Bruneel, Yli-Renko, & Clarysse, 2010). Thus, entrepreneurs' prior international experience enhances a firm's ability to learn (Cohen & Levinthal, 1990). In addition, entrepreneurs' prior international experience affects their alertness to opportunities. The entrepreneurship literature suggests that

opportunities exist due to information asymmetry. Discovery of opportunities is through recognition of the value of new information, rather than systematic searches (Shane, 2000). Entrepreneurs' prior international experience affects their alertness to international opportunities through directing attention to specific fields (Evers & O'Gorman, 2011). Moreover, entrepreneurs' prior international experience influences their ability to assemble resources to explore opportunities in markets (Arentz et al., 2013; Shane, 2000). This is consistent with the findings of Helfat and Lieberman (2002) that entrepreneurs' prior experience can reduce the gap between pre-entry resources and the required resources for foreign market entry, which subsequently affects the likelihood and success of entry.

Prior research also suggests that entrepreneurs' social ties tend to contribute to early internationalisation. Entrepreneurs' social ties provide information and resources that are necessary for market entry, thereby reducing entrepreneurs' concern about feasibility and desirability of market entry and accelerating the entry process (Domurath & Patzelt, 2016). The more heterogeneous entrepreneurs' social ties, the more diverse information about foreign markets can be acquired through networks, and the more likely entrepreneurs will initiate early internationalisation (Lans, Blok, & Gulikers, 2015). In addition, with the help of entrepreneurs' social ties, early internationalisers are able to quickly and proactively build and exploit relationships with the right business partners (Johanson & Vahlne, 2009; Schwens & Kabst, 2009). First foreign market entry, especially at a young age, has inherent liabilities of foreignness and outsidership (Muzychenko & Liesch, 2015). Being embedded in networks increases the firm's international exposure by providing opportunities for observing others in the field and imitating their international behaviours (Fernhaber & Li, 2013). Prior studies suggest that firms tend to follow their network relationships when entering foreign markets (Holm, Johanson, & Kao, 2015; Yu, Gilbert, & Oviatt, 2011) and even imitate the entry modes of the peers in their network (Oehme & Bort, 2015). Moreover, learning through observing the actions and results of others can be less costly and quicker in comparison to learning from one's own experience (Casillas, Barbero, & Sapienza, 2015; Huber, 1991).

In addition, strong entrepreneurial orientation displayed by firms also stimulates early internationalisation (Knight & Cavusgil, 2004), since it empowers the firms with

entrepreneurial capabilities to pursue opportunities in foreign markets (Brouthers, Nakos, & Dimitratos, 2015; Engelen, Gupta, Strenger, & Brettel, 2015) and balance the costs and risks associated with foreign market entry. Entrepreneurial orientation refers to a set of entrepreneurial behaviours characterised as being innovative, risk-taking and proactive (Dai, Maksimov, Gilbert, & Fernhaber, 2014). Innovation in technology and business model enhances the firm's learning ability (Rhee, Park, & Lee, 2010), productivity (Siedschlag & Zhang, 2014), and subsequently the performance (Camisón & Villar-López, 2014). Proactive firms are more likely to pursue first-mover advantages (Morgan, Anokhin, Kretinin, & Frishammar, 2015) and be more sensitive to changes in customer demands (Morris, Webb, & Franklin, 2011). Risk-taking propensity improves firms' tolerance of risks and uncertainty, subsequently influencing firms' commitment to international markets (Pérez-Luño, Wiklund, & Cabrera, 2011).

### ***Performance implications of early internationalisation***

The performance implications of early internationalisation has become a central topic in international entrepreneurship research (Oviatt & McDougall, 2005a; Zahra, 2005). However, it is interesting to find that most studies applied the concept of earliness as a sampling criterion to identify their research targets and rarely considered it as an explicit variable in the modelling analysis of interest (Hilmersson et al., 2017; Zhou & Wu, 2014). Moreover, the international entrepreneurship literature is inconclusive regarding the criteria for earliness (Baum et al., 2015), which hampers theoretical advancement in research on early internationalisation. The thresholds for early internationalisation vary extensively from one year, three years (Knight & Cavusgil, 2004), to six years (Fernhaber, Gilbert, & McDougall, 2008).

In order to explore the performance effect of being born global, some studies include the age at foreign entry as a variable in their models and test its role in heterogeneous samples including both Born global/International new venture and traditional/gradually internationalising firms. However, the findings remain inconclusive. Some researchers stated that early internationalisation positively contributes to firm performance (Zhou & Wu, 2014). Early entry empowers firms with first- and fast- mover advantages in terms of choosing a good location, establishing a customer base that is unclaimed by competitors, and developing relationships with local suppliers (Autio et al., 2000; Lu &

Beamish, 2006). In contrast, other studies argued for the wisdom of delaying internationalisation, which allows firms to assemble resources and experience (Khavul, Pérez-Nordtvedt, & Wood, 2010). Entry into a foreign market requires an irreversible commitment of resources. Early internationalising firms have to make decisions with a high level of uncertainty due to the limited information and learning opportunities (Sapienza et al., 2006). The success of early foreign market entry depends on the firm's ability to balance the associated costs and benefits (Hawk, Pacheco-De-Almeida, & Yeung, 2013), which is determined by the heterogeneous intrinsic resources and capabilities. The inconclusive results regarding the performance effect of early internationalisation echo theoretical conflicts between internationalisation process theory and international entrepreneurship research (Oviatt & McDougall, 2005a; Zahra, 2005). The internationalisation process theory argues for a slow and gradual internationalisation process because of its emphasis on path-dependent learning, while the international entrepreneurship research suggests that managerial prior experience, social and business ties, and international orientation can act as the alternatives to organisational learning that could be rather time-consuming.

### **2.3.3 Post-entry internationalisation speed and its distinction from earliness**

Literature on the temporality of internationalisation proposes two temporal concepts: earliness and internationalisation speed (Zhou & Wu, 2014). Empirical studies tend to use these two concepts interchangeably (Hilmersson et al., 2017), leading to the conflicting findings on performance implications of rapid internationalisation. However, there is a clear distinction between earliness and internationalisation speed. The concept of earliness captures the timing of firm internationalisation in relation to the firm's founding, while the concept of internationalisation speed indicates the relation between the internationalisation process and time (Acedo & Jones, 2007; Casillas & Acedo, 2013; Jones & Coviello, 2005). The concept of earliness focuses on the pre-internationalisation stage rather than the internationalisation process itself. It provides a narrow view of the dimensionality and complexity regarding temporality involved in internationalisation (Chetty et al., 2014). A narrow focus on the pre-internationalisation period leads to a neglect of the speed at which firms expand their operations across multiple markets after the first international sales (Prashantham & Young, 2011), and results in failure to examine changes in breadth and depth of internationalisation



(Casillas & Acedo, 2013). In addition, factors influencing post-entry speed are likely to be different from those during the pre-entry stage (Prashantham & Young, 2011). In the pre-entry stage, SMEs tend to depend on entrepreneurs' prior experience and social networks to enter foreign markets (Jing, Pek-Hooi, & Poh-kam, 2011). In the post-entry period, firms must put effort into acquiring new customers, developing new networking relationships, and accumulating new resources in order to sustain rapid internationalisation (Oviatt & McDougall, 2005c).

To some extent, earliness may have an influence on post-entry internationalisation speed. Early internationalisation involves development of capabilities relevant to internationalisation, thereby influencing the post-entry internationalisation speed (Adner & Helfat, 2003). Internationalisation requires development of new resources and capabilities. Early internationalisation empowers firms with the flexibility to develop internationalisation capabilities; they are able to change and modify their routines as a result of internationalisation experiences (Sapienza et al., 2006). Compared to later internationalisers, early internationalisers enjoy some advantages in terms of capability development, since they do not need to dismantle organisational routines that are built for domestic markets. In contrast, later internationalisers face stronger inertial forces. Therefore, intensive and repeated processing is required to deconstruct their existing rigid routines (Autio et al., 2000). This process requires the commitment of significant time and resources, and thus incurs costs. Moreover, late internationalisers are usually reluctant to give up their established routines for domestic markets (Jain, 2016). Thus, late internationalisers have to develop separate routines for international business. This recurrent learning and unlearning process can lead to a lower speed of international expansion (Hilmersson et al., 2017).

In summary, a significant amount of research attention has been paid to examining antecedents and outcomes of early internationalisation, as earliness is the first temporal concept proposed in the literature of international entrepreneurship. On the other hand, research on the speed at which a firm's internationalisation process continues after its first international activity still requires further attention. The analysis of post-entry internationalisation speed can enrich the understanding of internationalisation as a process over time. The following section provides a review of current research on post-entry internationalisation speed.

## **2.4 Existing Research on Post-Entry Internationalisation Speed**

After the first foreign market entry, post-entry internationalisation speed is still highly important for firms. That is because variation in speed leads to changes in development and deployment of firm resources, which influences the firm's survival and performance (Wagner, 2004). In the post-entry stage, efforts must be made to diversify both foreign markets and entry modes in order to spread risks arising from foreign markets and costs arising from various international operations and product innovation (Luiz et al., 2017; Prashantham & Young, 2011). International diversification requires intensive resource commitment and efficient resource deployment (Wagner, 2004). The performance of rapid internationalisation after first foreign market entry depends on the balance between firm resources and strategies of international diversification. Post-entry internationalisation speed is even more influential on SME performance, since they tend to have scarce resources and need to use them efficiently. Explosive international growth might become a destabilizing factor for internationalising SMEs, since their scant resources and capabilities are stretched and challenged during this process (Chetty & Campbell-Hunt, 2003).

Despite the importance of post-entry internationalisation speed, the research on post-entry speed is still in its infancy and its conceptualisation has stagnated at the theoretical level. The following section discusses the definition and operationalisation of post-entry internationalisation speed and research gaps in the existing research.

### **2.4.1 Conceptualisation of post-entry internationalisation speed**

Speed refers to quickness in moving or making progress from one place to another. Speed has two components: the progress or variation within a particular dimension and the length of time. Accordingly, post-entry internationalisation speed indicates the relation between the changes in certain dimensions of internationalisation and a specific period of time. The analysis of time in the international business research can be either short term or long term. Short term analysis focuses the time span between two consecutive international events (Casillas & Moreno-Menéndez, 2014; Chen & Yeh, 2012), while long term analysis considers a longer period, such as several decades and/or the entire firm lifespan (Hilmersson & Johanson, 2016). The second component

of speed concerns the change or progression in dimensions of internationalisation. Oviatt and McDougall (2005a) propose to measure internationalisation speed through two key dimensions of internationalisation: level of resource commitment and geographic scope. However, they have not articulated how to operationalise the concept of internationalisation speed. Following the pioneering conceptual framework proposed by Oviatt and McDougall (2005a), Casillas and Acedo (2013) provide a clear and multidimensional definition and operationalisation of internationalisation speed. Three dimensions of internationalisation speed have been proposed by Casillas and Acedo (2013): (1) speed of international growth; (2) speed of increased commitment of resources to foreign activity; and (3) speed of growth in breadth of international markets.

The first two dimensions refer to the change in internationalisation depth over a specific period of time, while the third indicates the change in internationalisation breadth over a specific period of time. Internationalisation depth, also known as the degree or extent, refers to the level of a firm's commitment to its internationalisation process. Several indicators have been proposed in international business research to measure the level of a firm's international commitment. The most widely used indicator is the proportion of sales derived from international markets (Denicolai, Zucchella, & Strange, 2014; Ren, Eisingerich, & Tsai, 2015; Xiao, Jeong, Moon, Chung, & Chung, 2013). Other indicators include the ratio of foreign assets to total assets (Lu & Beamish, 2004; Sullivan, 1994), the proportion of workers employed in foreign countries (Chetty et al., 2014), and the number of subsidiaries established abroad (Yang et al., 2017). It is worth noting that these indicators of a firm's international commitment are more suitable for research on multinational enterprises, but less practical for research on less internationally developed and committed firms. Entry modes including indirect exporting, direct exporting, contractual agreements, joint ventures, and wholly-owned subsidiaries require different levels of resource commitment to foreign markets. Thus, the range of entry modes adopted by a firm during internationalisation can also be used to reflect the level of its international commitment (Casillas & Acedo, 2013).

Internationalisation breadth refers to the geographic dispersion. It can be measured by the number of foreign markets where a firm conducts its international operations (Dai et al., 2014), the geographical diversification of a firm's international sales (Ref, 2015), or

the mean physical or cultural distance between host countries and home country (Zhang, Li, Li, & Zhou, 2010).

In empirical studies on internationalisation, each indicator discussed above has been adopted alone to measure internationalisation. Despite the common adoption of unidimensional measures in relevant research, this measure has been criticised as misrepresenting the depth and breadth of internationalisation, and therefore multidimensional measures are recommended (de Jong & van Houten, 2014; Sullivan, 1994). From a theoretical and methodological perspective, this study considers internationalisation speed as a latent variable and measures it by two indicators: (1) the average number of entry modes adopted by a firm per year since internationalisation; and (2) the average number of foreign markets to which a firm exports or in which the firm has made investments per year since internationalisation. This is supported by Chetty et al. (2014) who operationalise internationalisation speed as a multidimensional variable and empirically validate two indicators with high loadings for it, namely speed of geographic scope and speed of diversifying entry modes used in international operations. These two indicators accurately and sufficiently reflect the internationalisation process and provide an opportunity to examine the combined effect of diversification of foreign markets and entry mode on performance. Furthermore, the analysis of time from the long-term perspective provides an opportunity to examine the whole internationalisation process rather than only the start or certain stages of the process.

#### **2.4.2 The mechanism of internationalisation speed**

Despite some advancements in the conceptualisation of internationalisation speed, this line of research still has serious shortcomings and the study of post-entry speed is still in its infancy. The survival and growth of internationalising firms in foreign markets after initial internationalisation requires the development of new capabilities to overcome the liabilities of newness, foreignness and outsidership (Johanson & Vahlne, 2009; Sui & Baum, 2014). Existing research has identified time compression diseconomies (TCD) and learning advantages of newness (LAN) as two mechanisms that affect the processes of learning and capability development (Autio et al., 2000; Hilmersson & Johanson, 2016; Jiang et al., 2014). They have different implications for performance outcomes.

Time compression diseconomies is an important isolating mechanism identified in the capability development process. It suggests that capability development should not be rushed. High costs will be incurred if a firm develops its resources and capacities too fast (Knott, Bryce, & Posen, 2003). Internationalisation requires exploitation of existing resources and capabilities as well as development of new ones. Rapid diversification of either geographic scope or entry modes requires a significant amount of resource commitment and development of heterogeneous capabilities within a short time span, which incurs high costs and degrades performance (Jiang et al., 2014). The negative influence of TCD on performance is more prominent in the early stage of internationalisation, when information about the foreign market is incomplete and uncertainty is high due to distinctive institutional contexts (Jiang et al., 2014). Internationalisation process theory puts a heavy emphasis on TCD.

In contrast, the international entrepreneurship literature embraces the concept of learning advantages of newness. Based on the assumption that different capabilities are required for doing business in foreign markets in comparison to the domestic market, LAN suggests that early and rapid internationalisation enables the firm to enjoy some advantages in development of capabilities that are conducive to internationalisation (Autio et al., 2000). Firms that internationalise early and rapidly have fewer existing routines and face fewer competence traps in comparison to later internationalisers, which are deeply entrenched in existing routines built for domestic markets (Sapienza et al., 2006). The LAN argument has been employed as the theoretical foundation in most studies of rapid internationalisation.

However, the LAN assumption has been criticised recently (Zahra et al., 2018). First, it neglects the usefulness of existing routines for domestic markets to help internationalising firms achieve legitimacy and improve efficiency in international operations, especially when there are some institutional similarities between home and host countries (Furuya, Stevens, Bird, Oddou, & Mendenhall, 2009). The learning ability developed in the domestic market may facilitate adaptation of established firms to foreign markets. Second, it overlooks the time and cost associated with development of capabilities. Capability development depends on deliberate learning, which requires significant investment in knowledge acquisition, articulation and codification (Zollo & Winter, 2002). Third, it underestimates the hostility of business environments in foreign

markets, which may magnify the failure rate for early internationalisers (Meschi et al., 2017; Mudambi & Zahra, 2007). Fourth, it neglects the effect of prior experience on the realisation of advantages in terms of capability development. Due to the liabilities of newness and foreignness, early and rapid internationalisers have no clear direction for information seeking. Firms have to learn through trial and error. It is necessary to examine the contingent nature of LAN.

### **2.4.3 Recent research on performance implications of post-entry internationalisation speed**

Based on the LAN and TCD arguments, some studies attempt to reconcile the conflicting views on the performance implications of rapid internationalisation by examining the curvilinearity of the relationship (Hilmersson & Johanson, 2016; Jiang et al., 2014; Wagner, 2004). However, as indicated in **Table 2-1**, the empirical findings remain inconsistent. To be more specific, Jiang et al. (2014) find a negative relationship between speed and survival, but no significant relationship between internationalisation speed and performance. In contrast, Wagner (2004) finds an inverted-U relationship between speed and performance. Meanwhile, Hilmersson and Johanson (2016) provide mixed findings on relationships between speed and performance. A few other studies examined the contingent nature of the curvilinear relationship between speed and performance (García-García et al., 2017; Mohr & Batsakis, 2017; Yang et al., 2017). Based on the resource-based and knowledge-based views, these studies highlight the influence of intangible resources, such as technological knowledge and prior international experience, on the curvilinearity of the relationship. Despite their efforts to reconcile the inconsistent findings regarding the performance implications of rapid internationalisation, there are still some shortcomings.

First, existing research on post-entry internationalisation speed lacks a capability-based view. Existing studies put more focus on the interaction of knowledge and experience (García-García et al., 2017; Mohr & Batsakis, 2017). However, knowledge and experience are static resources and thus have only limited ability to explain firms' competitive advantages and performance in a dynamic environment (Priem & Butler, 2001). The keys to growth and survival in rapidly changing international markets are accumulating the necessary amount of resources and developing heterogeneous

capabilities (Autio et al., 2011; Sui & Baum, 2014). Inconsistent with the LAN and TCD arguments, the mechanism that underlies rapid internationalisation is learning and capability development. Possession of static resources is not sufficient for sustainable growth. The value of existing resources depreciates in the light of external changes. In order for the firm to maintain sustainable growth and survival, dynamic capabilities that can alter its existing resource base in relation to external changes are required, so that the firm is able to reconfigure and deploy internal and external resources to address challenges in the external environment (Autio et al., 2011; Khan & Lew, 2018; Sapienza et al., 2006). These capabilities are different from those needed for daily business operations (Teece, 2007). Thus, it is necessary to identify which specific capabilities are pivotal to explain the heterogeneity in performance implications of rapid internationalisation.

Second, extant studies only focus on a single dimension of speed in either internationalisation breadth (e.g. number of foreign markets) or depth (e.g. the number of subsidiaries). So far, no studies have tried to examine the combined effect of speed in both dimensions of internationalisation on performance. As argued in Section 2.2, internationalisation has multiple facets. Strategy development for internationalisation is a hierarchical process, in which a foreign market is first selected, then an entry mode choice is made based on the risk profile of the selected foreign market (Kraus et al., 2015). The increase in geographic expansion and range of entry modes provides firms with opportunities to diversify risks arising from changes in market conditions and institutional challenges in the host country (Laufs & Schwens, 2014; Luiz et al., 2017). Meanwhile, costs are incurred along with diversification of foreign markets and entry modes, which may have performance implications for the firm. Thus, it is necessary to consider growth in both dimensions of internationalisation when examining the performance implications of speed.

Third, existing studies primarily examine the influence of firm-level factors and neglect the role managers or owners play in the post-entry stage. International entrepreneurship research suggests that human and social capital possessed by entrepreneurs and managers affect the identification and creation of opportunities, as well as the orchestration of resources and generation of new capabilities to seize the promising opportunities (Arentz et al., 2013; Bhagavatula, Elfring, van Tilburg, & van de Bunt,

2010; Eggers & Kaplan, 2009; Helfat & Peteraf, 2015; Herrmann & Nadkarni, 2014; Oyson & Whittaker, 2015). After initial entry, the influence of managers or owners on internationalisation speed continues (Khan & Lew, 2018), especially in the context of SMEs. However, little is known about whether and how managerial factors influence speed and performance in the post-entry stage.

Internationalisation exposes firms to uncertainty and risk arising from rapid changes in foreign markets. Survival and growth in competitive environments requires firms to keep renewing resource bases, adjusting existing routines and generating new capabilities (Sapienza et al., 2006). The dynamic capabilities perspective provides an appropriate lens to investigate the temporal dimension of internationalisation, since this perspective emphasises timely responses to the ever-changing challenges and opportunities in an uncertain business environment through integration of resources and generation of new capabilities (Al-Aali & Teece, 2014). The following section provides a detailed review of dynamic capability theory.



**Table 2-1 Main empirical studies on the internationalisation speed-performance relationship**

<b>Authors</b>	<b>Research context</b>	<b>Operationalisation of speed</b>	<b>Moderators</b>	<b>Performance</b>	<b>Key findings</b>
Yang et al. (2017)	MNEs	The average number of established foreign subsidiaries per year.	Industrial globalisation	ROA; Survival rate.	Nonlinear.
Mohr et al. (2017)	MNEs	The average number of foreign outlets divided by the number of years since MNEs' first international expansion.	Geographic scope; International experience	ROA and ROE	Nonlinear.
García-García et al. (2017)	MNEs	The number of new countries that a MNE had entered through FDI as of a given year divided by the number of years elapsed since its first foreign market entry.	Technological knowledge; International experience	Tobin's q	Nonlinear.
Hilmersson et al. (2016)	SMEs	The average growth in the number of foreign markets exported to;  The average growth in the ratio of export sales to total sales;  The average growth in the ratio of the firm's assets held abroad;	None	Return on total assets (ROTA)	Mixed.
Jiang et al. (2014)	MNEs	The time interval between the date of establishment of the focal subsidiary and that of a previous subsidiary.	None	Survival of subsidiaries; Profitability	Not significant.

Chang et al. (2011)	MNEs	The average number of foreign manufacturing subsidiaries in new countries divided by the number of years since the firm's first international expansion.	Tangible and intangible resources; Industrial globalisation	Return on invested capital (ROIC)	Not significant.
Wagner (2004)	MNEs	Change in foreign sales to total sales ratio	None	Cost efficiency	Nonlinear.

## 2.5 Dynamic Capability Theory

Since the 1990s, the emergence of SMEs in the global market has attracted research attention to how SMEs with limited resources engage in international operations (Oviatt & McDougall, 1994). The Resource-Based Theory (RBT) is an influential framework that examines firm resources and capabilities as the sources of competitive advantage (Barney, 1991; Penrose, 1959). This perspective complements the traditional emphasis on the firm's position in a certain industry vis-à-vis its competitors and suppliers as the determinants of competitive advantage (Teece et al., 1997). RBT focuses on internal forces and emphasises building competitive advantage through capturing entrepreneurial rents, which stem from fundamental firm-level efficiency advantages. In particular, RBT assumes that the firm can be considered as bundles of resources, which are heterogeneously distributed and not easily transferred between firms (Barney, 1991; Barney, Ketchen, & Wright, 2011). Those resource differences persist over time (Amit & Schoemaker, 1993). The endowment of resources and capabilities provides firms with the basis to implement strategies (Barney, 1991; Filatotchev & Piesse, 2009; Wernerfelt, 2013). Differences in firms' possession and combination of their resources and capabilities lead to development and implementation of different strategies (Barney, Wright, & Ketchen Jr, 2001).

RBT aims to identify the resources and capabilities that enable a firm to attain a level of performance that cannot easily be matched by competitors (Armstrong & Shimizu, 2007). Following RBT, in order to be strategic for achievement of superior performance, any resources or capabilities must possess the features of being valuable, rare, inimitable and non-substitutable. The value and rarity of resources help firms build competitive advantages and generate economic returns, while inimitability and non-substitutability function as isolating mechanisms and extend the duration of competitive advantages (Nason & Wiklund, 2018).

However, RBT also has its limitations. It is considered to be essentially static in its nature and inadequate to explain firms' competitive advantage in a dynamic environment (Priem & Butler, 2001). The frequent and discrete environmental shifts in competitive, technological, social and regulatory domains have driven firms to constantly renew and diversify their capabilities to sustain their competitive advantage.

Static resources and operational capabilities are not sufficient for growth (Khan & Lew, 2018). It has been indicated that the capability of deploying and reconfiguring existing resources is essential for firm survival and growth in rapidly changing environments, such as internationalisation. Dynamic capability theory, encapsulating the evolutionary nature of resources and capabilities in relation to environmental changes, is proposed to enhance RBT (Eisenhardt & Martin, 2000; Teece et al., 1997).

Dynamic capability theory has evolved from RBT (Teece et al., 1997). It aims to explain the differences between firms in adaptation to external environments (Barrales-Molina, Martínez-López, & Gázquez-Abad, 2014). Teece et al. (1997, p. 516) initially defined dynamic capabilities as “the firm’s ability to integrate, build and reconfigure internal and external competence to address rapidly changing environments”. A growing body of literature has provided a large array of distinct conceptualisations. Over the years, this pioneering conceptualisation has been revised, developed and extended. **Table 2-2** illustrates the most generally accepted conceptualisations of dynamic capabilities. Despite a diversity of conceptualisations of dynamic capabilities, several main elements that highlight the major theoretical underpinnings have been repeatedly stated in those conceptualisations: the nature of dynamic capability, the creation and development process, relevant external context and outcomes.

**Table 2-2 Definitions of dynamic capabilities**

<b>Author</b>	<b>Date</b>	<b>Definition of Dynamic Capabilities</b>
Teece et al.	1997	“We define dynamic capabilities as the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments.” (p. 516)
Eisenhardt & Martin.	2000	“The firm’s processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change. Dynamic capabilities thus are the organisational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die.” (p. 1107)

Zollo & Winter	2002	“A dynamic capability is a learned and stable pattern of collective activity through which the organisation systematically generates and modifies its operating routines in pursuit of improved effectiveness.” (p. 340)
Winter	2003	“Those (capabilities) that operate to extend, modify, or create ordinary capabilities.” (p. 991)
Teece	2007	“For analytical purposes, dynamic capabilities can be disaggregated into 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.” (p. 1319)
Wang & Ahmed	2007	“We define dynamic capabilities as a firm’s behavioural orientation constantly to integrate, reconfigure, renew and recreate its resources and capabilities and, most importantly, up-grade and reconstruct its core capabilities in response to the changing environment to attain and sustain competitive advantage.” (p. 35)
Barreto	2010	“A dynamic capability is the firm’s potential to systematically solve problems, formed by its propensity to sense opportunities and threats, to make timely and market-oriented decisions, and to change its resource base.” (p. 271)

### 2.5.1 Nature of dynamic capabilities

Dynamic capabilities have been defined as the abilities (or capacities) that are strategic and distinct from ordinary capabilities (Helfat, 2007; Teece et al., 1997; Winter, 2003). Ordinary capabilities (also known as zero-level capabilities) are defined as “doing things right” in the core business functions of operations, administration and governance, whereas dynamic capabilities (also known as high-level capabilities) refer to building and renewing resources and ordinary capabilities, reconfiguring them as needed to innovate and respond to changes in the market (Teece, 2014b; Winter, 2003).

Dynamic capabilities have also been defined as processes or routines (Barreto, 2010). Eisenhardt and Martin (2000) state that dynamic capabilities consist of identifiable, specific processes or routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve and die. Similarly, Zollo and Winter (2002) define dynamic capabilities as “a learned and stable pattern of collective activity through which the firm systematically generates and modifies its operating routines in a pursuit of improved effectiveness” (p. 340).

The literature has divergent views on the heterogeneity of dynamic capabilities. Considering the path-dependent nature of the development process, a stream of literature emphasises the idiosyncratic nature of dynamic capabilities that are specific to each firm and context (Teece et al., 1997). In contrast, another stream asserts that dynamic capabilities display common features, suggesting that dynamic capabilities take on the shape of best practices and simple rules as decision-making heuristics (Bingham & Eisenhardt, 2011; Eisenhardt & Martin, 2000; Rockart & Dutt, 2015). Following the second stream, commonalities can still emerge as a result of the existence of multiple effective ways to perform business tasks, and the commonalities are ascribed to development of dynamic capabilities (Barreto, 2010). On the other hand, researchers suggest that, despite the commonalities, significant competitive advantages are still possible due to the heterogeneity in experience, timing and the external environment (Peteraf, Di Stefano, & Verona, 2013).

### **2.5.2 Creation and development process**

The epistemological roots of dynamic capabilities lie in organisational routines, which have been considered the building block of capabilities (Arndt & Pierce, 2018; Barney et al., 2001). Routines are defined as the recurring action patterns that act as standard solutions and are enacted in response to environmental stimuli (Laureiro-Martinez, 2014). Routines can coordinate the actions of individuals or organisational units, serve as organisational memory and help build knowledge stock. Routinization simplifies the recurrent tasks of information processing, which allows for the rapid processing of large amounts of information with little effort (Laureiro-Martinez, 2014). Organisational routines have been considered a source of flexibility and change (Feldman & Pentland, 2003) as routines have a tendency to change over time (Rerup & Feldman, 2011). As

the micro-foundation, the creation and development of dynamic capabilities depend on the underlying routines that actually change (Pentland, Feldman, Becker, & Liu, 2012; Winter, 2003). Prior research has proposed two micro approaches to examining the evolution of organisational routines: the action-based approach and the cognition-based approach.

### ***Action-based approach***

The creation of organisation routines relies on actions that are repeated over time (Abell, Felin, & Foss, 2008; Felin & Foss, 2011). Repeated actions have been considered a fruitful basis for empirical research on organisational routines (Pentland et al., 2012). As the main input of routines, actions are taken by firms as a response to a variety of internal and external stimuli. Actions lead to learning benefits. According to organisational learning theories, firms are more likely to learn from actions that are repeated frequently (Brauer, Mammen, & Luger, 2017). Repetition enhances firms' understanding of causal linkages between the actions they take and the performance outcomes they achieve (Zollo & Winter, 2002). Moreover, repetition is helpful for firms to identify common traits among past experiences, which may be candidates for routinization (Castellaneta & Zollo, 2015). As such, an increased frequency with which actions of a similar nature are repeated is positively related to the formation of organisational routines (Castellaneta & Zollo, 2015).

In addition to repeated actions, variation and selective retention have been identified as another two crucial mechanisms that drive routines to evolve (Pentland et al., 2012). Variation is often triggered by the perceived organisational problems related to existing routines. Theoretically and empirically, sources of variation can be managerial discretion, inertia in existing routines, and social interactions between individuals and external environments (Winter, 2013; Yi, Knudsen, & Becker, 2016). Variation helps the firm adapt its existing routines to achieve better performance. Selective retention involves evaluating the outcome of a particular iteration and deciding which of the repetitive experiences should be incorporated into the on-going routines (Durand, 2006). Prior studies propose that variation is more important in a moderately dynamic market, while selection is more relevant in a high-velocity market (Barreto, 2010; Eisenhardt & Martin, 2000). The dynamic interaction of variation and selective retention processes

involving knowledge creation and change over time can lead to the development of new superior routines and capabilities (Lewin, Massini, & Carine, 2011).

Through the influencing mechanisms of repetition, variation and selective retention, actions taken by firms can create and refine their organisational routines, which subsequently lead to creation and evolution of dynamic capabilities. Empirically, Rockart and Dutt (2015) have developed and estimated a formal model of capability development in the context of equity underwriting by investment banks. This study confirmed that cumulative and repeated actions affect the rate of and potential for capability development.

### ***Cognition-based approach***

In contrast to the action-based approach, the cognition-based approach explains how human conduct in terms of mental states influences the creation and development of organisational routines (Arndt & Pierce, 2018; Grégoire, Corbett, & McMullen, 2011). As Teece (2007) disaggregates dynamic capabilities into capacities of “sensing”, “seizing”, and “reconfiguring”, he acknowledges managerial cognition as the micro-foundation of dynamic capabilities. However, to date, the cognitive underpinnings of dynamic capabilities remain largely unexplored (Eggers & Kaplan, 2013). Little research attention has been directly paid to the influence of mental models and mental activities, such as information acquisition and processing, on creation and development of organisational routines.

Managerial cognition is a mechanism through which organisational routines are transformed into capabilities (Eggers & Kaplan, 2013). On the one hand, managerial cognition shapes the focus of attention and influences the interpretation of external challenges and opportunities (Chaston & Sadler-Smith, 2012; Plambeck, 2012), which subsequently affects how managers or owners assemble and reconfigure available organisational routines to address external challenges (Marcel et al., 2011). On the other hand, based on their cognitive frames, managers or owners interpret the value and usefulness of organisational routines deployed to address external challenges (Autio et al., 2011). Their interpretation then influences the modification of existing routines and selection of new ones (Eggers & Kaplan, 2013). The process of organising actions to



address external challenges and opportunities, and the cognitive comprehension developed during this process, help managers decide which actions should be encoded into organisational routines, and which organisational routines should be integrated in what sequence.

The cognitive comprehensive process is subject to external environments (Autio et al., 2011). In conjunction with cognitive limitations, a high level of uncertainty caused by rapid changes in external contexts imposes challenges on the cognitive comprehension process, since the cause-effect relationship between deployment of organisational routines and their outcomes is ambiguous in a highly uncertain business environment. Rapid changes in external environments increase the degree to which managers take improvised actions to develop new ways to do business (Abrantes, Passos, Cunha, & Santos, 2018; Hmieleski, Corbett, & Baron, 2013). The deviation from existing routines may lead to adaptation of existing organisational routines.

### **2.5.3 Relevance of external context**

Dynamism of the external environment has been identified as an influential factor for development and evolution of firm capabilities. Environmental dynamism is defined as the rate at which competition, customer preferences and technology change within an industry (Eisenhardt & Tabrizi, 1995). Highly dynamic environments are characterised by rapid and discontinuous changes, while stable dynamic environments feature infrequent changes; in the middle lie moderately dynamic environments with regular changes that occur along predictable and linear paths (Schilke, 2014). The conceptualisations of dynamic capabilities have encompassed environmental dynamism. In an early work, Teece et al. (1997) highlighted the intrinsic link between dynamic capabilities and external environments by stating that the purpose of renewing firm competence is to achieve congruence with the rapid changes in the business environment. Later, Teece (2007) reinforced that link by advocating that “dynamic capabilities are especially relevant to firm performance in business environments that are open to international commerce and fully exposed to opportunities and threats; where technical change is systematic; where the global markets for the exchange of goods and services are well-developed; where the markets for technological and managerial knowledge are poorly developed” (p. 1320).

The effectiveness of dynamic capabilities is dependent on the dynamism of the external environment (Zahra, Sapienza, & Davidsson, 2006). However, researchers have divergent views regarding the impact of environmental dynamism on the performance effects of dynamic capabilities. Some researchers have argued for high environmental dynamism as the driving force for the effectiveness of dynamic capabilities (Teece, 2007; Teece et al., 1997; Zollo & Winter, 2002). The dynamism of external environments makes existing products and services obsolete and requires new ones to be developed (Teece, 2007). In contrast, some have contended that dynamic capabilities would perform better in moderately dynamic rather than stable or highly dynamic environments (Eisenhardt & Martin, 2000; Schilke, 2014; Wilhelm, Schlömer, & Maurer, 2015). In a highly dynamic environment, dynamic capabilities take the shape of simple, experiential and unstable processes, which lead to unpredictable outcomes (Peteraf et al., 2013). Highly dynamic environments with their unpredictable status and demand for novel actions pose distinct challenges to the effectiveness of dynamic capabilities. Matching unfamiliar situations with organisational changes proves difficult and may lead either to unresponsiveness or normalization and, in turn, implementation of inappropriate responses (Schilke, 2014).

#### **2.5.4 Outcomes**

Early studies on dynamic capabilities suggest a direct and positive influence on performance (Fainshmidt, Pezeshkan, Lance Frazier, Nair, & Markowski, 2016; Teece et al., 1997; Zollo & Winter, 2002). In contrast, other studies reject the theoretical assumption of a direct and positive link between dynamic capabilities and firm performance (Eisenhardt & Martin, 2000; Zott, 2003). They argue that dynamic capabilities are necessary, but not sufficient, conditions for firms to build long-term competitive advantages. Development of dynamic capabilities requires long-term significant resource commitments (Winter, 2003). When wrong action-outcome assumptions are made or when there are alternative ways to achieve similar outcomes, the development of dynamic capabilities may damage rather than improve firm performance (Winter, 2003). This view highlights the necessity of specifying boundary conditions for the role of dynamic capabilities (Barreto, 2010). Some studies have started to examine the influence of internal factors, such as organisational structure and firm size, on performance implications of dynamic capabilities (Qaiyum & Wang, 2018;

Wilden, Gudergan, Nielsen, & Lings, 2013). These studies highlight the influence of internal alignment between organisational factors and dynamic capabilities for performance outcomes.

### **2.5.5 Dynamic capabilities as a theoretical foundation in research on post-entry speed**

The application of dynamic capabilities as a theoretical lens provides opportunities to address existing gaps in the literature regarding internationalisation in general and post-entry internationalisation speed in particular. First, the conceptualisation of dynamic capability as high-level routines provides an opportunity to examine the development of dynamic capabilities in the post-entry stage. In the literature on international business, significant attention has been paid to examining how organisational capabilities, such as organisational learning, accelerate the internationalisation process and improve performance. Scant research has investigated whether and how a firm's actions taken to diversify both geographic reach and entry modes help it build strong dynamic capabilities and ultimately improve performance. The action-based approach provides a theoretical foundation to address this gap.

Second, existing internationalisation models fail to incorporate the role of managerial cognition (Maitland & Sammartino, 2015). Some international business scholars suggest that internationalisation is an outcome of a rational planning process, which requires managerial commitment of time and effort to collect market information and accordingly formulate and implement effective strategies (Adomako, Opoku, & Frimpong, 2018). Other scholars state that internationalisation is an entrepreneurial process, in which entrepreneurs deliberately and spontaneously execute a set of novel activities to pursue international opportunities (Hmieleski & Baron, 2008; Nemkova, Souchon, Hughes, & Micevski, 2015). Studies on MNEs and international new ventures acknowledge the influence of managerial cognition on internationalisation. However, few studies examine how managerial cognition affects capability development in the internationalisation process and the associated performance effects. The cognition-based approach provides a theoretical background to incorporate managerial cognition into the internationalisation models.

Lastly, given the contingent nature of the relationship between dynamic capabilities and performance, an examination of the performance effect of alignment between internationalisation speed and dynamic capabilities represents an attempt to account for the heterogeneity in performance implications of rapid internationalisation.

In order to identify specific dynamic capabilities that influence the direct link between post-entry speed and firm performance, internationalisation process theory and international entrepreneurship research will be reviewed in the next section.

## **2.6 Influential Dynamic Capabilities in the Post-Entry Stage**

The mainstream internationalisation theories, such as the product cycle theory, the internalisation theory, and the transaction cost theory, mainly explain why and where firms expand into foreign markets and the benefits associated with international expansion (Raymond, St-Pierre, Uwizeyemungu, & Dinh, 2014). When it comes to timing of internationalisation and the process of post-entry international expansion, two research streams prevail, namely internationalisation process theories and international entrepreneurship research. Internationalisation process theory represents an early attempt to examine the characteristics of the firm's internationalisation process. Later, with the increasing presence of international new ventures in the world market, international entrepreneurship research has emerged with a specific focus on early and rapid internationalisation (Mejri & Umemoto, 2010).

These two research streams use different units of analysis and emphasise different factors that drive the internationalisation process. Internationalisation process theories focus on the firm level and examines the role played by knowledge and organisational learning in the internationalisation process (Johanson & Mattsson, 1987; Johanson & Vahlne, 1977). In contrast, international entrepreneurship research focuses on the individual level and investigates the role of individual entrepreneurs in the internationalisation process (Oviatt & McDougall, 1994). An integration of these two research streams would provide an opportunity to identify dynamic factors both at firm and individual levels that are pivotal to explain the heterogeneity in internationalisation speed and its performance implications. Thus, existing internationalisation models can be extended by incorporating the role of managers and time-related factors. The

following section provides a detailed discussion about internationalisation process theories and international entrepreneurship research.

### **2.6.1 Internationalisation process theory**

The Uppsala model, also known as the U-model, is one of the most influential internationalisation process theories in the literature of international business. Based on empirical observations, Johanson and Vahlne (1977) concluded that firms developed their international operations in gradual and incremental steps and started with geographically or psychically close foreign markets in order to minimise the level of uncertainty and perceived risks. The underlying assumptions of this model are uncertainty and bounded rationality, which can be addressed through learning from operating international activities in foreign markets and commitment decisions (Johanson & Vahlne, 2009). Learning enables the firm to build up a body of knowledge about foreign markets and modes of operation, and that knowledge base influences the decisions about subsequent international activities and level of commitment (Xie & Suh, 2014). Developing knowledge is fundamental to a firm's internationalisation. Thus, knowledge and organisational learning are the key concepts in the Uppsala model.

#### **2.6.1.1 Knowledge and organisational learning**

According to the Uppsala model, market knowledge and internationalisation knowledge are the two types of knowledge that are most relevant to the internationalisation of a firm in the post-entry stage (Johanson & Vahlne, 1977; Oviatt & McDougall, 1994; Prashantham & Young, 2011). Market knowledge includes knowledge about local institutions and local business actors (Åkerman, 2015b). Local institutional knowledge includes a firm's knowledge of local government policies, culture, and legal and regulatory systems, while local business-actor knowledge contains knowledge about the needs of local customers, and the resources and capabilities of local suppliers and competitors (Fletcher & Harris, 2012). The less knowledge about local business actors, the higher the liability of outsidership a firm suffers (Johanson & Vahlne, 2009). The less institutional knowledge a firm possesses, the higher the liability of foreignness it suffers in the host country (Hilmersson, 2014). Market knowledge is country and market specific, but not firm specific (Fletcher & Harris, 2012). The firm's acquisition

of institutional and local business-actor knowledge reduces the knowledge gap it perceived in foreign markets and thus shortens the psychic distance between the host and home countries (Ojala, 2015; Petersen, Pedersen, & Lyles, 2008), which subsequently affects firms' perception of their ability to expand in foreign markets. The more a firm knows about a foreign market, the lower the perceived risks and the more likely the firm will enter that market and increase resource commitment accordingly. Otherwise, without sufficient market knowledge, a firm will have a tendency to avoid uncertainty and thus to delay its internationalisation (Wu & Voss, 2015).

Internationalisation knowledge concerns how to develop and execute an internationalisation strategy in different countries (Blomstermo, Eriksson, & Sharma, 2004). Internationalisation knowledge is a product of long-term international exposure to various situations (Hohenthal, Johanson, & Johanson, 2014). It is beneficial for lateral international expansion into new geographic markets. Unlike market knowledge, internationalisation knowledge is neither market nor country specific. It is concerned with general procedures for business operations in global markets, and helps firms develop the ability to manage international activities across diverse markets (Åkerman, 2015a).

The Uppsala model initially and exclusively suggested that internationalising firms learn from their own experience, especially those of current activities. Learning from a firm's own first-hand direct experience is known as experiential learning (De Clercq, Sapienza, Yavuz, & Zhou, 2012). Experiential learning results in a slow and gradual process of knowledge accumulation. Later, the Uppsala model was extended by incorporating a business network view (Johanson & Vahlne, 2009). The extended Uppsala model suggests that being embedded in a network is crucial to developing new businesses in a foreign market. When a firm enters a foreign market where it has no relevant network relationships, it will suffer the liability of outsidership that impedes the progress of business development (Johanson & Vahlne, 2009; Schweizer, 2013). For firms suffering from liabilities of foreignness and newness simultaneously in a foreign market, the significance of network relationships for the survival of firms is magnified further (Fernhaber & Li, 2013). The extended Uppsala model suggests that firms can learn from business networks, which accelerates the process of knowledge accumulation. The network provides the firm with opportunities for learning from knowledge

exchange with other firms in the network or through observations of other firms' behaviour (Holm et al., 2015). This type of learning process is called vicarious learning (De Clercq et al., 2012). However, vicarious learning is not always beneficial. The value of knowledge provided by business networks depends on a firm's ability to absorb and utilize it (Yoo et al., 2016). Moreover, other firms embedded in the business network may have limited information to exchange, which determines the diversity and quality of knowledge that a firm can leverage in its internationalisation process (Cerrato, Crosato, & Depperu, 2016). In addition, although embedded in the networks, the firm may have no time for interactions with other firms to gain internationalisation knowledge (Fletcher & Harris, 2012).

Existing studies suggested that learning sequences exist and evolve in the process of internationalisation (Bingham & Davis, 2012). In the early stage of internationalisation, firms with limited international experience may rely on vicarious learning to accumulate knowledge. As more experience accumulates, experiential learning will replace vicarious learning and become the dominant learning process (Aranda, Arellano, & Davila, 2017). Problems encountered in experiential learning may trigger vicarious learning (Posen & Chen, 2013).

#### **2.6.1.2 Research gaps related to organisational learning in internationalisation**

Rooted in internationalisation process theory, organisational learning during internationalisation mainly focuses on two aspects: acquisition of new knowledge, and transfer of acquired knowledge into similar institutional contexts for improvement of international activities. However, an overwhelming focus on the necessity for and benefits of organisational learning in the international context can overlook the influence of spatial and temporal dimensions of internationalisation as well as managerial cognitive limits on the organisational learning process (Fahy, Easterby-Smith, & Lervik, 2014).

Organisational learning in the international context is a routine-based activity, and is accomplished in actions in different institutional contexts (Saka-Helmhout, 2010). The actions taken to conduct international business in different institutional contexts through varied modes of operation lead to either reinforcement of or change in organisational

routines, which determines the level of organisational learning (Fahy et al., 2014). Up to date, little research has examined how a firm's actions taken to diversify geographic scope and modes of operation help it build strong dynamic learning capabilities and ultimately improve performance. Moreover, the quality of the learning process is affected by the amount of time available to deliberately analyse the cause-effect relationships (Castellaneta & Zollo, 2015). However, given the neglect of the temporal dimension of internationalisation in the internationalisation process theory, few studies have examined how internationalisation speed could influence the development of organisational routines in an international context.

As a dynamic capability, absorptive capacity is particularly relevant to internationalisation, since it mediates the inflows of knowledge from various sources including both a firm's own experience and its networks (Flatten, Greve, & Brettel, 2011; Moilanen, Østbye, & Woll, 2014; Tsai, 2001; Yoo et al., 2016). An examination of absorptive capacity development in the context of internationalisation provides an opportunity to address the gaps identified above. The following section provides a detailed discussion of absorptive capacity.

### **2.6.1.3 Absorptive Capacity**

#### ***Conceptualisation***

Cohen and Levinthal (1990) initially introduced the concept of absorptive capacity and suggested that it is critical to a firm's innovative capabilities. They define absorptive capacity as "the ability to recognise the value of new, external information, assimilate it and apply it to commercial ends" (p. 128). According to this conceptualisation, absorptive capacity is a multidimensional concept, and consists of three components. A firm's absorptive capacity is largely a function of the diversity of its pre-existing knowledge structure. Specifically, learning is cumulative, and learning performance is best when external knowledge has some overlaps with pre-existing knowledge. The richness of the pre-existing knowledge structure provides a more robust basis for knowledge assimilation as it increases the possibility that external knowledge is closely related to pre-existing knowledge. In addition to strengthening assimilative powers, knowledge diversity also enables individuals and firms to make novel associations and



linkages between pre-existing knowledge and new knowledge. Thus, the development of absorptive capacity is domain-specific and path- or history- dependent. In addition, R&D is the crucial setting in which absorptive capacity is to be developed. Accordingly, prior research has operationalised the concept of absorptive capacity as R&D intensity and number of patents (Tsai, 2001). An increase in technological opportunities and appropriability of external knowledge would trigger development of absorptive capacity.

Later, Zahra and George (2002) adopted a process perspective and re-conceptualised absorptive capacity as a type of dynamic capability that influences the sustainability of a firm's competitive advantages as well as creation of other organisational competencies. Absorptive capacity is defined as "a set of organisational routines and processes by which firms acquire, assimilate, transfer and exploit knowledge to produce a dynamic organisational capability" (p.186). According to Zahra and George, absorptive capacity consists of four sequential learning processes: "(1) acquisition refers to a firm's ability to identify and acquire externally generated knowledge; (2) assimilation refers to the firm's routines and processes that allow it to analyse and understand the obtained information; (3) transformation denotes a firm's ability to combine its existing knowledge and the newly acquired and assimilated knowledge; and (4) exploitation centres on a firm's ability to apply knowledge into its operations" (p. 189-190).

Compared to Cohen and Levinthal's (1990) conceptualisation, Zahra and George (2002) introduced a few new sub-concepts: knowledge transformation and social integration mechanisms. After adding the new component of knowledge transformation, Zahra and George (2002) split absorptive capacity into two subsets of potential and realised absorptive capacity. Potential absorptive capacity comprises the capabilities in terms of knowledge acquisition and assimilation, while realised absorptive capacity consists of knowledge transformation and exploitation. These two subsets of capabilities play different roles in value-creating, but also, at the same time, complement each other. Potential absorptive capacity provides the firm with strategic flexibility and some degree of freedom to adapt and evolve in high-velocity environments by continually renewing their knowledge stock, while realised absorptive capacity enables firms to leverage the absorbed knowledge to innovate and thus build competitive advantages (Zahra & George, 2002). More importantly, there could be a gap between potential and realised absorptive capacity. A firm with strong ability to acquire and assimilate

knowledge may not have the capability to transform and exploit the knowledge to generate profits. Zahra and George (2002) suggest that social integration mechanisms, which facilitate information distribution within the firm and promote sharing of knowledge between units within a firm, can efficiently reduce the gap between potential absorptive capacity and realised absorptive capacity.

More recently, Todorova and Durisin (2007) proposed an alternative understanding of the newly-added component, namely knowledge transformation, in Zahra and George's (2002) conceptualisation of absorptive capacity. Todorova and Durisin (2007) argued that knowledge transformation is not a consequence but an alternative process to knowledge assimilation. According to the literature of cognitive psychology and learning, external knowledge that is compatible with existing knowledge stock can be slightly altered and then incorporated into the existing cognitive structure. In the case that new knowledge cannot be assimilated, the existing cognitive structure can be transformed. The new cognitive structure helps the firm cope with path dependence and adapt to an idea or a situation that they cannot assimilate. Knowledge that a firm acquired may move backward and forward between the assimilation and transformation processes.

### ***Existing research on absorptive capacity***

In the literature, significant efforts have been devoted to theoretically and empirically explicating antecedents and outcomes of absorptive capacity and its contingency on environmental dynamism. The antecedents to absorptive capacity have been studied at intra- and inter-firm levels. At the intra-firm level, prior related knowledge has been recognised as the most important antecedent to absorptive capacity (Zahra & George, 2002). Absorptive capacity is path dependent (Cohen & Levinthal, 1990). This path-dependence implies that the firm can only identify and acquire external knowledge that has some overlap with their existing knowledge base. A firm's prior knowledge determines identification and acquisition of future external knowledge (Patterson & Ambrosini, 2015). These studies emphasise the influence of characteristics of external knowledge on the absorption process. At the inter-firm level, prior research stated that alliance management, network position and social embeddedness are influential antecedents to absorptive capacity, since these factors affect the number of external

sources as well as the quality of knowledge gained from these sources (Shu-Cheng, Hueimei, & Chang-Yung, 2010; Tortoriello, 2015; Tsai, 2001).

Regarding the outcomes, prior research predominantly focused on the effect of absorptive capacity on innovation and performance. Absorptive capacity manages the inflow of external knowledge, which is a crucial element for innovation (Camisón & Forés, 2010; Moilanen et al., 2014). A combination of newly acquired knowledge with existing knowledge enables the firm to develop novel ideas and convert them into new products and services. Therefore, absorptive capacity directly contributes to innovation outcomes (Kostopoulos, Papalexandris, Papachroni, & Ioannou, 2011; Lichtenthaler, 2009). Theoretically, absorptive capacity improves the firm's competitive advantage through innovation, which subsequently enhances its performance (Zahra & George, 2002). However, the effect of absorptive capacity on performance is not always positive. For instance, Wales, Parida, and Patel (2013) argued that there is a curvilinear (inverted U-shape) relationship between absorptive capacity and financial performance since the cost associated with acquisition, assimilation and transformation of new external knowledge could overtake the financial returns associated with exploitation of that knowledge. In a similar vein, Wu and Voss (2015) suggested that the influence of absorptive capacity on international performance is stronger in the early stage of internationalisation, and then becomes weak along with the diminishing of the learning advantages of newness.

Existing studies have also examined the impact of environmental dynamism on the effectiveness of absorptive capacity. In a stable environment, a firm can sustain its growth by exploiting its existing knowledge in a narrow domain. This will not pose much of a challenge for a firm's absorptive capacity. However, in a highly dynamic environment, firms are required to absorb knowledge from a broad domain (Volberda et al., 2010). Moreover, given the path-dependence of absorptive capacity, increase in the complexity and ambidexterity of external knowledge would pose a huge challenge for a firm's ability to absorb and capitalise on external knowledge (Roberts, 2015).

### ***Research gaps related to absorptive capacity***

Based on the above discussion, prior research on absorptive capacity primarily takes a static perspective and examines its antecedents, outcomes and contingent factors (Rodríguez-Serrano & Martín-Armario, 2017). Few studies take a dynamic perspective and examine how absorptive capacity changes in the internationalisation process (Marabelli & Newell, 2014). There are several gaps in the research on absorptive capacity. First, most studies on absorptive capacity have assumed that firms have a rather stable level of absorptive capacity (Schildt et al., 2012). There is a recursive relationship between organisational learning and absorptive capacity. Learning in a particular domain builds up firms' knowledge base in that domain, which constitutes its absorptive capacity and facilitates more learning in that domain (Autio et al., 2000). Surprisingly, little research has examined in depth the nature of the relationship between organisational learning and absorptive capacity (Sun & Anderson, 2010). International business studies argue that diversification in foreign markets and entry modes requires the firm's investment in learning. However, the influence of organisational learning on absorptive capacity has rarely been examined.

Second, existing studies have mainly emphasised the importance of prior knowledge as an antecedent to absorptive capacity. However, only scant research attention has been devoted to examining the influence of prior knowledge on absorptive capacity. Given its path-dependent nature, prior knowledge directs firms' attention to knowledge that is similar to what is already known. Absorption of similar knowledge over time under the influence of prior knowledge may impede the incorporation of novel knowledge (Yue, Gnyawali, Srivastava, & Asgari, 2018), which may restrict or even deteriorate a firm's absorptive capacity.

Third, there is a lack of attention to the role played by managerial executives as individuals in absorptive capacity (Apriliyanti & Alon, 2017). A firm's absorptive capacity is a function of mental models and learning behaviours of its individual members (Martinkenaite & Breunig, 2016). Individuals evaluate the value of external knowledge, compare it with existing knowledge bases and ultimately use it for commercial ends (Cohen & Levinthal, 1990). Taking a micro perspective, some recent studies have identified individuals as the agents of absorptive capacity, which is

fundamental to knowledge acquisition and dissemination within organisations (Andersson, Dasí, Mudambi, & Pedersen, 2016; Hart, Gilstrap, & Bolino, 2016). It is found that the positions of individuals embedded in internal networks in organisations affect absorptive capacity development (Tortoriello, 2015). At managerial level, some studies have found an influence of managerial characteristics, such as leadership and managerial ties, on absorptive capacity development (Flatten, Adams, & Brettel, 2015). Within the context of SMEs' internationalisation, managerial mental activities in response to external opportunities may expand or narrow the knowledge-seeking scope (Saad, Kumar, & Bradford, 2017), which can have an influence on firm-level absorptive capacity (Ferrerias-Méndez, Fernández-Mesa, & Alegre, 2016).

Fourth, studies regarding the influence of absorptive capacity on firm internationalisation have concentrated on innovation (Patel et al., 2015), and knowledge transfer across subsidiaries (Minbaeva et al., 2014) or in inter-organisational networks (Yoo et al., 2016). While the importance of organisational learning in internationalisation is clear, the role of absorptive capacity in rapid internationalisation remains unclear. There is only one relevant study, which finds that strong absorptive capacity helps early internationalising firms improve international performance (Wu & Voss, 2015). After initial international entry, absorptive capacity still plays a key role in determining the quality and effectiveness of entrepreneurial behaviours in the international markets (Sciascia, D'Oria, Bruni, & Larrañeta, 2014). On one hand, absorptive capacity provides internationalising firms with an increasing number and quality of opportunities to pursue through constant acquisition of new knowledge about international opportunities and evaluation of these opportunities based on prior knowledge (Engelen, Kube, Schmidt, & Flatten, 2014). On the other hand, the bold international behaviours are more likely to be converted into higher financial performance if firms are able to combine new knowledge with prior knowledge to improve the novelty upon which their competitive advantages are built (Alegre & Chiva, 2013; Fernández-Mesa & Alegre, 2015).

### **2.6.2 International entrepreneurship research**

International entrepreneurship research is a research field with a cross-disciplinary nature, which is based on an integration of entrepreneurship and international business

(Peiris, Akoorie, & Sinha, 2012). In the early stage, international entrepreneurship research mainly focused on new ventures that internationalise rapidly and proactively shortly after their inception. These ventures are known as international new ventures, defined as “a business organisation that, from inception, seeks to derive significant competitive advantage from the use of resources and the sale of outputs in multiple countries” (Oviatt & McDougall, 1994, p. 49). Later, the focus of international entrepreneurship research broadened towards entrepreneurial internationalisation irrespective of firm size and age (Jones, Coviello, & Tang, 2011; McDougall & Oviatt, 2000). Entrepreneurial firms undertake innovative, proactive and risk-taking actions to rapidly and aggressively expand their international operations (Keupp & Gassmann, 2009).

According to international entrepreneurship research, internationalisation is conceptualised as a process of international opportunity discovery, enactment, evaluation and exploitation (Chandra, 2017; Ellis, 2011; Hilmersson & Papaioannou, 2015; Oviatt & McDougall, 2005b). Opportunity is defined as “an idea or dream that is discovered or created by an entrepreneurial entity and that is revealed through analysis over time to be potentially lucrative” (Short, Ketchen, Shook, & Ireland, 2010, p. 55). Opportunities can be distinguished into two distinct types: discovered opportunities and created opportunities. Discovered opportunities are objective and arise from various sources, including creation of new technological knowledge, information asymmetry across geography, political or regulatory shifts, changes in markets and cost of capital and labour (Alvarez & Barney, 2010; Li, 2013). Opportunity discovery is realised through active search behaviour. Exploitation of such opportunities entails risk due to the requirement for resource deployment. The risks associated with opportunity discovery can be estimated through rational analysis (Mainela, Puhakka, & Servais, 2014). In contrast, created opportunities are subjective and created endogenously by actions of entrepreneurs when seeking to generate economic profits (Alvarez & Barney, 2010; Alvarez, Barney, & Anderson, 2013). The opportunities exist in the perceptions and beliefs of entrepreneurs (Alvarez & Barney, 2010). Entrepreneurs and managers test their beliefs regarding the existence of opportunities in the markets and react to the responses. Opportunity creation is a slow and incremental process since it involves an interactive process of action and reaction. Due to the unknown future, opportunity creation is also confronted with true uncertainty.

Risk and uncertainty affect discovery, creation and exploitation of opportunities (Mainela et al., 2014; Short, Ketchen, Shook, & Ireland, 2010). Risk refers to situations where the consequences of actions are subject to known probability distributions and it is calculable, while uncertainty refers to situations where the future is unknowable or incalculable (Liesch, Welch, & Buckley, 2011). Risk and uncertainty have ubiquitous association (Figueira-de-Lemos, Johanson, & Vahlne, 2011). Changes in uncertainty lead to changes in risk. The empirical study of opportunity has primarily focused on the individual level. Entrepreneurs and managers make final decisions regarding whether and how to discover, create and exploit opportunities. Recognition of international opportunities is a highly subjective process (Ellis, 2011) as entrepreneurs and managers may perceive risk and uncertainty quite differently from each other. Existing studies have argued that prior experience and social ties possessed by individual entrepreneurs and managers significantly influence risk calculations (Keh, Foo, & Lim, 2002), and therefore, would determine how entrepreneurs and managers recognise and evaluate opportunities in international markets. The following section provides more details.

#### **2.6.2.1 The role of decision-makers in the internationalisation process**

The role played by the firm's decision-makers is underspecified in most internationalisation theories. International entrepreneurship research revolves around the influence of decision-makers on entrepreneurial activities. Entrepreneurs' and managers' prior experience and social ties are positively related to the discovery, creation and exploitation of opportunities. In the opportunity discovery process, individuals are only alert to new information that is compatible with their prior experience (Shane, 2000). Prior experience, resulting from previous education, work experience and experiential learning, orientates an individual's gaze to a specific field in which he/she may discover and exploit opportunities (Arentz et al., 2013). Opportunity discovery entails risk (Alvarez & Barney, 2010). Prior experience enables firms to absorb sufficient new knowledge to evaluate the risk associated with exploitation of discovered opportunities. In contrast, prior industrial experience is not closely related to created opportunities, as existence and exploitation of created opportunities may require use of diverse knowledge from unrelated industries and development of fundamentally new knowledge (Sine, Haveman, & Tolbert, 2005).

Moreover, prior experience may even hinder learning of disparate knowledge from external diverse sources.

The discovery, creation and exploitation of international opportunities are also affected by entrepreneurs' and managers' social ties. In the opportunity discovery process, social ties provide entrepreneurs with direct access to potential opportunities, and thus act as a bridge to new and different knowledge, but also constrain valuable exchanges in terms of geographic, psychic and linguistic distance (Bhagavatula et al., 2010; Ellis, 2011). In contrast to opportunity discovery, opportunity creation entails uncertainty (Alvarez & Barney, 2010). Creation of opportunities requires a significant amount of investment and its outcome is unknown. Network ties not only enable the firm to share risk with others, but also provide access to diverse knowledge and resources that are required for opportunity creation (Jarvenpaa & Välikangas, 2014; Lee, Kelley, Lee, & Lee, 2012; Lowik, van Rossum, Kraaijenbrink, & Groen, 2012; Tang, Fisher, & Qualls, 2016; Yang, Zheng, & Zhao, 2014). Recently, the entrepreneurship literature has addressed co-creation of opportunities through network ties. For example, Best (2015) found that being embedded in a regional industrial ecosystem would enable the firm to create and enact opportunities to innovate, because such embeddedness facilitates the exchange of expertise, technological capabilities and financial resources between firms.

Based on the above discussion, prior experience and social ties play a crucial role in the discovery, creation and exploitation of international opportunities. Advancing this stream of research, some studies argued that it is entrepreneurs and managers who respond to opportunities, and thus cognition of the entrepreneurs and managers would determine their interpretation of changes in markets and responses to opportunities (Eggers & Kaplan, 2009; Herrmann & Nadkarni, 2014; Oyson & Whittaker, 2015). Differences in managerial cognition lead to significant differences in terms of whether and how quickly entrepreneurs and managers react to opportunities (Marcel et al., 2011). Although prior research has paid attention to the cognitive underpinnings of opportunity recognition and evaluation, the role of managerial cognition in influencing internationalisation remains poorly understood in the literature (Aharoni, Tihanyi, & Connelly, 2011; Chandra, 2017; Maitland & Sammartino, 2015). There is a call to directly incorporate the concept of managerial cognition into the theoretical models of internationalisation (Maitland & Sammartino, 2015). Managerial cognition shapes the



focus of attention and influences interpretation of external challenges (Chaston & Sadler-Smith, 2012; Plambeck, 2012), which subsequently affects whether and how quickly firms react to external challenges and maintain competitive advantages (Marcel et al., 2011). Thus, the integration of managerial cognition into internationalisation models provides an opportunity to examine the micro-foundations of heterogeneity in firm-level capabilities and performance (Kaplan, 2011).

In the next section, the construct of managerial cognition will be further reviewed.

### **2.6.2.2 Managerial cognition**

#### ***Two cognitive systems: analytic versus heuristic***

Cognition is typically described as thinking, reasoning, decision-making and social judgement (Evans, 2008). It includes how individuals exercise judgement about information search parameters, assessment and decision integration (Maitland & Sammartino, 2015). Cognition consists of mental models (also known as knowledge structure, mental structure representations, dominant logics and cognitive maps) and mental activities (also known as mental processes, mental operations, frames and schema) (Eggers & Kaplan, 2013; Helfat & Martin, 2015). Mental models are built on past experience in an information environment and represent organised knowledge about a given concept or type of stimulus (Fiske & Taylor, 1984; Walsh, 1995). Mental models include the content and the linkage between the content. Mental activities involve information processing (Keh et al., 2002). In the literature of psychology, two types of cognitive systems are distinguished: heuristic versus analytic (Evans, 2006). Various terms have been used to differentiate these two cognitive systems, including rational versus experiential (Epstein, 1994), intuitive versus reflective (Phillips, Fletcher, Marks, & Hine, 2016), linear thinking versus non-linear thinking (Vance, Groves, Yongsun, & Kindler, 2007), and system 1 versus system 2 (Stanovich & West, 2003). The heuristic cognitive style has the characteristics of being fast, holistic, automatic, effortless, pleasure-pain oriented, associative, pragmatic, and preferring to attend to internal feelings and intuition. In contrast, the rational cognitive style has the characteristics of being slow, intentional, effortful, reason-oriented, rule-based, and

logical and preferring to attend to external data and factors (Epstein, Pacini, Denes-Raj, & Heier, 1996; Evans, 2008; Phillips et al., 2016; Vance et al., 2007).

The relationship between mental models and information processing is rather complex. In the heuristic cognitive system, mental models built from prior experience affect an individual's ability to attend to, encode reality and draw inferences about new information; in the rational cognitive system, new information itself shapes an individual's response to it, which may lead to modification of the existing knowledge structure (Ericsson & Lehmann, 1996; Walsh, 1995). Each type of cognitive style has its own strengths and weaknesses. The heuristic cognitive style enables individuals to speed up problem solving and make effective decisions that are complex or under uncertain contexts (Dijksterhuis & Nordgren, 2006; Phillips et al., 2016). However, heuristics may limit individuals' ability to understand an information environment since it may encourage stereotypic thinking and direct limited attention to unimportant information (Walsh, 1995). The rational cognitive style enables individuals to avoid cognitive biases when evaluating information and is more likely to generate correct decisions in a conventional situation (Epstein, 1994; Phillips et al., 2016). However, due to limited analytical ability, individuals' rationality is bounded, which may prevent individuals from developing a complete understanding of a given environment (Aharoni et al., 2011).

### ***Existing research on managerial cognition***

Increasingly, international business scholars have suggested managerial cognition is a crucial factor to account for the heterogeneity in firm internationalisation processes and performance (Gary & Wood, 2011; Grégoire et al., 2011; Kaplan, 2011; Surroca, Prior, & Tribó Giné, 2016). Decision-making in terms of internationalisation is an information intensive process, which requires collection of market and institutional information and is clouded by uncertainty. An examination of decision-makers' cognitive styles and associated contingent factors would provide insights into how entrepreneurs and managers assess international opportunities and make internationalisation decisions.

Despite the repeatedly highlighted need to incorporate managers' decision styles, biases and cognitive processes into internationalisation models (Brouthers & Hennart, 2007),

research on the influence of managerial cognitive styles on the internationalisation process and performance outcomes remains scarce (Maitland & Sammartino, 2015). Existing studies primarily focus on the validity of managerial cognition as an explanatory factor for varied internationalisation decisions. A central premise here is that individual differences in experience and cognitive processes could be one of the sources of heterogeneity in firm-level decision-making and performance (Kaplan, 2011). A recent study suggests that, during market scanning, managers' familiarity with a foreign market influences their investment in cognitive efforts to evaluate the risk and opportunities in that market, which subsequently determines the likelihood of that market being included for consideration of market entry (Clark et al., 2018). Similarly, another study suggests that varied prior international experience and social interactions lead to substantial heterogeneity in the mental models with which managers make sense of international opportunities and make decisions on selection of foreign markets and entry modes (Maitland & Sammartino, 2015).

Some other studies examine whether the choice of rational versus heuristic cognitive styles in decision-making depends on the characteristics of entrepreneurial activities (Weber & Johnson, 2009). Some studies suggest that managers are more likely to rely on the heuristic cognitive style when they perform entrepreneurial activities involving a high level of uncertainty, such as new venture creation and opportunity creation (Kickul, Gundry, Barbosa, & Whitcanack, 2009; Nummela, Saarenketo, Jokela, & Loane, 2014). In contrast, when it comes to opportunity evaluation and exploitation, managers have a preference for the analytical cognitive process (Baldacchino, Ucbasaran, Cabantous, & Lockett, 2015).

In a similar vein, some studies suggest that managers tend to rely on different cognitive styles when making decisions in different stages of the internationalisation process. The heuristic cognitive style is widely applied in the early venture stage when uncertainty is greatest (Berends, Jelinek, Reymen, & Stultiëns, 2014; Kalinic, Sarasvathy, & Forza, 2014). This is consistent with the core assumption of international entrepreneurship research that heuristics are the seed of entrepreneurial activities, which speed up the decision-making process and provoke proactive actions to explore opportunities across borders (Baldacchino et al., 2015). International entrepreneurship research finds that the

more a manager's cognitive style tends toward heuristics and away from analytics, the more opportunities she/he is likely to identify (Corbett, 2005; Wang & Chugh, 2014).

However, empirical findings remain conflicting regarding which cognitive style is relied on in the post-entry stage of internationalisation. Some studies suggest that the analytic cognitive process is widely used in the late stage, as more experience is accumulated in this stage (Chandra, 2017; Nummela et al., 2014). Conversely, other studies posit that experienced managers are more likely to apply the heuristic cognitive process rather than the analytic cognitive process to make decisions (Harms & Schiele, 2012). To take it further, some studies propose that a selection of either analytic or heuristic cognitive processes is contingent on environmental conditions. Contextual variables, such as the industrial velocity and culture, may affect managers' selection of cognitive process (Dew, Grichnik, Mayer-Haug, Read, & Brinckmann, 2015; Nadkarni & Barr, 2008; Zahra, Korri, & JiFeng, 2005).

### ***Research gaps related to managerial cognition***

Based on the above review, existing studies have primarily focused on the relationship between managerial cognitive styles and decision-making in terms of internationalisation. However, few empirical studies have directly examined the influence of managerial cognition on performance outcomes (Smolka, Verheul, Burmeister-Lamp, & Heugens, 2018). Internationalisation process theory and international entrepreneurship research emphasise different cognitive styles. Internationalisation process theory embraces rationality in decision-making and argues for the performance benefits of rational analysis (Aharoni et al., 2011). This stream of research suggests that based on intensive information collected from external sources, deliberate analysis of foreign markets enables firms to accurately estimate the risk associated with market entry and then appropriately develop internationalisation strategies, which can ultimately maximise financial performance (Deligianni, Dimitratos, Petrou, & Aharoni, 2016). In contrast, some other international business studies put the emphasis on the bounded rationality of decision-makers and highlight its detrimental effect on performance under uncertainty (Kostova, Nell, & Hoenen, 2016; Maitland & Sammartino, 2015; Schubert, Baier, & Rammer, 2018). The conflicting

findings highlight the necessity of specifying boundary conditions for rational decision-making in internationalisation.

International entrepreneurship research favours the use of heuristics in decision-making. This stream of research proposes that managers relying on the heuristic cognitive process tend to have a high level of risk tolerance (Chaston & Sadler-Smith, 2012), and are more innovative in opportunity creation and exploration (Wang & Chugh, 2014), which may help firms build competitive advantages and achieve superior performance. However, it is suggested that intuitive entrepreneurs and managers tend to revise their growth intention in accordance with the dynamism of competitive environments, which may affect performance (Gary & Wood, 2011).

In addition, prior studies have paid little attention to the influence of managerial cognition on firm-level capabilities. Adoption of a specific managerial cognitive style would determine the amount of information required for decision-making in terms of internationalisation and the process to collect the required information. Managerial cognition would regulate the scope of information seeking and process of information collection, and thus determine the inflow and utilization of external information (Volberda et al., 2010). However, due to the neglect of the role played by managerial cognition in existing internationalisation models, the influence of managerial cognitive styles on firm-level capabilities has largely been overlooked.

## **Chapter 3 - Conceptual Framework and Hypotheses Development**

### **3.1 Introduction**

This chapter presents the conceptual framework and theoretical hypotheses to address the research gaps identified in Chapter two. Rooted in action- and cognition- based approaches to dynamic capabilities, a conceptual framework for examining the dynamics of organisational learning that influence the relationship between post-entry internationalisation speed and performance is proposed. This conceptual framework is based on the integration of theoretical constructs drawn from internationalisation process theory and international entrepreneurship research. Under the guidance of the conceptual framework, a set of theoretical hypotheses are proposed. A curvilinear relationship between post-entry internationalisation speed and performance is firstly proposed. Taking a micro perspective, direct influences of post-entry internationalisation speed and managerial cognition on absorptive capacity are hypothesised, followed by a hypothesis on the mediation role of absorptive capacity on the relationship between post-entry internationalisation speed and performance. Lastly, the moderation roles of prior international experience and market dynamism are postulated.

This chapter is arranged as follows. Section 3.2 presents the conceptual framework. In this section, a brief review of dynamic capability theory as the theoretical lens for this study is provided in order to highlight its appropriateness for the study of internationalisation speed. After that, two existing approaches to the development of dynamic capabilities from a micro perspective, namely the action-based approach and the cognition-based approach, are discussed in order to highlight the rationale for the linkages between theoretical constructs that are drawn from theories of internationalisation. Derived from the conceptual framework, Section 3.3 proposes a set of theoretical hypotheses, which will be empirically tested in the modelling analysis of the present study.

## **3.2 Conceptual Framework**

### **3.2.1 Dynamic capability theory as the theoretical lens**

Prior research in international business has offered useful insights into the development of internationalisation strategies by applying RBT (Peng, 2001). By specifying the nature of the resources required in order to overcome the liability of foreignness, RBT has provided a way to investigate resources and capabilities that form the foundation for international market entry. However, RBT has been criticized for its insufficient focus on processes and implementation (Barney et al., 2001). Prior studies rooted in RBT downplayed or even ignored the augmentation of organisational and managerial capabilities (Teece, 2014a). Advantages built on static resources and ordinary capabilities are not sufficient for continuing cross-border expansion. Due to differences in institutional settings, cross-border business activities require the firm to adapt its capabilities to local conditions, rather than simply replicating some portion of their existing activities in a new location (Teece, 2014a). The continued growth through international expansion requires on-going development and upgrading of capabilities that are pivotal for the survival in heterogeneous institutional environments (Khan & Lew, 2018). Dynamic capability theory recognises the importance of dynamics. As high-level capabilities, dynamic capabilities alter a firm's resource base, govern the rate at which ordinary capabilities change and even initiate change in external environments (Helfat & Winter, 2011). The strength of dynamic capability determines the speed and degree to which firm resources are deployed and reconfigured, consistent with firm strategy and changes in external business environments (Teece, 2014b). Compared to static resources, dynamic capabilities provide firms with better chances of building and maintaining a competitive advantage in rapidly changing environments and ultimately achieving superior performance.

Dynamic capability theory emphasises the importance of amalgamation of entrepreneurial and firm capabilities, and their congruence with firm strategies, for development of sustainable competitive advantage in rapidly changing environments (Teece, 2014a). Therefore, a dynamic capability perspective provides an opportunity to examine how managerial and organisational factors influence the emergence of dynamic capabilities that are pivotal to explaining the heterogeneity of post-entry

internationalisation speed and performance (Helfat & Peteraf, 2015; Teece, 2007; Wohlgemuth & Wenzel, 2016; Yi et al., 2016).

### **3.2.2 Organisational learning as a routine-based activity in an international context**

Organisational learning, either from the firm's own experience or from business partners, provides a valuable means to develop firm capabilities (Kale & Singh, 2007; Teece, 2014b; Zollo & Winter, 2002). Organisational learning enables the firm to accumulate experience, draw inferences from a set of past organisational activities and store knowledge for future use (Yang, Narayanan, & Zahra, 2009). These processes of experience accumulation, knowledge articulation and knowledge codification lead to creation of new knowledge, and the employment of newly created knowledge may lead to new organisational routines. These in turn will facilitate the development of new firm capabilities (Zollo & Winter, 2002). Internationalisation provides a useful context for firms to learn in. Both internationalisation process theory and international entrepreneurship research have acknowledged the importance of organisational learning in understanding the causes, processes, and outcomes of the decisions to enter foreign markets (De Clercq et al., 2012), despite having divergent views on the sources of learning and the associated influence on the internationalisation process. Organisational learning is at the core of examining the temporality of internationalisation as it enables the firm to accumulate knowledge and reduce the perceived risks and uncertainty in distant markets, which subsequently accelerates the firm's commitments to foreign markets (Ojala, 2015). Without sufficient learning, firms will have a tendency to delay internationalisation (Wu & Voss, 2015), resulting in a decay of their ability to gain benefits from international markets.

From a dynamic capability perspective, organisational learning in the context of internationalisation can be considered as a routine-based activity (Saka-Helmhout, 2010). Organisational routines serve as organisational memory and help firms build knowledge stock (Cohen & Bacdayan, 1994). Routinization is relevant to internationalisation speed, because it allows for a rapid processing of large amounts of diverse market knowledge with little effort (Laureiro-Martinez, 2014). Knowledge acquired from diversification of foreign markets and modes of operation is stored in



organisational routines. Moreover, organisational routines are characterised by a tendency to change over time (Rerup & Feldman, 2011), as routines have been considered as a source of flexibility and change (Feldman & Pentland, 2003). Variations triggered either by acquisition of distant knowledge and changes in firm strategies, or by discrete shifts in external environments, would lead to modification of existing routines (Durand, 2006). These dynamic interactions involve knowledge acquisition and creation, and are useful for the firm's adaptation to rapidly changing business environments (Yi et al., 2016). Recognition of organisational learning as a routine-based activity provides a micro perspective with which to examine the development of dynamic capabilities in the context of internationalisation.

### **3.2.3 Integration of action- and cognition- based approaches**

As reviewed before, two theoretical approaches, namely, action-based versus cognition-based approaches, have been proposed to examine the development of organisational routines that underlie dynamic capabilities. However, the action-based approach has captured more attention. The action-based approach considers repetition of actions as the primary mechanism that drives the development of the building blocks of dynamic capability. The action-based approach gives all explanatory power to exogenous variables, namely actions and repetition (Verreynne, Hine, Coote, & Parker, 2016). Meanwhile, the cognition-based approach suggests that managers' mental models and their preference towards a specific information processing style influence a firm's information seeking scope and the amount of resources committed to the information collection process, which thereby affects the development of dynamic capability at firm level. The cognition-based approach focuses on endogenous stimuli and assumes that managerial preference in terms of information processing style leads to changes in organisational routines (Felin & Foss, 2011). These two research streams have essentially developed along parallel but separate paths (Eggers & Kaplan, 2013). While each of the approaches has its strengths, they also have inherent deficiencies. The action-based approach fails to consider how the managerial interpretation of the external environment may influence the outcomes, while the cognition-based approach downplays the influence of repetitive actions. The complementary relationship provides the rationale for integrating these two approaches.

Rooted in the action-based approach, actions taken to diversify geographic scope and modes of operation provide a basis for the development of dynamic capability and absorptive capacity in particular, as these actions determine the breadth and depth of searches for external knowledge (Sun & Anderson, 2010). At the same time, the assimilation and combination of externally acquired knowledge with internally stored knowledge involves knowledge creation and change over time, which can cause modification of absorptive capacity (Clarke et al., 2013; Lewin et al., 2011). The action-based approach in the dynamic capability literature has laid a theoretical foundation to address research gaps regarding the relationship between organisational learning and internationalisation. Specifically, the importance of organisational learning in internationalisation has been clear in empirical studies (Acedo & Jones, 2007; Casillas & Moreno-Menéndez, 2014). Notable among these findings, a significant amount of research attention has been paid to the effect of organisational learning on knowledge accumulation and subsequent international expansion. However, little research has examined how internationalisation speed influences dynamic capability (Felin and Foss, 2011; Clarke *et al.*, 2013), and even less is known about how absorptive capacity interacts with firm strategy in internationalisation speed to influence firm performance (Teece, 2014a).

Moreover, organisational learning is path dependent. Prior experience constitutes the foundation of the current absorptive capacity and influences its development over time. Specifically, prior experience directs the scope of a firm's information seeking and determines whether external knowledge can be recognised and absorbed. Therefore, it is also critical to consider the influence of prior experience on the development of absorptive capacity.

In addition to firm-level dynamic capabilities, managerial cognition also plays a crucial role in the internationalisation process, since managers or owners assess external environments and make strategic decisions accordingly. Previous research has examined how the prior experience and social ties of the managers or owners influence their interpretation of and responses to international opportunities. The literature on managerial cognition suggests that managers' or owners' cognition shapes the focus of attention and influences the interpretation of external challenges (Chaston & Sadler-Smith, 2012; Plambeck, 2012), which subsequently affects whether and how quickly

firms react to external challenges and maintain competitive (Marcel et al., 2011). Rational decision-making and heuristic decision-making have been identified as two distinctive cognitive systems for individuals when involved in decision-making (Evans, 2008). Decision-making regarding internationalisation is an information intensive process, which requires the collection of market and institutional information. Differences in managerial cognition lead to significant differences in the amount of information required for decision-making and the amount of resources committed to information collection. The cognition-based approach provides a theoretical foundation to examine whether and how managerial cognition can act as a valid factor to explain the heterogeneity in firm internationalisation processes and performance outcomes. This answers the call to directly incorporate the concept of managerial cognition into the theoretical models of internationalisation (Maitland & Sammartino, 2015).

In addition, the characteristics of knowledge environments influence the effectiveness of cognitive processing and cause variety in the selection of decision-making logic (Nummela et al., 2014). Thus, market dynamism (reflecting changes in market knowledge) should also be incorporated into the conceptual framework in order to identify boundary conditions for managerial cognition's influence on organisational processes and strategic outcomes (Kaplan, 2011).

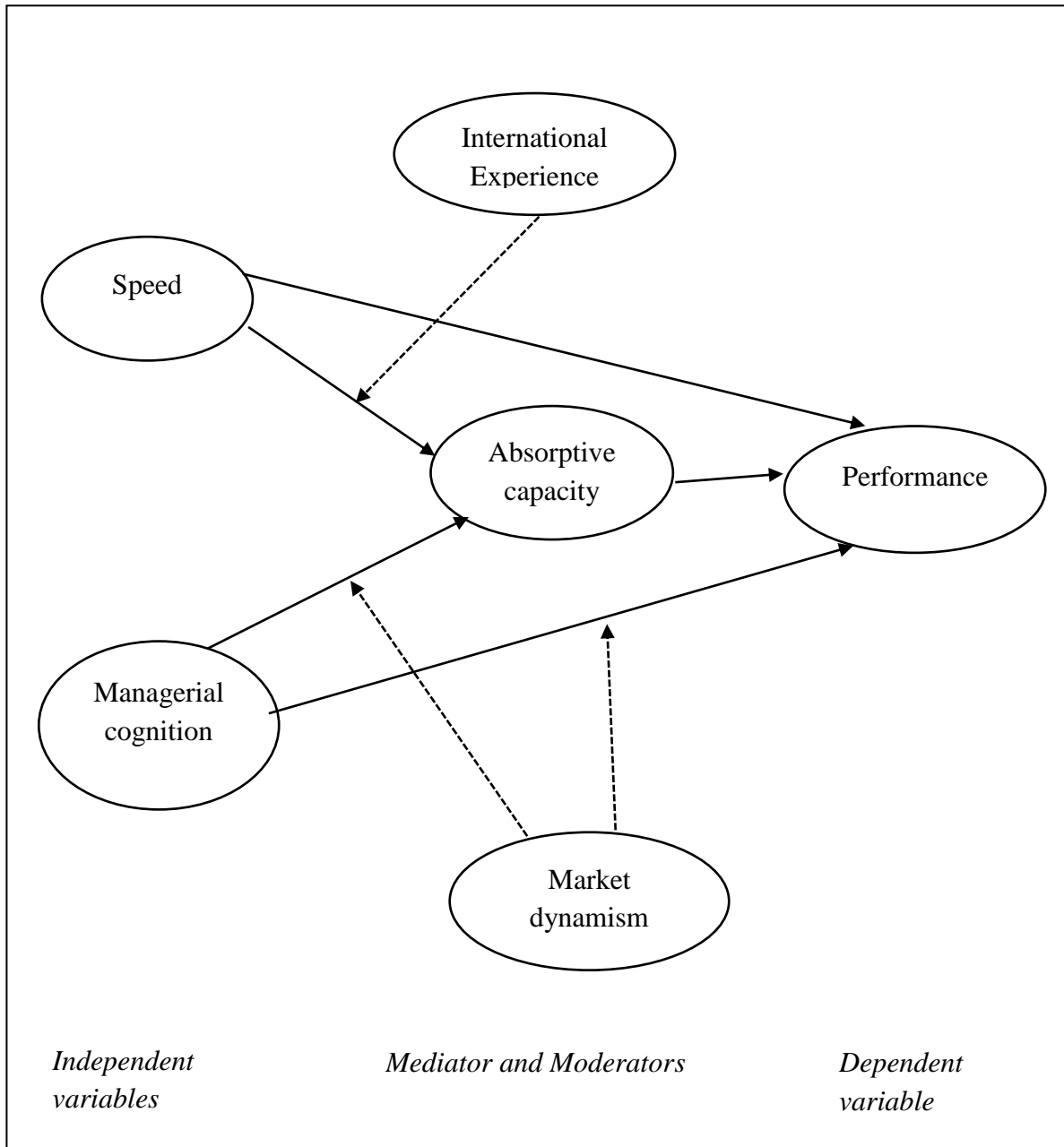
As discussed in Chapter two, post-entry speed and managerial cognition represent two critically important but neglected factors in existing internationalisation theories. Rooted in dynamic capability theory, the present study aims to examine the direct influence of post-entry internationalisation speed and managerial cognition on firm performance, and contingent conditions of the influence. Incorporating absorptive capacity, prior international experience, and market dynamism into the internationalisation model provides a micro perspective to understand the mechanisms of organisational learning and decision-making that affect firm internationalisation and performance outcomes. By adopting a dynamic capability perspective, and following action- and cognition- based approaches, a conceptual framework was developed to guide the present study, which is summarised in **Figure 3-1**.

First, this framework depicts the performance implications of post-entry internationalisation speed and managerial cognition as the baseline relationships.

Further on, contingent conditions for these baseline relationships are examined at the firm level and individual level respectively. At the firm level, it is assumed that the baseline relationship between post-entry internationalisation speed and performance is contingent on the influence of factors drawn from the dynamic perspective. More specifically, it is expected that a firm's post-entry internationalisation speed will have a direct effect on its absorptive capacity and that this direct speed-absorptive capacity relationship will be moderated by the firm's international experience. In turn, absorptive capacity will play a mediating role on the direct relationship between post-entry internationalisation speed and performance. At the individual level, it is expected that different decision-making styles in terms of managerial cognition will directly influence dynamic capability and performance at the firm level and that direct effects of managerial cognition will be moderated by market dynamism as the contingent conditions imposed from the external environment.

Guided by this conceptual framework, the next section discusses relevant theoretical constructs and develops a rationale for each of the hypothesised relationships.

**Figure 3-1 Conceptual Framework**



### **3.3 Hypotheses Development**

This section presents research hypotheses that were developed to substantiate the conceptual framework. Based on existing conceptual and empirical studies, the performance implications of post-entry internationalisation speed and decision-making styles are firstly postulated, followed by the hypothesised direct relationship between post-entry internationalisation speed and absorptive capacity, and between decision-making styles and absorptive capacity, respectively. Then, the interaction effects, including the mediating role played by absorptive capacity as well as the moderating roles of prior experience and market dynamism, are proposed.

#### **3.3.1 Performance effects of post-entry internationalisation speed and decision-making styles**

##### **3.3.1.1 Post-entry internationalisation speed and firm performance**

Survival and growth in heterogeneous institutional settings depend on organisational learning and capability development (Johanson & Vahlne, 2009; Prashantham & Young, 2011; Sui & Baum, 2014). Few firms start internationalisation with a heritage of well-developed capabilities that are conducive to internationalisation (Autio et al., 2011). More often, firms depend on learning and development of new capabilities to overcome liabilities of foreignness and newness, and ultimately generate benefits from international expansion (Autio et al., 2011; Johanson & Vahlne, 2009). In the post-entry stage, organisational learning is mainly confined to knowledge about national systems, customers, political frameworks, institutions, rules, and norms in foreign markets, as well as knowledge about modes of operation (Casillas & Moreno-Menéndez, 2014). The diversification of foreign markets and entry modes enlarges firms' stock of knowledge, which in turn enables them to withstand high uncertainty arising from changes in the external environments (Johanson & Vahlne, 1990). Moreover, the development of new capabilities improves firms' responses to opportunities and risks in foreign markets. The processes of organisational learning and development of new capabilities require the commitment of extensive time and resources, which makes it hard for imitators to replicate (Knott et al., 2003). Thus, durable competitive advantages are built, and ultimately help firms achieve superior performance (Heimeriks &

Duysters, 2007; Ren et al., 2015; Riviere & Suder, 2016). To examine the performance implications of rapid international expansion, it is important to consider the influential role played by time in the effectiveness of learning and capability development.

Previous research has suggested that international new ventures possess some advantages over traditional internationalisers in terms of learning and capability development (Autio et al., 2000). The development of new resources, organisational routines and capabilities that are required for the pursuit of international opportunities may cause conflicts with existing embedded routines and reveal the necessity to unlearn them. Compared with traditional internationalisers, international new ventures are less constrained by pre-existing routines and possess higher levels of learning flexibility, which put them in an advantageous position to learn and explore opportunities in foreign markets (Zhou, Wu, & Barnes, 2012). In addition to this cognitive impediment to learning, the more effort firms have devoted to building relationships with domestic partners, the more resistance they will have when shifting their major attention to foreign markets, and the more likely they will focus on the negatives of exploring foreign markets (Autio et al., 2000).

The premise of the learning advantages of newness is also relevant to on-going international expansion. As argued before, internationalisation brings firms learning benefits. Compared to slow internationalisers, fast internationalisers are more progressive in applying different modes of operation to pursue opportunities in diverse foreign markets. The on-going and increasingly diversified international exposure provides firms with more learning opportunities and forces them to develop and adapt their capabilities to suit the need for rapid internationalisation. In contrast, firms that slowly increase international engagement are likely to develop organisational routines and structures based on experiences accumulated from domestic markets. These organisational routines are inappropriate for pursuing international opportunities. The previously built organisational routines need to be dismantled or modified to suit the needs of internationalisation. Compared to faster internationalisers, slow internationalisers face stronger inertial forces and it requires intensive and repeated processing to deconstruct their existing rigid routines (Autio et al., 2000). This process requires the commitment of a significant amount of time and resources and it incurs costs, which impairs firm performance (Hilmersson et al., 2017). Accordingly, fast

internationalisers enjoy more learning advantages in comparison to slow internationalisers.

On the other hand, when firms internationalise too fast, the learning advantages will erode, and the marginal effect of time compression diseconomies will arise at an increasing rate. 'Time compression diseconomies' refers to the fact that inefficiencies and additional costs will occur when resources and capabilities are developed too fast (Knott et al., 2003; Pacheco-de-Almeida & Zemsky, 2007). Its negative influence is further exacerbated in hyper-competitive environments due to the rapid imitation and innovation in these uncertain environments (Pacheco-de-Almeida, 2010). The emergence of time compression diseconomies negatively influences the durability of the competitive advantages (Jiang et al., 2014).

Time compression diseconomies are applicable to learning processes (Jiang et al., 2014). Learning is most efficient in domains close to an existing knowledge base (Cohen & Levinthal, 1990). When firms extend their geographic reach and diversify modes of operation too fast, the learning need as well as the complexity and diversity of knowledge will increase exponentially (Chetty & Campbell-Hunt, 2003; Jiang et al., 2014). Fast expansion leaves firms little time to assimilate the complex knowledge, which may lead to deficiencies in organisational learning. As a consequence, firms are more likely to make or repeat mistakes (Jiang et al., 2014; Zollo & Winter, 2002). The knowledge accumulated from previous international ventures may not be sufficiently absorbed and/or appropriately re-used in the subsequent international expansion.

Time compression diseconomies highlight that the developmental process of capabilities should also not be rushed. If a firm wishes to accelerate this capability development process, it has to endure high costs. Specifically, each foreign market entry and application of a different mode of entry requires a significant commitment of resources. The resources committed to international expansion are irretrievable. Fast international expansion will stretch the thin resource base of SMEs, which will aggravate the liabilities of smallness of SMEs in international markets (Autio et al., 2000).



In addition to firm resources, managerial resources set a limit on how fast a firm can grow. As a scarce resource, managerial attention influences the interpretation of external stimuli, which in turn affects the deployment of organisational resources and routines to pursue opportunities (Peeters, Massini, & Lewin, 2014; van Knippenberg, Dahlander, Haas, & George, 2015). Moreover, entrepreneurs and managers are rationally bounded. Their cognitive limits prevent them from developing a complete understanding of the external environments. The rapidly increasing complexity and diversity of international experience further exacerbates their imperfect decisions regarding the configuration and orchestration of resources to pursue opportunities in foreign markets, thus increasing the risk of failure (Kor & Mesko, 2013; Nadkarni & Barr, 2008).

Based on the above discussion, the performance implications of a fast internationalisation depends on learning and capability development. The exposure to the diverse foreign markets and modes of operation constitutes the source and foundation of the development of new capabilities that are conducive to internationalisation. When expanding abroad at a moderate speed, firms are able to enjoy the learning advantages and accordingly build capabilities required for internationalisation, therefore improving firm performance. However, when firms internationalise too fast, the learning advantages will erode, and the marginal effect of time compression diseconomies will arise at an increasing rate, as fast expansion leaves firms little time to assimilate the complex knowledge, which may lead to deficiencies in learning and capability development. Meanwhile, international expansion at too slow a speed leads to the rise of inertial forces, which will impair performance. Therefore, the following hypothesis is proposed:

**H1:** A firm's post-entry internationalisation speed influences its performance through an inverted U-shaped curvilinear relationship.

### **3.3.1.2 Decision-making styles and firm performance**

Managers or owners play a crucial role in assessing external environments and determining strategic decisions. When making strategic decisions, managers and owners may devote cognitive efforts to predicting future scenarios and strategies outside their

context or rely on their beliefs and experience (Felin, Foss, Heimeriks, & Madsen, 2012). According to behavioural theory, individual differences in decision-making styles provide a micro perspective to explain heterogeneity in organisational outcomes.

Prior studies have emphasised rational analysis as an important cognitive processing in strategic decision-making, and suggested that rational decision-making improves the effectiveness of entrepreneurial behaviours, and facilitates goal achievement, thus leading to enhanced performance (Chwolka & Raith, 2012; Priem et al., 1995). Rational decision-making is characterised by pre-determined strategic goals, profit-maximisation orientation, deliberate planning and controlling, and systematic information gathering (Chandler, DeTienne, McKelvie, & Mumford, 2011; Dew, Read, Sarasvathy, & Wiltbank, 2009; Sarasvathy, 2001). Market research and competitive analysis enable decision-makers to make qualitative judgements on changes in external environment. Systematic information scanning and deliberate analysis of information about the status quo not only enable decision-makers to reduce uncertainty and predict prospective developments (Futterer, Schmidt, & Heidenreich, 2018), but also help them make an alignment between firm resources and entrepreneurial opportunities (Deligianni et al., 2016). Based on a comprehensive understanding of the firm's capacities and competitive advantages, decision-makers make appropriate assessments of all possible options and select those with the highest expected return (Villani, Linder, & Grimaldi, 2018). Deliberate planning and controlling facilitates goal achievement by specifying effective steps to achieve pre-determined strategic goals (Brinckmann, Grichnik, & Kapsa, 2010). Deviations from plans can be identified and controlled, thus improving the effectiveness of entrepreneurial behaviours and ultimately generating superior performance (Brinckmann et al., 2010).

However, when using rational decision-making logic, decision-makers try to predict an uncertain future. Business environments, especially in global markets, are dynamic and unstable. The decision-making process in dynamic business environments is complicated by noisy and ambiguous information (Maitland & Sammartino, 2015). Moreover, the cause-effect relationships in a business context will not be easily uncovered for several reasons (Gigerenzer & Gaissmaier, 2011). For example, outcomes for strategic choice rarely have one single cause: instead of operating in isolation, causes may interact with each other, and causes may be context-dependent (Villani et al.,

2018). It is reasonable to assume that managers or owners may reap significant gains by using the logic of rational decision-making, when it is possible to make reasonable accurate predictions of the future (Welter & Kim, 2018). However, a manager's or owner's predictive accuracy is contingent on the quality and quantity of available information relevant to the decision. As the quality and quantity of available information increases, the accuracy of prediction improves. In contrast, when available information is fragmented and inaccurate, a prediction about the future may be questionable.

In addition, there are some concerns associated with the assumption of full rationality by decision-makers (Aharoni et al., 2011). First, decisions inherently carry a risk of systematic bias. Not all information relevant to decision-making will be selected and utilized in rational analysis. Moreover, it is difficult to determine the weighting of discrepant information. Ineffective weighting of diverse information may seriously distort the accuracy of prediction and subsequently hamper firm performance (Gigerenzer & Gaissmaier, 2011). Second, individuals have cognitive limitations and their rationality is bounded. Individuals are seen to be rational within the limits of their own capabilities (Elbanna & Child, 2007). It is highly challenging for decision-makers to develop a comprehensive and unbiased understanding of the external environment. A dynamic environment, filled with fragmented and uncertain information, will magnify the detrimental influence of bounded rationality on prediction (Elbanna & Child, 2007).

As opposed to rational decision-making, heuristic decision-making relies on heuristics, which provide a common structure for a range of similar problems, but supply few details regarding specific solutions to address them (Bingham & Eisenhardt, 2011). Heuristics allow decision-making without costly acquisition of information, since they do not rely on diverse information (Loock & Hinnen, 2015). Heuristics provide clues about which kind of information should be searched for in the context of a particular decision, and when to stop information collection (Czerlinski, Gigerenzer, & Goldstein, 1999). They reduce the complex tasks of estimating probabilities and predicting values to simpler judgemental operations, which enables individuals to ignore some information, simplify cognitive processes, and speed up the process of decision-making (Gigerenzer & Gaissmaier, 2011). Compared to rational analysis, heuristics may be

more efficient in decision-making in a real business environment (Bingham & Eisenhardt, 2011; Loock & Hinnen, 2015).

More importantly, heuristics may outperform analytically complicated and information-intensive approaches by providing more accurate strategic decisions (Bingham & Eisenhardt, 2011). Heuristics are cumulatively developed/selected from prior experience and systematically evolve with external environments (Gigerenzer & Gaissmaier, 2011), which improves the accuracy of heuristics in exploiting information in business environments. Heuristics can be simplified over time and with experience, and thus have been considered a source of organisational adaptability, and a key type of dynamic capability (Bingham & Eisenhardt, 2011; Loock & Hinnen, 2015) enabling decision-makers to deal with environmental contingencies and achieve superior firm performance. Empirically, through an interactive, computer-based simulation of managing new product launch and life cycle dynamics, Gary and Wood (2011) found that decision-makers do not need all the detailed information of the entire business environment, and that an accurate mental model of the key principles is sufficient to achieve superior performance. Similarly, Bingham and Eisenhardt (2011) found that opportunity-capturing heuristics enable the firm to build competitive advantages by capturing opportunities faster and more effectively than rivals.

Based on the above discussion, the performance implications of rational decision-making cannot be easily unravelled. In fact, the relationship between rational decision-making and firm performance is highly contingent upon the quality and quantity of available information. In other words, the influence of rational decision-making on firm performance tends to be context-dependent. In contrast, heuristic decision-making enables individuals to make faster decisions with limited information. Furthermore, through the simplification process, heuristics enable accurate use of external information. Accordingly, the following hypotheses are proposed:

**H2a:** There is no significant relationship between rational decision-making and firm performance.

**H2b:** Heuristic decision-making positively affects firm performance.

### **3.3.2 The influence of post-entry internationalisation speed and decision-making styles on absorptive capacity**

#### **3.3.2.1 Post-entry internationalisation speed and absorptive capacity**

The discussion about performance implications of rapid international expansion has highlighted the importance of learning and capability development. In this section, the process of learning and capability development in the context of internationalisation is re-visited by directing the research attention to the formation and evolution of organisational routines that are considered the micro-foundations of dynamic capabilities, so that the relationship between internationalisation speed and absorptive capacity can be revealed. As the building blocks of dynamic capabilities, organisational routines are critical to understanding how firms change and adapt in rapidly changing environments (Karna, Richter, & Riesenkampff, 2016; Yi et al., 2016).

Absorptive capacity is considered a specific type of dynamic capability that enables the firm to assimilate and exploit valuable external knowledge and subsequently capitalise on changes in the business environment (Rodríguez-Serrano & Martín-Armario, 2017). Absorptive capacity consists of a bundle of learning routines (Zahra & George, 2002), and serves as organisational memory, helps the firm build the stock of international knowledge (Cohen & Bacdayan, 1994). Knowledge embedded in organisational routines can speed up as well as simplify decision-making about entry into institutionally close markets or application of similar entry modes (Laureiro-Martinez, 2014).

Development and evolution of organisational routines can be seen as a direct result generated from repeated actions (Lewin et al., 2011). Knowledge accumulated from past organisational activities constitutes a basis for the current organisational routines (Zollo & Winter, 2002). Knowledge accumulated from international exposure provides a crucial input to the formation of organisational learning routines underlying absorptive capacity (Pentland et al., 2012). Repetition of previous actions is the primary mechanism that drives development of organisational routines (Pentland, Hærem, & Hillison, 2010), and thus opens a door to potential organisational learning (Anand, Mulotte, & Ren, 2016). With the help of repetition, the firm can easily identify common

traits among past actions, which facilitates the firm's decision on which repetitive actions should be retained and incorporated into existing organisational routines (Castellaneta & Zollo, 2015). Repetition also helps firms retain the capability (Anand et al., 2016). Firms are found to have a strong tendency to repeat actions associated with the highest performance in the past (Anand et al., 2016). In the international context, success in certain foreign markets or particular entry modes can stimulate entry into similar markets or adoption of similar entry modes (Johanson & Vahlne, 1990). Thus, the capabilities developed from previous successful market entry or adoption of entry modes are consolidated by replication in a similar context.

The development of dynamic capabilities relies on the underlying organisational routines that can actually change (Winter, 2003). Changes of organisational routines can be triggered by the stimuli either internal or external to the organisation (Rerup & Feldman, 2011). In the context of internationalisation, organisational routines underlying absorptive capacity can change through acquisition of new knowledge. When firms enter into distant foreign markets or apply more intensive entry modes, it may be impractical to replicate the existing organisational routines. Organisational routines can be modified by combining newly acquired knowledge with existing knowledge (Clarke et al., 2013; Lewin et al., 2011), or be replaced with new routines that are developed through a trial-and-error learning process (Rerup & Feldman, 2011). Moreover, firms need to continually scan the environment and monitor their competitors in order to sustain or improve their positions in the rapidly changing markets (Walter, Auer, & Ritter, 2006), or build competitive advantages ahead of their competitors in new markets (Hawk et al., 2013). The firm's observation of competitors' behaviour regarding their resource deployment and reconfiguration triggers a modification of existing routines or replication of the efficient routines that already exist in external environments. Discrete shifts in customer preferences and technology may also trigger the modification of existing organisational routines or creation of new ones (Durand, 2006).

The generation and modification of organisational routines in response to stimuli in the context of internationalisation provides solid ground for the assumption regarding the presence of a relationship between internationalisation speed and absorptive capacity. However, internationalisation speed determines the scope and efficiency of

organisational learning (Sun & Anderson, 2010), as well as the rate of routine-level changes (Yi et al., 2016). It is unlikely that internationalisation speed would affect absorptive capacity in a linear relationship. The change of organisational routines is path-dependent and shaped by history (Ben-Oz & Greve, 2015). Performance feedback is critical for the adaptation of absorptive capacity over time (Ben-Oz & Greve, 2015). Performance below the aspirational level intensifies firms' efforts to absorb new knowledge, which leads to the building-up of absorptive capacity. Moreover, the learning process of performance feedback should take into account the timing issue of how to best link actions and performance outcomes (Ben-Oz & Greve, 2015). Fast international expansion leaves firms little time to identify and digest the causal linkage between actions they have taken and performance outcomes they have achieved. The increased degree of ambiguity regarding causal linkage negatively affects the development of organisational routines (Zollo & Winter, 2002). Furthermore, knowledge accumulated from the firm's internationalisation is location- and type-specific (Buckley, Elia, & Kafouros, 2014). Internationalisation speed reflects the changes to international knowledge stock in scope and diversity over time (Argote & Miron-Spektor, 2011). Rapid internationalisation indicates acquisition of more diverse international knowledge per unit of time (Clarke et al., 2013). The complexity and diversity of international knowledge increases the difficulty of making appropriate inferences from past international activities.

On the other hand, international expansion at too slow a speed is also harmful to development of the firm's absorptive capacity. Slow internationalisers tend to have strong dependence on domestic markets and may confine their international activities to a few geographically and/or psychically-close foreign markets (Baum et al., 2015). Due to similarities in these institutional contexts, slow internationalisers may not allocate resources to develop new capabilities (Sapienza et al., 2006). Subsequently, inertia in organisational routines will arise (Pentland et al., 2012), which can hinder organisational adaptation (Yi et al., 2016) and damage development of dynamic capabilities (Teece, 2012; Winter, 2003). After waiting for a long period between foreign markets entry or depending too much on a single mode of foreign operations, firms tend to be less motivated to develop a capacity for learning and absorbing new knowledge (Yang et al., 2017). Moreover, knowledge acquired from past international activities is likely to depreciate with the passage of time. Knowledge may become no

longer relevant in the rapidly changing business environments (Berends & Antonacopoulou, 2014), or be forgotten due to low demand, personnel turnover and other unidentified reasons (Argote & Miron-Spektor, 2011; Darr & Argote, 1995; I. Kim & Seo, 2009). Firms are less likely to gain benefits from obsolete knowledge. As a result, the loss or downgrade of knowledge accumulated in past international activities would result in a decay of firms' absorptive capacity.

Based on the above discussion, the following hypothesis is developed:

**H3.** Internationalisation speed influences absorptive capacity in an inverted U-shaped curvilinear relationship.

### **3.3.2.2 Decision-making styles and absorptive capacity**

As discussed in the last section, the action-based approach suggests that the automated and repetitive response to environmental stimuli can act as the origin of organisational capabilities. However, opponents of the action-based approach claim that this view overlooks the role played by managerial cognition in the development and deployment of organisational routines (Koumakhov & Daoud, 2016; Safavi & Omidvar, 2016). This ignites increasing interest in the cognitive micro-foundation of capability development. Unlike the action-based approach, the cognition-based view explains the emergence of organisational capabilities through the interplay between managerial cognition and strategic actions (Autio et al., 2011). Managerial cognition theory suggests that managers perceive things through their own cognitive lenses (Volberda et al., 2010). Managerial cognition, consisting of managers' or owners' mental structure and mental processes, influences how they observe and interpret environmental changes, and subsequently translate those subjective interpretations into strategic actions (Koumakhov & Daoud, 2016). Thus, managerial cognition is considered the key regulator of organisational actions and subsequent routine development (Gavetti, 2005). As the micro-foundation, managerial cognition contributes to the heterogeneity in dynamic capabilities and ultimately firm performance (Helfat & Peteraf, 2015). The literature on managerial cognition provides another lens to examine capability emergence.



Characteristics of the rational decision-making process influence inflow and utilization of external knowledge (Volberda et al., 2010). Rational decision-making is designed to increase knowledge about the status quo and predict prospective development (Futterer et al., 2018). Managers or owners with a preference for rational decision-making have a belief in the causal relationship between the environment and strategic actions. Specifically, managers or owners who favour rational decision-making undertake strategic actions to realign the environment-action fit following an environmental change (Nadkarni & Barr, 2008). This emphasis on understanding environmental changes before undertaking strategic actions directly affects the allocation of managerial attention to learning from external sources (Bettis-Outland, 2012), since a proper “fit” response results from systematic information gathering from external sources and continuous market surveillance (Hough & White, 2003).

Rationality is a significant component in the development of routinized behaviour for learning (Laureiro-Martinez, 2014). It is suggested that mindfulness to cues from both internal and external environments can affect how routines are developed and altered (Salvato, 2009). Following rational decision-making, managers or owners depend on intensive information to develop an understanding of what actions should be undertaken. The perceived need for systemic information gathering stimulates the intentional development of routines that are conducive to information seeking and collection from external environments (Eggers & Kaplan, 2013).

Rational reasoning fosters creation of an internal environment that facilitates free elaboration and exchange of information (Kristinsson, Candi, & Sæmundsson, 2016). Information collected from external environments is used to set persistent goals and to evaluate alternatives for achieving them. These intensive cognitive processes increase the interaction between managerial team members in order to reach an agreement on goal setting, which enhances knowledge sharing. Moreover, the pre-determined goals assist managers or owners in evaluating the usefulness of existing organisational routines (Kaplan, 2008). Reflection on the performative and ostensive aspects of organisational routines help managers or owners select which routines should be retained and what changes should be introduced (Dittrich, Guérard, & Seidl, 2016).

When using heuristic decision-making, managers or owners attempt to change or construct business environments through their strategies, instead of developing strategies in response to environmental changes (Nadkarni & Barr, 2008). Heuristics that are simplified over time enable managers or owners to capture opportunities (Bingham & Eisenhardt, 2011). Heuristics capitalize on learning (Bingham & Eisenhardt, 2011) and are developed through process experience, and fine-tuned as experience increases (Gigerenzer & Gaissmaier, 2011). The transition from a novice to an expert implies a progression of organisational learning, which contributes to capability creation (Bingham & Eisenhardt, 2011). Heuristics provide some direction for information seeking (Vuori & Vuori, 2014), which may bring new knowledge and prompt changes in organisational routines underlying absorptive capacity. However, organisational learning guided by heuristics may also be constrained to a certain scope and types of knowledge. A high similarity between newly acquired information and pre-existing knowledge may not lead to an improvement in absorptive capacity. Therefore, the influence of heuristic decision-making on absorptive capacity development cannot be easily revealed.

Based on the above discussion, the following hypotheses are proposed:

**H4a:** Rational decision-making positively affects absorptive capacity.

**H4b:** Heuristic decision-making has no significant influence on absorptive capacity.

### **3.3.3 The mediating effect of absorptive capacity**

Firm strategies determine the scope of knowledge searches and the intensity of efforts devoted to absorbing valuable knowledge (Lane, Koka, & Pathak, 2006; Martinkenaite & Breunig, 2016). When involved in international expansion, the firm must capitalize on external knowledge to overcome liabilities of foreignness and newness, so that it can build competitive advantages in a foreign market (De Prijcker, Manigart, Wright, & De Maeseneire, 2012; Fletcher & Harris, 2012; Foss, Lyngsie, & Zahra, 2013; Johanson & Vahlne, 1990). Acquisition and utilization of external knowledge in the internationalisation process would improve the firm's ability to perceive and assess risks associated with market entry, resulting in a positive effect on the firm's

competitive advantage and eventually on its performance (Hart et al., 2016; Ojala, 2015; Petersen et al., 2008). However, geographic expansion at too fast a speed and/or intensive use of high commitment entry modes would exponentially increase the complexity and diversity of knowledge, which may result in inefficient learning. In addition, organisational learning eventually creates competency traps, where existing procedures are repeatedly applied to perform activities, hindering the firm's adaptation to changes in external environments (Levitt & March, 1988; Wang, Senaratne, & Rafiq, 2015). Firms need to refine existing routines by constantly absorbing new knowledge from external environments. Moreover, unexpected changes in international markets may disrupt the learning process and challenge the firm's learning ability. Therefore, rapid internationalisation requires firms to possess a dynamic capability, which would enable them to capitalize on external knowledge in an adaptive way, so that they are able to address challenges arising from the rapidly changing global environment (Rodríguez-Serrano & Martín-Armario, 2017). Absorptive capacity, as a type of firm dynamic capability that mediates the inflows of external knowledge (Moilanen et al., 2014), fits the requirements of rapid internationalisation for knowledge acquisition and application.

Fast international expansion exposes the firm to various contexts in which behaviours of customers, suppliers and competitors as well as economic and institutional contexts are different. The greater diversity of the knowledge implies the emergence of opportunities with a high volume, scale and degree of novelty (Chandra, Styles, & Wilkinson, 2015; Eckhardt & Shane, 2003; Hill & Birkinshaw, 2010), which is connected to growth and high value. Built upon prior experience, absorptive capacity has a direct impact on firms' alertness to international opportunities (Arentz et al., 2013; Shane, 2000). Absorptive capacity, and its potential dimension in particular, reflects firms' ability to scan and assimilate new information from external sources (Tang, Kacmar, & Busenitz, 2012). Access to new information allows firms to connect previously disparate information, which increases the number and quality of opportunities that firms can identify among many possibilities (Engelen, Kube, Schmidt, & Flatten, 2014). When firms repeat their past successful international activities, absorptive capacity will become a source of inertia. The degree of novelty of opportunities that firms can identify will accordingly decrease (Hilmersson & Papaioannou, 2015).

The increasing variation in market conditions, institutional contexts, and complexity of operation modes resulting from a rapid international expansion escalates the level of uncertainty and risk perceived by firms. The uncertainty and risk residing in the context of decision-making hinders the comprehension of potential opportunities and prediction of future outcomes (Cornelissen & Clarke, 2010; Welter & Kim, 2018), subsequently limiting the scope and effectiveness of the entrepreneurial actions that firms undertake to commercialise these opportunities (Liesch et al., 2011). A greater amount of relevant knowledge helps firms mitigate the inherent risk and uncertainty, thereby improving the decision-making climate (Liesch et al., 2011) and prescribing a course of appropriate actions. As a high-level learning capability, absorptive capacity determines the learning scope and the rate at which existing knowledge stock is renewed. External knowledge that is compatible with existing knowledge stock can be absorbed quickly. Absorption of distant external knowledge requires a transformation of cognitive structures, which can prolong or even terminate the process of knowledge absorption (Todorova & Durisin, 2007). A constantly renewed knowledge stock can efficiently reduce the uncertainty and risk associated with rapid internationalisation, thus speeding up and simplifying decision-making about resource commitment (Laureiro-Martinez, 2014).

However, identification and evaluation of new opportunities cannot guarantee performance improvement. In order to successfully and quickly act upon new opportunities, firms need to have the ability to combine pre-existing knowledge with the externally acquired knowledge, and also to have the ability to apply newly created knowledge to commercial ends. Absorptive capacity, and its realized dimension in particular, reflects such kinds of ability. Without realized absorptive capacity, firms may suffer from high costs of acquisition but gain no benefits from exploitation (Jansen, Van Den Bosch, & Volberda, 2005). Conversely, without updating the existing knowledge base, firms are more likely to fall into a competence trap, which would hinder their alertness and response to the rapid changes in the external business environment (Wang et al., 2015).

Based on the above discussion, fast internationalisation requires firms to learn fast and capitalize on external knowledge efficiently. Absorptive capacity enables firms to balance the learning rates at which new external knowledge is acquired and exploited (Lewin et al., 2011). Moreover, firms with strong absorptive capacity are able to pursue

new opportunities arising from rapid external changes and generate profits through the combination of external knowledge with internal existing knowledge. In the meantime, with strong absorptive capacity, firms are able to adapt to the external environment through constantly updating their knowledge base. Thus, the following hypothesis is proposed:

**H5.** Absorptive capacity mediates the direct relationship between internationalisation speed and performance.

### **3.3.4 The moderating effect of prior international experience and market dynamism**

#### **3.3.4.1 Prior international experience**

A firm's prior international experience is able to influence its absorptive capacity in the context of internationalisation, as learning is path dependent (Cohen & Levinthal, 1990). Prior international experience assists firms in their recognition and valuation of new external knowledge (Patterson & Ambrosini, 2015). Firms are more likely to identify and assimilate new external knowledge that has some overlap with their existing knowledge. The more prior international experience, the higher the degree to which external knowledge is compatible with internally stored knowledge (Casillas, Moreno, Acedo, Gallego, & Ramos, 2009). Furthermore, a wider knowledge base developed from long-time international exposure increases firms' potential to combine external knowledge with internally stored knowledge (Zhou & Guillén, 2015), which may lead to creation of new knowledge and contribute to the development of high-level learning routines (Wuyts & Dutta, 2014).

Moreover, the level of complexity and associated causal ambiguity influences the development of dynamic capabilities (Rockart & Dutt, 2015). Prior international experience influences the amount of cognitive effort committed to identifying causal linkages. The level of causal ambiguity with respect to performance implications is determined by the number of actions taken and degree of simultaneity among these actions (Zollo & Winter, 2002). In the case of rapid expansion in foreign markets and/or through different entry modes, the causal linkage between the actions taken and the

performance outcomes produced may become obscure. International experience accumulated from past international operations provides firms with a reflection of the likely causal linkage regarding the successes and failures associated with international expansion, which is helpful for firms to update their learning routines (Zollo & Winter, 2002). That is to say, a firm's prior experience provides a way to look at its past actions and outcomes in a sequential fashion, providing firms with hints about the potential cause-effect linkages (Felin & Foss, 2011). Thus, prior international experience is able to positively moderate the influence of internationalisation speed on absorptive capacity.

Nonetheless, the positive moderating effects of prior international experience on the inverted-U shaped relationship between internationalisation speed and absorptive capacity will be outweighed by the increasing inertial forces over time. As discussed before, firms with considerable international experience have a strong tendency to repeat actions associated with the highest performance in the past (Anand et al., 2016). However, rapid changes in external environments resulting from rapid internationalisation require the novel combination of existing knowledge or creation of new knowledge. The overly optimistic use of predefined practices hinders deliberate learning and generation of novel insights on new knowledge (Heimeriks, 2010), which stalls the development of dynamic learning capability (Delios, 2011). To make it worse, the action-outcome linkages that firms derived from prior experience may be incomplete or even inaccurate, especially when they conducted international activities in contexts with a high level of uncertainty (Mulotte, 2014). The reluctance to generate variations in extant practices independent of the level of prior experience or inability to experiment with alternative practices creates competence traps, which ultimately decreases dynamic learning capability (Mulotte, 2014; Wang et al., 2015).

In addition, benefits of prior international experience deteriorate quickly, since the experience accumulated from prior international activities depreciates over time (Benkard, 2000) or is not replicable in new market contexts. It has been found that in comparison to more recent experience, the experience acquired in the distant past is less valuable for organisational learning (Argote & Miron-Spektor, 2011). The loss or downgrade of prior experience over time would also lead to a decay of absorptive capacity.

Based on the above discussion, the following hypothesis is developed:

**H6:** Prior international experience moderates the effect of internationalisation speed on absorptive capacity, so that the inverted U-shaped curvilinear speed-absorptive capacity relationship would be stronger.

#### **3.3.4.2 Market dynamism**

Dynamism refers to both the rate of change and unpredictability of change in a firm's environment. Market dynamism denotes changes in customer preferences, regulations and modes of competition (Roberts, 2015). In a stable market, the changes are less frequent and more predictable, while in a dynamic market, the changes are rapid or even discontinuous (Schilke, 2014). Decision-making is contingent on the availability of information as well as the correlations between different information (Vuori & Vuori, 2014). Increasing dynamism in markets creates an information environment that is low in quality and determinacy. Thus, market dynamism is assumed to act as a contingent predictor of the relationship between decision-making and firm performance.

Markets with a high level of dynamism seem to be a hostile context for rational decision-making. Rational decision-making depends on careful scanning and analysis of the external environment, as well as on a comprehensive understanding of firms' capacities and competitive advantages, and appropriate assessment of all possible options (Chandler et al., 2011). Monitoring of the external environment aims to generate reliable predictions about future development and thereby to align existing resources and capabilities with predictable requirements. Rational managers or owners accrue profits as they act on the basis of probability estimates (Miller, 2007). However, in highly dynamic markets, the future is unpredictable. Information about market changes is often incomplete, inaccurate or obsolete. Cause-effect relationships among environment variables or environmental and organisational variables are too ambiguous to identify. The increased ambiguity of information, along with time pressure, imposes difficulties on managers or owners when they try to estimate the probabilities associated with a set of possible outcomes. The lack of informative knowledge required to undertake thoroughly rational analysis renders the concept of rational decision-making problematic in a highly dynamic environment (Elbanna & Child, 2007; Schubert et al.,

2018). Accordingly, the effectiveness of rational decision-making significantly decays as market dynamism increases.

In addition, the pursuit of entrepreneurial opportunities in dynamic environments is time-sensitive. Swift changes in either customer preferences or competition entail new opportunities. Windows for identification and exploitation of these potential opportunities are fleeting as the level of market dynamism increases (Heavey, Simsek, Roche, & Kelly, 2009). A window of opportunity could be missed as time goes by, because a comprehensive understanding of new opportunities through detailed analysis and planning is rather time consuming (Futterer et al., 2018; Harms & Schiele, 2012).

The increased ambiguity and time pressures prompt the need for fast and frugal decision-making approaches in a more dynamic business environment (Rusetski, 2014). Decision-making in the face of uncertainties requires information, but not necessarily extensive use of information (Mousavi & Gigerenzer, 2014). Given the temporal dependency of decision-making in dynamic environments, heuristic decision-making is likely to prevail. Prior research proposes that dynamic capabilities take on the form of fast and frugal heuristics in highly turbulent environments, whereas complex organisational routines are more common in moderately dynamic markets (Peteraf et al., 2013). Furthermore, from the perspective of opportunities, some researchers even suggest that the frequent opportunities provided by the rapid pace of a dynamic environment may diminish the need to ensure that each decision is fully rational (Hough & White, 2003).

Uncertainty is a defining feature of decision-making in a dynamic environment. In the face of uncertainties, heuristics enable decision-makers to make adaptive and timely responses to an uncertain business environment (Artinger, Petersen, Gigerenzer, & Weibler, 2015). As they evolve, heuristics, to some degree, reflect the structure of information in environments (Mousavi & Gigerenzer, 2014). By providing some direction, heuristics direct limited managerial attention to relevant and critical information, and help decision-makers make holistic associations between multiple stimuli in a timely manner and reduce cognitive effort. Moreover, by allowing some information to be ignored, heuristics provide decision-makers with more freedom to



improvise (Vuori & Vuori, 2014), which leads to flexible yet coherent capture of opportunities in dynamic environments (Bingham & Eisenhardt, 2011).

Based on the above discussion, the following hypotheses are developed:

**H7a:** Market dynamism negatively moderates the relationship between rational decision-making and performance.

**H7b:** Market dynamism positively moderates the relationship between heuristic decision-making and performance.

In addition to moderating the direct relationship between rational decision-making and performance, market dynamism is also able to moderate the relationship between rational decision-making and absorptive capacity. As the level of market dynamism increases, changes in a market become unpredictable. Managers' or owners' attention is a scarce resource. In a dynamic market, managers or owners need to direct their attention to varying signals in order to recognise new or unexpected situations and take proper actions when unusual events arise. The divided attention reduces decision-makers' propensity to routinize the actions that are undertaken by firms (Laureiro-Martinez, 2014). Improvisational actions are not candidates for routinization, unless they are repeated so that awareness of the repertoire of organisational activities is raised. In addition, awareness of the inadequacy of rational decision-making in the highly dynamic environment may reduce decision-makers' reliance on the process of information gathering, resulting in a decay of the organisational learning routines underlying absorptive capacity.

In contrast, market dynamism may positively moderate the relationship between heuristic decision-making and absorptive capacity. As argued before, heuristics capitalize on intensive learning, which contributes to capability development. Heuristics may constrain bias in information seeking by ignoring some of the available information, while also maintaining a degree of flexibility or variance, which benefits learning (Mousavi & Gigerenzer, 2014). The balance between these two aspects depends on the features of an external environment (Mousavi & Gigerenzer, 2014). In a dynamic environment where information is abundant yet unreliable, heuristics facilitate

organisational learning by reducing errors due to oversensitivity to the specifics of varying signals. In a stable environment where changes are predictable, heuristics may guide firm attention to familiar information sources and domains, which hampers the adaptation of organisational routines.

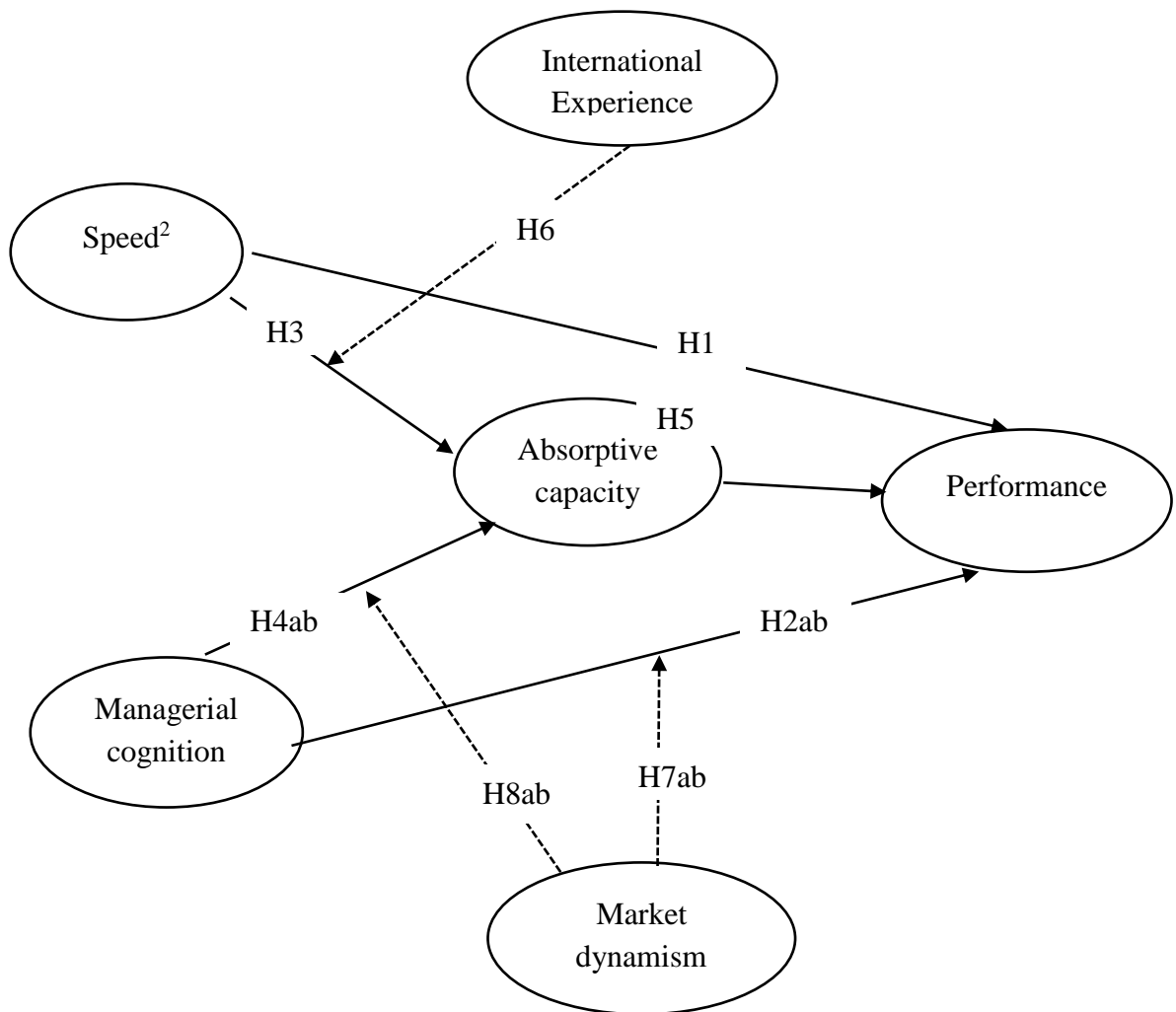
Based on the above discussion, the following hypotheses are developed:

**H8a:** Market dynamism negatively moderates the relationship between rational decision-making and absorptive capacity.

**H8b:** Market dynamism positively moderates the relationship between heuristic decision-making and absorptive capacity.

In summary, based on the conceptual framework regarding internationalisation speed, managerial cognition, dynamic capabilities, and firm performance, a set of eleven hypotheses (including five independent hypotheses and three pairs of sub-hypotheses) have been developed. **Figure 3-2** provides an illustration of all these hypotheses.

**Figure 3-2 Summary of hypotheses**



**Note:** H5 is about the mediating role of absorptive capacity in the relationship between post-entry internationalisation speed and performance.

## **Chapter 4 - Research Methodology**

### **4.1 Introduction**

For several decades, quantitative methodology has been widely applied in social science, although it originated in the natural sciences, such as mathematics, physics, chemistry, and biology (Antwi & Hamza, 2015). Quantitative methodology is concerned with phenomena that can be objectively observed and measured in some way. Alternatively, qualitative methodology is another research methodology that is used in social sciences, but which values the relationship between researchers and research subjects. Due to the differences in the world views or philosophies associated with these two research methods, there is an on-going debate in the literature regarding the strengths, weaknesses, and applicability of these two major types of methodology. The choice and adequacy of a research method embodies a variety of assumptions regarding the nature of knowledge and the methods through which that knowledge can be obtained, as well as a set of root assumptions about the nature of the phenomena to be investigated (Morgan & Smircich, 1980).

This chapter discusses the distinction between quantitative and qualitative research methodology from the perspectives of ontology, epistemology and human nature, as suggested by Burrell and Morgan (2017), in order to justify the appropriateness of quantitative methodology for this study. After that, the selection of New Zealand and Australia as the research setting is briefly discussed by highlighting their similarities in business demographics and strong reliance on both the Western and Asian markets. As for the research design, this chapter provides discussions about the target population and sampling method, the design of the online questionnaire, measures of all variables and the data collection procedure. This chapter ends with a detailed discussion about the data analysis techniques that are used in the data analysis, and a brief discussion about the methodological limitations.

## **4.2 Research Philosophy**

Quantitative and qualitative research derives from two different traditions of scientific philosophy. The fundamental difference between these two research methods lies in the issues of ontology and epistemology (Lincoln, Lynham, & Guba, 2011). In the following part, ontological positions and epistemological positions will be discussed in order to reveal the philosophical bases that underpin quantitative and qualitative research.

### **4.2.1 Ontological positions: Objectivism versus Constructivism**

Ontology, from the Greek words *onto* and *logia*, is the philosophical study of the nature of reality. It is concerned with articulating the nature and structure of the world (Wand & Weber, 1993). One stream of ontology, known as materialism, argues that the world is made up entirely of matter, and that the different characteristics of material objects, living things, people, and societies, and so on, can in principle be explained in terms of the greater or lesser complexity of the organisation of matter. This stream of ontology insists that objects in the world have an existence independent of consciousness (Crotty, 1998). The meaning solely resides in objects, not in the consciousness of the researcher (Scotland, 2012). Therefore, the aim of the researcher is to discover and obtain absolute and value-free knowledge about an objective reality. This ontological position is known as objectivism.

By contrast, another stream of ontology, known as idealism, argues that the world is populated by human beings who have their own thoughts, interpretations and meanings. The ultimate reality is mental or spiritual. This view insists that reality is constructed by human beings through their experience and it is a product of a social process (Neuman & Kreuger, 2003). Therefore, reality is individually constructed and differs from person to person (Lincoln et al., 2011). This ontological position is known as constructivism. Constructivists do not deny the existence of the real world but contend that the reality or knowledge stems from human beings' own interpretations of their experience (Ertmer & Newby, 1993). In other words, human beings create meaning as opposed to obtaining it.

In the domain of social sciences, the question concerns the fundamental nature of the social entity and its structure. There are on-going controversies about what the constituents of the social world are. One of the most basic disputes has to do with whether society itself is an independent reality in its own right (Benton & Craib, 2001).

#### **4.2.2 Epistemological stance: Positivism versus Interpretivism**

Epistemology, from the Greek words *episteme* and *logo*, is the branch of philosophy concerned with the theory of knowledge. Epistemology studies the nature of knowledge, the scope of knowledge and how to generate legitimate and justified knowledge (Johnson & Duberley, 2000). Some epistemologists hold a “rationalist” view of the nature of knowledge. They advocate that knowledge arrives at absolutely certain conclusions by formal reasoning (Descartes, Haldane, & Ross, 1951). Modern epistemologists disagree with rationalists in terms of the source of knowledge. They hold an “empiricist” view and advocate that the sole source of knowledge about the world is the evidence of people’s senses, which can be obtained through scientific methods (Benton & Craib, 2001). In this sense, for empiricists, a statement can be accepted as genuine knowledge when it is testable by experience (observation or experiment). The purpose of science is to discover and accumulate general statements about regularities in nature. These statements are known as scientific laws or laws of nature. In the domain of social sciences, researchers aim to discover and confirm the scientific laws that can be used to understand and predict human behaviour (Easterby-Smith, Thorpe, & Jackson, 2012).

Empiricists hold divergent views on their epistemological positions: positivism and interpretivism, which can be explained by ontology (Lee & Lings, 2008). The positivists follow the objectivist view of ontology and hold that social facts have an existence independent of human beings (i.e., the researcher). In this sense, the knowledge about social reality is objective: it is not situated in a political or historic context, and it can and should be understood by the application of scientific methods of natural science (Marczyk, DeMatteo, & Festinger, 2017). This is based on one assumption, as remarked by Ulin, Robinson, and Tolley (2005): that the goal of science is to develop the most objective methods possible to get the closest approximation of reality.

Moreover, the positivists hold that the goal of social sciences is to discover and confirm a set of probabilistic causal laws that can be applied to predict patterns of human behaviour through empirical observations (Neuman & Kreuger, 2003). In other words, positivism is more concerned about the generalisability of research findings to a population. Researchers taking the positivist position often aim to explain the causal relationships in the world, and they develop and test their explanations in experimental studies (Antwi & Hamza, 2015). For the positivist researchers, it is crucial to minimise the possible influence of their values and perceptions on the subject that is under examination. In order to ensure the facts are neutrally gathered and analysed, highly standardized tools such as standardized tests and close ended questionnaires are widely used. In addition, positivism attempts to reduce the complex to the simple by simplifying and controlling variables.

Positivism has its own limitation, since the scientific methods used in natural science are not always directly transferable to the social world (Scotland, 2012). Moreover, for positivists, social science should only concentrate on the social phenomena that are directly observable.

In contrast, interpretivists follow the constructivist view of ontology and hold that reality is socially constructed (Rolfe, 2006) and depends on a human's mental structure and activity (Lincoln et al., 2011). That is to say, social interactions create meaning systems and the world is defined based on each human's perception of the world (Cavana, Delahaye, & Sekaran, 2001). Therefore, the social world can only be understood from the standpoint of individuals who participate in it (Schwandt, 2000). Unlike positivism, constructivism holds that there is no single reality, but multiple realities based on each individual's construction or interpretation of reality (Smith, 1983).

Moreover, for interpretivists, the purpose of inquiry is to understand a particular phenomenon from an individual's perspective, not to generalise it to the whole population (Lincoln et al., 2011). The individual's construction of the world can be elicited and understood through interaction between researchers and participants (Lincoln et al., 2011). In order to gain deeper insight into the context under study, researchers need to build a partnership with the participants. Thus, interpretive

researchers tend to use data collection methods such as interviews, focus group discussions, and naturalistic observations.

Based on the above discussion, it is clear that both positivists and interpretivists hold that there are general, recurring patterns in human behaviour. However, positivists see these patterns as a set of causal laws that can be used to make predictions, while interpretivists view these patterns as being created out of evolving meaning systems that people generate as they socially interact (Neuman & Kreuger, 2003).

### **4.3 Research Design**

#### **4.3.1 Quantitative research versus Qualitative research**

The commitment, either explicitly or implicitly, to ontological and epistemological positions is essential in order to conduct research (Scotland, 2012). The belief about the nature of the world (ontological position) affects the belief about the nature of knowledge (epistemological stance), which in turn affects the belief about how to obtain that knowledge (methodology) (Lincoln et al., 2011). In the following section, the distinction between quantitative and qualitative research will be discussed in terms of the research purpose and research approach.

In the field of social sciences, quantitative and qualitative research are widely applied as the two major research strategies. Quantitative research is underpinned by objectivist ontology and positivist epistemology (Cavana et al., 2001). Rooted in objectivist ontology, quantitative research assumes that social facts have an objective reality, which is single, tangible and independent of the subjects being studied (Gelo, Braakmann, & Benetka, 2008). Moreover, quantitative research, contained in positivist epistemology, is a search for causal laws that govern social events (Cavana et al., 2001). Quantitative researchers hold that uncovering these laws enables researchers to describe, predict and control social phenomena (Benton & Craib, 2001).

In contrast, qualitative research is underpinned by constructivist ontology and interpretivist epistemology (Cavana et al., 2001). Qualitative researchers consider that meaning is socially constructed and is embedded in the participants' experience. The



researcher's own perceptions can also exert a mediating influence on that meaning (Cavana et al., 2001). The relationship between researchers and study subjects is interactive and inseparable (Yilmaz, 2013). Due to the difference in their philosophical bases, quantitative and qualitative research differ in their research purposes. Quantitative research aims to discover cause-and-effect relationships that enable researchers to make probabilistic predictions and generalisations, while qualitative research is concerned with process, context, interpretation and understanding (Yilmaz, 2013). Therefore, quantitative research is more appropriate for the examination of causal effects and production of generalizable outcomes, while the qualitative research method is more appropriate for in-depth understanding of the influence of context.

With regard to this study, instead of aiming to understand firm internationalisation from a holistic perspective, the focus of this study is to narrow down and examine the interactive and causal relationships among several key factors associated with firm internationalisation. More specifically, this study aims to examine how SMEs' strategies in terms of internationalisation speed and managerial cognition influence firm-specific capabilities, and how firm capabilities, together with the external environment, in turn act as interactive variables to influence the relationship between firm strategy and firm performance. Considering the research purpose of this study, a quantitative research method is more appropriate.

The distinctive features of ontological and epistemological positions also imply differences in their approach to research. Positivists put more emphasis on causality, while interpretivists usually focus on exploring phenomena about which little is known. Accordingly, quantitative research primarily follows the deductive approach, while qualitative research adopts the inductive approach (Antwi & Hamza, 2015). More specifically, quantitative research begins with the development of hypotheses based on existing theories and studies, followed by collection of a large volume of data through formal and structured instruments, and ends with the testing of hypotheses by transforming the data into numerical indexes in order to conduct statistical analysis (McCusker & Gunaydin, 2015). In contrast, qualitative research starts with a general, non-predetermined research question, followed by collection of non-numerical data through interaction of the researcher(s) with the research subjects, and ends with hypotheses or grounded theory through the analysis of content in order to find patterns

(McCusker & Gunaydin, 2015). Consequently, the quantitative research method is more appropriate for theory testing and contributes to extending or refining the existing theories and studies, while the qualitative research method is more appropriate for the exploration of under-researched fields and contributes to the in-depth understanding of the research topic. The internationalisation of SMEs is not an under-researched field. However, the extant relevant studies only apply one or two particular theoretical perspectives and focus on one particular dimension of internationalisation. The key concepts in this study are extracted from extant theories, namely the stage theory, the dynamic capabilities theory, and international entrepreneurship. The hypothesised relationships between variables in this study are pre-determined based on a review of relevant studies and theories. Therefore, the deductive approach applied in quantitative research is more appropriate for this study.

Based on the above discussion, considering the research purpose and research approach, quantitative research is more appropriate for this study. For quantitative research, the methodological debates mainly concern clarity, replicability, reliability, and validity. This sets high standards for the sampling methods, selection of measurement tools, and design of questionnaires, which will be discussed in more detail in the next section.

#### **4.4 Research Setting**

The research setting refers to the physical, social and cultural site in which the researcher conducts the study. This study targets small and medium sized enterprises (SMEs) that are located in New Zealand and Australia and have generated income from foreign markets in the past five years. New Zealand and Australia provide a useful case for examining the internationalisation of SMEs. New Zealand and Australia share considerable similarities in terms of geographic location, political and economic systems, cultural background, economic development level, and reliance on international markets.

Previous empirical studies have justified such a duo-country research setting (Chetty & Campbell-Hunt, 2003; Gerschewski, Rose, & Lindsay, 2015). First, SMEs constitute an overwhelming majority of the businesses in both New Zealand and Australia. The business demographics in terms of firm size are quite similar. In both New Zealand and

Australia, approximately 99% of firms are small and medium-sized enterprises, 97% of which have fewer than 20 employees (ASBFEO, 2016; StatsNZ, 2017).

Second, New Zealand and Australia are open economies, which are highly dependent on international markets. Firms in New Zealand and Australia have a high level of involvement in international markets, and overseas sales have significantly contributed to the economic growth of the two countries. The value of New Zealand exports of goods and services for the year ended in 2017 was around \$ 70.4 billion, which comprised around 25.6% of GDP (StatsNZ, 2016). The total value of exports from Australia reached \$ 373.2 billion for the year ended in 2017, contributing more than 21% of the total GDP (Austrade, 2017).

Third, geographically, New Zealand and Australia are located in the same continent and have to deal with being a long distance from major world markets. Given the close geographical distance and high similarities in terms of political, legal, and cultural systems and economic development level, the two economies have closely integrated with each other since the New Zealand-Australia Closer Economic Relations (CER) agreement came into effect in 1983. As a result, the economic and trading relationship between these two countries has been recognised as one of the closest, broadest and mutually compatible in the world.

Fourth, both New Zealand and Australia governments have been making intensive efforts to improve their businesses' international competitiveness in the world market. For example, both governments have encouraged cooperation between firms in the same industries and facilitated the formation of industry clusters. They also have entered into free trade agreements with other countries in order to reduce or eliminate certain barriers to international trade and investment. In both countries, the number of businesses that have generated income from foreign markets has gradually increased in the past five years (Agarwal, Bajada, Green, Rammal, & Scerri, 2017; StatsNZ, 2015).

Fifth, New Zealand and Australian firms with international revenues share some similarities in terms of sources and spread. In both countries, the majority of internationalising firms earned their international income from two to ten foreign markets, which are concentrated within the United States, United Kingdom, China,

Japan and several other Asian countries (Agarwal et al., 2017; StatsNZ, 2015). Moreover, firms from both New Zealand and Australia choose exporting as the main mode of international operation (Agarwal et al., 2017; StatsNZ, 2015).

For firms from New Zealand and Australia, their domestic markets are rather small, which constrains their growth. Moreover, the domestic markets' high level of openness to global competition may even threaten their survival (Baldauf, Cravens, & Wagner, 2000). Under such a hostile business environment, internationalisation has become an optimal choice for them to improve their competitiveness and performance. Traditionally, Europe and North America had been the primary revenue sources of international markets for New Zealand and Australian firms, given the high similarities in terms of cultural traditions, institutions, regulations, and customer preferences. In the last three or four decades, due to the slowing of economic growth in Western countries and the dramatic rise of Asian economies, China, Japan and the emerging region of Southeast Asia have become their new destinations to generate international revenues (Agarwal et al., 2017; StatsNZ, 2016). For New Zealand and Australian firms, markets in Asian countries are geographically close, but culturally and psychically distant. The differences in culture, economy and politics between home and host countries affects the choice of location and entry mode (Kraus et al., 2015). The entry into culturally, economically and politically different markets requires intensive learning. Given the increasing dependence on Asian markets, the research setting of SMEs in New Zealand and Australia is valuable and appropriate for examining the mechanism through which internationalising firms build learning-related dynamic capability. In addition, due to the long-term dependence on international markets, firms in both countries are more or less internationally experienced. In both countries, the ratio of low, moderate and high levels in terms of international experience for internationalising firms is roughly around 3:3:4 (Agarwal et al., 2017; StatsNZ, 2016). Such a distribution of firms provides an ideal research context to examine the influence of prior experience on the development of dynamic capability.

#### **4.5 Population and Sampling**

There are no accurate and up-to-date statistics on the population of New Zealand or Australian SMEs that have generated income from foreign markets. A variety of

business sources were used to generate a contact list for this study, which include data providers such as ResearchNow, Martins and Kompas, industrial associations, business groups in LinkedIn, and entrepreneur news and reports. Several criteria were established in order to select the sample of firms for this study. First, firms have to meet the requirement for SMEs. In the literature, firm size is usually measured by several different indicators, including employee number, annual revenue, and asset value (European Commission, 2003). However, there is no universally agreed-upon definition of SMEs. For New Zealand and Australia, there is no official definition of SMEs. In this study, the definition of SMEs developed by the OECD is applied, since it is internationally compatible and also widely used in the studies of New Zealand and Australia SMEs. According to this definition, firms with fewer than 250 employees are considered SMEs. Second, firms must have generated income from foreign markets in the past five years. Thus, firms involved only in importing were excluded. Third, the firms must be owned by local people, so that they are autonomous and not subject to the influence of foreign-based headquarters.

In the end, a sample list of 2,700 SMEs was generated, of which 1,000 SMEs were from New Zealand and 1,700 from Australia.

## **4.6 Questionnaire Design and Measures of Constructs**

### **4.6.1 Survey questionnaire design**

A questionnaire-based survey was applied in this study to collect primary data. Several factors contributed to choosing the questionnaire-based survey as the data collection method. First, objective data sources, such as official statistical data and firms' annual reports, are not available for the information regarding SMEs and their international operations which is required by the present study. Generally speaking, the owners of SMEs are reluctant to release much information to the public, since there is no legal requirement for them to do so. Second, survey research provides a structured way to ask respondents a wide range of questions regarding firms' strategies, daily practices, and managerial perceptions and attitudes. Third, for a study requiring a large sample size, a questionnaire-based survey is more feasible than other data collection methods when considering time and cost. Moreover, online surveys are relatively less time-consuming

and costly to administer, as respondents can complete the survey in their own time. Fourth, a questionnaire is usually regarded as more impersonal and provides a higher level of anonymity than other methods, which can encourage respondents to provide unbiased answers (Connolly, Jessup, & Valacich, 1990).

The questionnaire is composed of six sections. The first section aimed to collect demographic information about the firm, including firm size, firm age, and industry. The information about the firm's internationalisation process was captured in the second section. Specifically, questions are directly related to the firm's international operations, such as the year in which it began to receive orders from foreign markets, the number of foreign markets that it operates in, and the range of entry modes that have been used. The third section sought information about the owners or managers as the survey respondents, such as their managerial position, educational background, work experience, business networks, and their decision-making styles. Section four collected information regarding the firm's learning behaviour, such as the way in which the firm acquires, assimilates, transfers and exploits external knowledge. The fifth section was dedicated to capturing information regarding the dynamic environment, especially the volatility and unpredictability of the environment in the industry sector in which the firm is operating. The last section aimed to capture information regarding performance as perceived by the respondent, including the firm's international performance and overall performance for the last five years.

#### **4.6.2 Measurement of constructs**

In order to ensure the reliability and validity in terms of variable measurement for the present study, all the measuring items for constructs used in this study were adopted from prior studies, with some minor modifications where necessary to meet the requirement of this study. Moreover, different scale endpoints and formats were used to measure dependent variables, independent variables, and control variables. Both five- and seven- point Likert scales were used in order to reduce the influence of systematic measurement errors or shared variance (Alwin, 1997). A seven-point Likert scale had anchors ranging from 1 = "strongly disagree" to 7 = "strongly agree". It was used to capture firms' behaviour in terms of knowledge absorption and managerial perceptions of market dynamism and performance. A five-point Likert scale was anchored with 1 =

“rarely” and 5 = “almost always”. It was used to capture how frequently managers or owners use rational analysis or heuristics to make business decisions.

Details of specific items measuring individual constructs are presented in the following subsection.

#### **4.6.2.1 Dependent Variables**

##### *Performance*

Most studies on SMEs have used subjective measures to measure firm performance, since SMEs are reluctant to provide objective financial information, such as earnings, profits, and sales growth, to the public. It is suggested that subjective measures are strongly correlated with objective measures of firm performance (Dollinger & Golden, 1992). *Performance* was measured in this study by the respondent’s level of satisfaction regarding six items. On a seven-point Likert-scale (1= “strongly decreased” to 7= “strongly increased”), respondents were asked to evaluate their firm performance in the last five years in terms of: (1) sales volume, (2) sales growth, (3) market share, (4) return on investment, (5) return on assets, and (6) reaching overall financial goals. This measurement scale of performance is considered valid and reliable, and widely applied in many empirical studies (Boso, Story, & Cadogan, 2013; Flatten et al., 2011; Keh, Nguyen, & Ng, 2007; Musteen, Francis, & Datta, 2010; Zhao, Li, Lee, & Chen, 2011),

#### **4.6.2.2 Independent, Mediating and Moderating Variables**

##### *Internationalisation Speed*

Previous studies measured internationalisation speed mainly by a single indicator, for example the time elapsed from the firm’s foundation to its first international sales (Oviatt & McDougall, 2005c). As discussed earlier in the literature review chapter, *Internationalisation Speed* is conceptualised in this study as the changes in both foreign market exposure and range of adopted entry modes over time. This conceptualisation of internationalisation speed represents a significant theoretical advance, as it shifts the focus of the speed concept from the pre-entry stage to the post-entry stage. Corresponding to this conceptualisation, the construct of internationalisation speed was

operationalised as a latent variable consisting of two items: (1) speed of increase in the number of foreign markets, measured as the average number of foreign markets divided by the number of years since the firm's first international expansion; and (2) speed of increase in the range of entry modes adopted in international operations, measured as the average number of entry modes divided by the number of years since the firm's first international expansion. These two measurement items were selected from the conceptualisation and operationalisation of internationalisation speed by Chetty et al. (2014).

### *Absorptive Capacity*

Extant studies tended to capture the variable of *absorptive capacity* by objective measures, such as number of patents, and R&D intensity (Cohen & Levinthal, 1990; He & Wei, 2013). However, these measures are not appropriate for the SME setting of this study, considering both the limited capital investment on R&D and unavailability of relevant objective data for SMEs. Moreover, conceptually, this study focuses on the firm's ability to integrate and utilize prior and newly acquired knowledge in the context of internationalisation. Therefore, the measurement scale developed by Jansen et al. (2005) was adopted to measure the variable of *absorptive capacity*. This measurement includes twenty-one items measuring dimensions of knowledge acquisition, knowledge assimilation, knowledge transformation, and knowledge exploitation. More specifically, six items measure the intensity and direction of efforts to acquire knowledge. Three items assess the extent to which firms are able to analyse and understand external knowledge. Six items evaluate the extent to which firms are able to recognise opportunities and the usefulness of new external knowledge to existing knowledge. Six items measure the extent to which firms are able to exploit knowledge. These measurement items are presented in more detail in **Table 5-11** in Chapter Five. Respondents were asked to indicate on a seven-point Likert scale (1= "strongly disagree" to 7="strongly agree") how much they agree or disagree with statements regarding knowledge acquisition, knowledge assimilation, knowledge transformation, and knowledge exploitation. This measurement scale of absorptive capacity is regarded as being valid and reliable, and has been widely applied in prior empirical studies (Cepeda-Carrion, Cegarra-Navarro, & Jimenez-Jimenez, 2012; Kim, Akbar, Tzokas, & Al-Dajani, 2014; Leal-Rodríguez, Ariza-Montes, Roldán, & Leal-Millán, 2014).



### *Prior international experience*

This study measured *prior international experience* as the difference between the firm's age and the time it took to embark on its first international expansion activity. This operationalisation of the international experience variable has been widely applied in international business research (Child et al., 2017; Cieřlik et al., 2015; Love, Roper, & Zhou, 2016).

### *Managerial decision-making styles*

The Cognitive Style Index (CSI) has been commonly used to measure rational and heuristic styles of decision-making (Allinson & Hayes, 1996). However, the CSI is regarded as being too complex, consisting of 38 measurement items (Allinson & Hayes, 2012), which increases the amount of time it takes for a respondent to complete the questionnaire and ultimately reduces the response rate. This study applied the measurement scale developed by Vance et al. (2007) to measure *managerial decision-making styles*. This scale assesses the degree to which decision-makers tend to use rational analysis and heuristics in their decision-making. It comprises two sets of forced-choice items and measures unique dimensions of information sources (external sources versus internal sources) and information processing (guided by rational decision-making versus heuristic decision-making) that individuals utilize for decision-making. The first set of forced-choice items includes eight paired words or phrases describing alternative types of information sources. Using a Likert-type scale (0= "never or rarely", 1= "occasionally", 2= "moderately often", 3= "very often" and 4= "almost always"), respondents were asked to allocate exactly four points across each pair of alternative words or phrases according to how frequently they use external versus internal sources of information. Examples of paired words include "facts" versus "feelings", "reason" versus "felt sense", and "logic" versus "inner knowing".

The second set of forced-choice items includes five pairs of statements describing alternative behaviours in information processing that influence decision-making. Using a Likert-type scale (0= "never or rarely", 1= "occasionally", 2= "moderately often", 3= "very often" and 4= "almost always"), respondents again were asked to allocate exactly four points across each pair of alternative statements according to how frequently they

rely on rational analysis versus heuristics to process information and make decisions. Examples of pairs of statements include, “I primarily rely on logic when making business decisions” versus “I primarily rely on my feelings when making business decisions”, and “I primarily weight quantitative factors when making business decisions, such as budget needs, or future earnings” versus “I primarily weight qualitative factors when making business decisions, such as gut feelings or a sense that the decision is right for our company”.

This measurement scale of decision-making styles is regarded as being valid and reliable, and has been applied in prior empirical studies (Groves, Vance, & Choi, 2011; Groves, Vance, & Paik, 2008).

#### *Market Dynamism*

This study used a previously validated scale to measure market dynamism (Jansen, Van Den Bosch, & Volberda, 2006; Li & Liu, 2014; Priem et al., 1995; Roberts, 2015). The scale comprises five items. On a seven-point Likert scale (1= “strongly disagree” to 7= “strongly agree”), respondents were asked to assess the degree of change in terms of customer preferences, product demand and business behaviour of competitors. Examples of items include “Changes in customer preferences take place regularly”, “Our customers are very receptive to new product ideas” and “Competition in foreign markets is intense”.

#### **4.6.2.3 Control Variables**

Three variables of *firm age*, *firm size* and *technological dynamism* were controlled in this study, since previous studies have indicated their influence both on firm performance and absorptive capacity (Rakthin, Calantone, & Wang, 2016; Vasudeva & Anand, 2011). In order to prevent skewness, *firm size* was measured as the natural logarithm of the number of employees in the firm (Sheng, Zhou, & Li, 2011). For the same reason, *firm age* was measured as the natural logarithm of the number of years the firm has been in operation. *Technological dynamism* was measured by four items adopted from previous studies (Slater & Narver, 1994; Yu, Hao, Ahlstrom, Si, & Liang, 2014). These measurement items assess the magnitude of changes and breakthroughs in

technology. Examples of items include “In our kind of business, technological development is changing rapidly”, and “A large number of new products in our business have been made possible through technological break-through”.

#### **4.6.3 Survey questionnaire pre-testing**

Before the full launch of the survey, the survey questionnaire was sent to several academic researchers and a small group of survey respondents from the sample firms. The purpose was to seek respondents’ views regarding the relevance of questions, questionnaire length, and the structure and wording of measurement items. Most respondents were happy with the content and length. They commented that the questionnaire was relevant, informative, and enjoyable, and that the instructions were easy to understand. Some of them specifically commented that they liked the questions about decision-making styles. The positive feedback about the questionnaire is probably due to the fact that most measurement items used in the questionnaire were adopted from previous studies so they had been well developed and refined.

One respondent suggested that some items are not applicable (i.e. whether the firm regularly approaches third parties outside the industry, such as professional organisations, to gather information). SMEs have a variety of financial situations. Some of them may not have extra financial resources that can be allocated to obtaining professional advice from third parties.

A few respondents also provided some suggestions about the presentation of the questionnaire. One respondent suggested that it would be helpful to start the questionnaire with two screening questions: (1) whether the firm which the respondent works in or owns generated income from foreign markets in the past five years, and (2) whether the respondent has been involved in the decision-making for international activities. Two respondents suggested changing the position title “CEO” to “Managing director”, which is more widely used in New Zealand and Australia. Based on their feedback, minor revisions were made to improve the survey questionnaire.

#### **4.6.4 Ethical considerations**

This study was designed in accordance with Massey University's "Code of Ethical Conduct for Research, Teaching and Evaluations involving Human Participants". An ethical analysis and risk assessment of the study were undertaken and discussed with the supervisory team. As a result of the ethical analysis and risk assessment the study was considered low risk and relevant notification was given to the Human Ethics Committee of Massey University before the launch of the survey. The participants were able to withdraw at any time during the survey. Moreover, they were assured that their responses to all questions in the survey would remain anonymous and confidential during analysis.

#### **4.7 Data Collection Process**

The survey was conducted between July 2016 and February 2017. As the survey targeted a rather large sample size and was conducted in two countries, the survey was operated in two stages. It was firstly conducted in New Zealand from July 2016 to October 2016. Then, the survey targeting sample firms in Australia was conducted from November 2016 to February 2017 with the same questionnaire. Owners and managers were targeted since they have sufficient knowledge about decision-making on strategic management and firm performance issues. Given the dual country research setting, the questionnaire was distributed through an online survey tool, namely Qualtrics. Compared with traditional modes of survey distribution, online surveys have several advantages, such as shorter transmitting time, lower delivery cost, more design options and less data entry time (Fan & Yan, 2010). Qualtrics allows respondents to complete the questionnaire on either a computer or mobile phone.

A challenge in using online surveys is the likely low response rate (Fan & Yan, 2010). A range of efforts were made to ensure a reasonable response rate for the survey when designing it. In addition to question wording, the design also affects respondents' willingness to complete an online survey or the answers given to survey questions (Couper, Traugott, & Lamias, 2001). Following previous research that adopted self-administered surveys, the present study used a screen-by-screen format rather than requiring scrolling. One or several related questions were displayed within one screen

and clear instructions were provided. Screen-by-screen design can not only efficiently reduce the completion time, but also result in fewer non-substantive answers (Couper et al., 2001; Toepoel, Das, & Van Soest, 2009). A graphic progress indicator was provided in the questionnaire, which could be helpful to keep respondents motivated to complete the online survey. Moreover, check boxes and drop-down boxes were utilized, so that respondents could answer most questions by mouse click.

Efforts were also made during the survey delivery stage. First, based on the contact lists generated by diverse business sources, a personalized invitation letter was sent to the owner or manager of identified firms. Several things were clarified in the invitation letter, including the purpose of the survey, university sponsorship of this research, estimated time to complete the survey, and contact information if help was needed. The respondents were assured that all answers would remain confidential and anonymous, and that the collected survey data would be used for the specified research only. As an incentive, a personalized business report would be sent to the respondent if the respondent was interested. Second, a URL linked to the online survey was included in the invitation letter. A unique identifier was embedded into the URL, which allowed respondents to login without username and password. Third, in order to fully utilize the fast turnaround time of online surveys in comparison to mail surveys, a personalized reminder letter was sent out to those who had not responded after two weeks. Fourth, another two rounds of mailing of reminder letters were sent. By the end of February 2017, the online survey was closed.

#### **4.7.1 Response rate and test for non-response bias**

Overall, 2,700 email invitations were sent out, based on the contact list generated from a wide range of business sources. Of these email invitations, 38 automatic responses were received, informing that the email addresses were no longer valid; 67 respondents replied that they had withdrawn from international markets and were focused on domestic markets instead, have been engaged in importing only, or had shut down or sold their businesses. Thus, the final number of online questionnaires distributed in this study was reduced to 2,595 from 2,700. By the end of February 2017, 394 responses had been received. After preliminary data screening and analysis, 343 of those were

judged as usable responses (more detailed description of unusable responses is presented in Section 5.2).

The response rate is defined as the number of usable responses divided by the number of eligible units in the sample (Fan & Yan, 2010). Accordingly, the response rate of this study was calculated as 13.21%. The response rate is not high, but comparable with similar online surveys conducted by prior studies. Several features of the present study could have influenced the response rate. First, this study targeted SMEs as research subjects, which are considered by the research community as a population reluctant to respond to surveys. It is reported that studies on SMEs are frequently confronted with the challenge of collecting empirical data (Newby, Watson, & Woodliff, 2003). Second, with regard to the medium of survey delivery, previous research has highlighted that online surveys usually yield a low response rate, which is approximately 11% lower than printed and mailed surveys (Manfreda, Berzelak, Vehovar, Bosnjak, & Haas, 2008). Third, it has been highlighted that studies conducted at the firm level and seeking responses from organisational representatives or top management are likely to have a very low response rate, as managerial executives tend to have limited time to respond to surveys (Fan & Yan, 2010).

The presumption that a higher response rate equates to a higher level of data reliability and validity has frequently been challenged as being invalid (Mellahi & Harris, 2016). A low response rate does not necessarily lead to nonresponse bias (Nesterkin & Ganster, 2015). In contrast, a low response rate may actually yield more accurate data, especially when a study targets top management and focuses on firm strategies (Mellahi & Harris, 2016).

Nonresponse bias may be present for data collected through survey methods when respondents to a survey are different from those from the sample who did not respond (Sax, Gilmartin, & Bryant, 2003). Previous research has pointed out that a challenge for online surveys is the possibility of omitting respondents who do not have internet access, which may lead to a low response rate and subsequently give a bias to the responses (Couper et al., 2001). However, in the context of business, especially those engaged in international business, access to the internet should not be a concern, since the

communication between firms in different countries involves frequent use of emails, fax and video conferencing.

Statistically, nonresponse bias can be estimated through the extrapolation method. The extrapolation method assumes that respondents who respond later in the administration period are more likely to be similar to the non-respondents, and respondents who respond early represent the average respondents (Armstrong & Overton, 1977; Sax et al., 2003). Nonresponse bias could be present if there is a significant difference in responses provided by the early and late respondents.

Given that all independent and dependent variables are measured in the present study by using continuous value variables, an independent sample t-test was performed to compare the mean scores of two different groups of sample firms. The full sample was split into two groups, based on the dates when returned responses were received by the researcher. The first 50% of responses were regarded as the early response group, while the second half of the full sample comprised the late response group. The results of the independent sample t-test are reported in **Table 4-1** below. Significance levels for all the listed variables are significantly larger than .05, suggesting that there is no significant difference in the mean scores for the values of independent and dependent variables between the two sub-samples of early and late responses. Therefore, nonresponse bias is not a concern for the survey-based data in this study.

**Table 4-1 Independent sample t-test results: Early and late response groups**

Variables	t-test for Equality of Means		
	t	df	Sig. (2-tailed)
Internationalisation speed	-1.02	341	.31
Prior experience	1.10	341	.26
Rational decision-making	-1.11	341	.27
Heuristic decision-making	1.47	341	.14
Absorptive capacity	-.15	341	.88
Market Dynamism	.74	341	.46
Performance	.84	341	.58

#### **4.8 Data Analysis Techniques: Structural Equation Modelling**

Structural equation modelling (SEM) is a widely used multivariate analysis technique to simultaneously examine multiple relations between variables in the social sciences (Singh, 2009). In this study, SEM was selected as the main statistical technique for modelling analysis to process the data and this selection is based on the advantages of SEM as a rigorous and powerful modelling tool.

First, SEM allows researchers to perform modelling with latent variables, which are indirectly measured through multiple observable measurement items (Chin, 1998). The conceptual framework proposed in the present study includes some latent variables that are measured through their effects or their observable causes.

Second, SEM allows tests of relationship between constructs and their measured indicators. Given its ability to have explicit control of measurement errors for observable variables, SEM is able to analyse the second-order constructs in the path model (Gefen, Straub, & Boudreau, 2000; Iacobucci, 2009). In this study, the main variables including independent, interactive, and dependent variables were measured through multiple items. For example, absorptive capacity is operationalised as a multidimensional concept. Structural equation modelling allows the proper representation of measurements, since it has a factor for each set of indicators.

Third, SEM allows a rigorous evaluation of model fit through a range of fit indices (Hooper, Coughlan, & Mullen, 2008). By employing these fit indices, a researcher is able to assess how well the proposed theoretical model fits the sample data.

Fourth, SEM is the most efficient modelling method to estimate a multi-equation system. As demonstrated in the conceptual framework (see Section 3.2.3 for more details), the present study had a multi-equation system, as the conceptual framework requires a modelling estimation of several interactive effects, including both mediating and moderating effects, in one model. More specifically, absorptive capacity was tested as a mediator for the direct relationship between internationalisation speed and firm performance, while international experience and market dynamism were tested as moderators for the direct relationships between speed and absorptive capacity, and



between managerial cognition and performance respectively. For such multi-equation systems, the commonly used modelling techniques, such as the ordinary least squares (OLS) regression, are regarded as being inappropriate (Bae & Lawler, 2000). The inclusion of endogenous variables as predictors of other endogenous variables meant that the OLS assumption that predictor variables are uncorrelated with a dependent variable's error term was not tenable. Under this situation of a multi-equation system, SEM is recommended as the appropriate modelling approach.

Fifth, SEM is able to deal with the problem of multicollinearity among explanatory constructs. It examines the multi-collinearity effects by estimating the covariance between independent variables or between exogenous constructs in a model. In order to test the curvilinear relationships and moderation effects, the present study included several powered products. These powered products may increase the values of the correlation index between exogenous variables.

SEM consists of two types of modelling analysis: a measurement model and a structural model (Iacobucci, 2009). The measurement model specifies the relationships between the latent variables and their observed variables (i.e. measurement items), while the structural model depicts the relationships between constructs from a theoretical perspective (Iacobucci, 2009). The measurement model assesses the convergent and discriminant validity of variables, and the structural model evaluates the predictive validity (Schumacker & Lomax, 2004). It is recommended that the measurement model should be tested before the structural model is tested, as the test of a structural model would be meaningless if the measurement model does not hold.

Both measurement model and structural model follow a logical sequence of five steps: model specification, model identification, model estimation, model testing, and model modification (Schumacker & Lomax, 2004). The following section discusses these five steps in detail, while the model results will be presented in chapter 5.

#### **4.8.1 SEM procedures**

##### ***Model specification***

Model specification involves developing a theoretical model that can sufficiently reproduce the covariance matrix of the sample. Model specification is usually guided by a combination of theory and previous empirical results (Hox & Bechger, 2007). As described earlier, all the measurement scales for the variables included in this study have been shown to be reliable and valid in previous studies.

##### ***Model identification***

Model identification involves specifying each potential parameter in the theoretical model to be either a free parameter, a fixed parameter, or a constrained parameter (Schumacker & Lomax, 2004). The purpose is to make sure the model is either just- or over- identified. That is done to make sure the number of freely estimated parameters does not exceed the number of sample variances and covariance (Schumacker & Lomax, 2004). Otherwise, the results cannot be trusted, since the degree of freedom for the model is zero or negative.

##### ***Model estimation***

Model estimation involves the use of a particular estimation method, such as ordinary least squares, generalized least squares, or maximum likelihood, to minimise the difference between the covariance matrix of the theoretical model and that of the sample model (Crisci, 2012). The selection of estimation method usually depends on the sample size and normality of the data (Ullman & Bentler, 2003). Maximum likelihood is most widely used. Compared to other estimation methods, maximum likelihood, under conditions of misspecification and non-normality, provides more realistic model fit indices and less biased parameter estimates for paths that overlap with the true model (Olsson, Foss, Troye, & Howell, 2000). The underlying principle of maximum likelihood is to find the model parameter estimates that maximise the probability of observing the available data if the data were collected from the same population again.

### ***Model testing***

Model testing is about determining whether and how well the theoretical model is supported by the sample data (Schumacker & Lomax, 2004). This is the most important step in SEM. There are two ways to determine the model fit. First is the global test, known as model fit criteria. There are a large number of model fit indices, which can be categorised as absolute fit indices and incremental fit indices. Absolute fit indices assess how well a priori model fits the sample data and suggests which proposed model has the best fit (Hooper et al., 2008). Chi-square ( $\chi^2$ ), degree of freedom (*df*), relative chi-square ( $\chi^2/df$ ), and root mean square error of approximation (*RMSEA*) are examples of absolute fit indices. Chi-square ( $\chi^2$ ) assesses the magnitude of discrepancy between the sample and fitted covariance matrices. A non-significant chi-square value indicates that the theoretical model can sufficiently reproduce the sample variance-covariance relationships in the matrix. However, chi-square ( $\chi^2$ ) is sensitive to sample size. It has the tendency to show a significant probability level when the sample size is above 200 (Schumacker & Lomax, 2004). It is recommended to use relative chi-square ( $\chi^2/df$ ) as the fit index. A value less than 3 for relative chi-square is considered a good fit (Iacobucci, 2010; Kline, 2005). *RMSEA* has been considered one of the most informative fit indices due to its sensitivity to the number of estimated parameters in the model (Diamantopoulos & Siguaw, 2006). It values parsimony and chooses the model with the lower number of parameters. A value of *RMSEA* that is less than .06 indicates a good fit (Hu & Bentler, 1999).

Incremental fit indices are also known as comparative or relative fit indices. Commonly used incremental fit indices include Comparative fit index (*CFI*), Incremental fit index (*IFI*) and Tucker-Lewis index (*TLI*). They compare the proposed model with an independent model. Among these incremental fit indices, *CFI* is one of the most popular fit indices, since it is least affected by sample size ( Fan, Thompson, & Wang, 1999). A value of *CFI* greater than .95 indicates good fit (Hu & Bentler, 1999). The .95 cut-off threshold is also applicable to *IFI* and *TLI*.

The thresholds for the model fit indices discussed above are summarised in **Table 4-2**.

**Table 4-2 Thresholds for each model fit index**

<b>Fit index</b>	<b>Thresholds</b>
$\chi^2$	N/A
$\chi^2/df$	3 or less
<i>CFI</i>	.95 or higher
<i>IFI</i>	.95 or higher
<i>TLI</i>	.95 or higher
<i>RMSEA</i>	.06 or less

In addition to the global tests discussed above, the second way to determine the model fit is to examine the fit of individual parameters of the model. The features of individual parameters should be considered. The researcher should consider whether the freely estimated parameter is significantly different from zero. This can be reflected by the critical value, which equals the parameter estimate divided by its standard error. If the value exceeds 1.96 for a two-tailed test at the .05 level, it indicates the parameter estimate is significantly different from zero (Schumacker & Lomax, 2004). In addition, the researcher should also consider whether the sign of the parameter is consistent with what is expected from the theoretical model, and whether it is within the expected range of values (Schumacker & Lomax, 2004).

### ***Model modification***

Model modification is performed when the theoretical model does not fit the sample data well. There are a few procedures available to detect specification errors, so that the original model can be re-specified to improve fit. The first approach is to change statistically non-significant parameters into fixed parameters. The second method to examine misspecification involves examining the residual matrix, which comprises the differences between the theoretical model implied covariance matrix and the sample covariance matrix. These values should be small (Schumacker & Lomax, 2004). Standardised residuals greater than 2.58 indicate that a certain covariance is not well explained by the model (Hair, Black, Babin, & Anderson, 2009). Another procedure is

to examine the modification indices (MI). A modification index for a particular non-free parameter indicates how much the chi-square goodness of fit value would be reduced if this parameter is freely estimated in a subsequent model (Brown, 2014). One arbitrary rule of thumb is to consider adding paths associated with parameters whose modification index exceeds 100. However, researchers should be cautious. Adding paths or correlating error terms as reflected in MI should only be done when it makes substantive theoretical and statistical sense to do so. The more model modifications are guided by a modification index, the lower the likelihood the re-specified model will be replicated in future samples.

These five steps guided how the measurement model and structural model were tested in this study.

#### **4.8.2 Bootstrapping for testing mediation effects**

Testing mediation effects provides researchers with an opportunity to explain the process or mechanism by which one variable affects another. Mediation analysis assesses the indirect effect of a proposed cause on some outcome through a proposed mediator. There are several different approaches to test a mediation effect. The causal steps approach proposed by Baron and Kenny (1986) has been commonly used for mediation analysis because of its simplicity. Following this approach, four conditions should be met to establish a mediation effect:

- (1) The independent variable is significantly related to the dependent variable.
- (2) The independent variable is significantly related to the mediating variable.
- (3) The mediating variable is significantly related to the dependent variable.
- (4) It is a full mediation if the relationship between the independent variable and the dependent variable is no longer present when the mediating variable is accounted for; it is partial mediation if the relationship is still significant but reduced in magnitude when the mediating variable is accounted for.

Despite its popularity, the causal steps approach has been criticized for its low power to detect mediation effects. This approach infers the existence of mediation from a set of tests on the constituent paths but fails to quantify the indirect effects and test the associated significance (Hayes, 2009). Moreover, this approach is subject to measurement errors. The significance of the mediation effect is likely to be underestimated when the variables are measured with errors. That is because the influence of the independent variable on the dependent variable without the mediating variable is likely to be underestimated, and the direct effect of the independent variable on the dependent variable with the mediating variable is likely to be overestimated.

The Sobel test has been frequently used as a supplement to the causal steps approach (Sobel, 1982). The Sobel test provides a method to determine whether the reduction in the magnitude of the relationship between the independent variable and dependent variable, after controlling the mediating variable, is significant. The major flaw of the Sobel test is its assumption of normal distribution of the indirect effect. However, the sampling distribution of the indirect effect tends to be asymmetric (Bollen, 2011). Thus, the Sobel test is not appropriate for examining the mediation effect in this study.

The alternative choice is bootstrapping, which has been proved in simulation studies as one of the most valid and powerful ways to examine mediation effects (Hayes, 2009; MacKinnon, Lockwood, & Williams, 2004). Bootstrapping does not require normal distribution of the indirect effect. It not only examines the size and significance of indirect effects, but also creates confidence intervals, which provide a range of plausible population values for the mediation effect (Cheung & Lau, 2008). There are four methods commonly used to define confidence intervals based on bootstrapping, namely, the percentile method, the bootstrap-t method, the BC method, and the bias-corrected method. Simulation research suggests that the bias-corrected bootstrap confidence intervals perform best in tests for mediation effects (Cheung & Lau, 2008). If zero is not between the lower and upper bound, the analysis can claim that the indirect effect is statistically significant.

The bootstrapping test can be conducted in both hierarchical regression models and SEM (MacKinnon et al., 2004). The SPSS Macro program developed by Hayes (2017) has been frequently used to examine the significance of the indirect effect. The Macro

program generates a bootstrap estimate of the indirect effect, an estimated standard error and confidence intervals for the population value of the indirect effect. However, the SPSS Macro procedure for estimating indirect effects is a regression-based approach. Hierarchical regression models are subject to measurement errors. It has been recommended to examine the indirect effect with SEM by the bootstrapping approach, which also creates confidence intervals for estimated parameters (Cheung & Lau, 2008). Models involving latent variables measured by multiple indicators inherently correct the measurement errors by estimating common and unique variance separately (Preacher & Hayes, 2004).

Based on the above discussion, in this study, the mediation effect was examined with SEM through the bias-corrected bootstrapping approach.

#### **4.9 Methodological Limitations**

This study uses a cross-sectional research design. Two major concerns that surround cross-sectional survey research are common method variance and causal inferences. Survey-based studies undoubtedly have some degree of common method variance (CMV), since most cross-sectional surveys are completed by a single respondent (Rindfleisch, Malter, Ganesan, & Moorman, 2008). Previous studies have found that, in social science surveys, common method variance explains approximately 30% of the total variance (Ostroff, Kinicki, & Clark, 2002). Efforts have been made in the present study to reduce common method variance bias. Section 5.3.2 in the results chapter provides a more detailed discussion regarding the steps taken in the present study to address the CMV issue.

In addition to common method variance, cross-sectional surveys are completed in a single point in time. The lack of temporal order may influence survey-based research's causal inference capability (Rindfleisch et al., 2008). Despite the strong theoretical foundation developed in this study, the causal relationships inferred in this study can be further confirmed with longitudinal research.

## **Chapter 5 - Data Analysis and Results**

### **5.1 Introduction**

The previous chapter discussed the methodological issues related to research design, data collection, and statistical analysis techniques that could be applied to test hypotheses. This chapter presents the results of preliminary tests and SEM analysis. Specifically, data examination was first conducted, followed by calculation of descriptive statistics for the final sample firms and respondents. After the preliminary tests were completed, SEM analysis was conducted in two steps to test the hypothesised measurement model and path models.

### **5.2 Results from Preliminary Tests**

#### **5.2.1 Data Screening and Preparation for SEM Analysis**

Before undertaking statistical data analysis, it is important to evaluate the quality of data. This process usually involves examination of the extent and randomness of missing data, identification of outliers and testing of data for compliance with some assumptions underlying multivariate analysis. The purpose of preliminary tests is to examine characteristics of the data and, more importantly, reveal the hidden effects that can be easily overlooked.

##### **5.2.1.1 Missing data**

Missing data is an unavoidable issue associated with surveys. It primarily results from data entry errors, data collection problems, or from omission of answers by respondents. From a substantive perspective, missing data may produce biased parameter estimates (Allison, 2003). Missing data also reduces the sample, which may reduce the power of certain statistical analysis techniques to detect true relationships in data. Missing data can be dealt with by various imputation methods, such as pair-wise deletion, list-wise deletion, series mean substitution, median imputation, and regression imputation (Graham, 2009). The extent and patterns of missing data determine which imputation methods are appropriate to replace the missing values. When missing data comprise



under 10% for each variable or case and with no specific non-random patterns appearing, they can be ignored or be replaced through any kind of imputation method. On the other hand, if the extent of missing data is substantial enough to warrant action, the next step is to ascertain the degree of randomness in missing data, which then determines the selection of imputation methods.

In this study, the examination of missing data followed four steps. First, the distribution of each respondent's responses to all questions measured on Likert scales (they are indicators for variables used in the present study, such as firm performance, absorptive capacity, internationalisation speed, decision-making styles, market dynamism, and technological dynamism) were evaluated by calculating the standard deviation. Twenty-six cases were found to have standard deviations around zero, indicating that the respondent responded to most questions with the same answer. These cases were further evaluated by comparing their response time to the average response time of all cases. These respondents completed the survey questionnaire within a very short time, indicating a low level of engagement when the respondents answered survey questions. Therefore, these twenty-six unengaged responses were deleted from the sample.

Second, before diagnosing the degree of randomness in the missing data, the simple remedy of deleting offending cases with excessive levels of missing data was applied (Hair et al., 2009). Specifically, the percentage of variables with missing data for each case was calculated. Twenty-two cases were deleted since they had more than 50% of missing data (Hair et al., 2009).

Third, the degree of randomness of missing data was diagnosed through Missing Value Analysis in SPSS. The significance value of Little's MCAR test was .41, indicating that the missing data were completely at random (Little, 1988).

Lastly, the extent of missing data for all variables was assessed. For the indicators of latent variables, such as absorptive capacity, decision-making styles, market dynamism, technological dynamism, and firm performance, the levels of missing data range from 0.2% to 0.7%. The extent of missing data was so trivial that the application of an imputation method would not bias the results. Therefore, the missing data for indicators measured on Likert scales were replaced by the median value of the related indicators,

as calculated from all valid responses. For other continuous variables, such as firm age, firm size, international experience and number of foreign markets entered by each individual firm, the levels of missing data were 0.2% or less. These missing values were replaced by the mean value of related variables calculated from all valid responses. There was no missing data on the number of entry modes adopted by each individual firm to operate international businesses.

### **5.2.1.2 Outliers**

An outlier is defined as an observation that appears to be inconsistent with the remainder of that set of data (Hodge & Austin, 2004). Outliers may arise due to data entry errors, instrument errors, or simply through natural deviations in populations (Hodge & Austin, 2004). The impact of outliers cannot be simply considered as either beneficial or problematic. It is beneficial when it highlights the characteristics of the population that are uncovered in the normal course of analysis. When it is not representative of the population, it can be problematic and will seriously distort the statistical analysis results. The identified outliers should be assessed within the context of analysis and by the types of information they may imply (Hair et al., 2009).

Outliers can be detected from a univariate or multivariate perspective based on the number of variables considered (Hair et al., 2009). Univariate detection examines the distribution of one single variable of interest and designates cases falling at the outer ranges of the distribution as outliers. Multivariate detection measures each individual case's distance in multidimensional space from the mean centre of all cases. Mahalanobis distance is a well-known measure. Both methods provide a unique perspective to detect outliers. Univariate detection examines one particular variable to identify extreme observations. Multivariate detection takes more than two variables into consideration. However, multivariate detection is best suited for examining a complete variate (Hair et al., 2009). More importantly, the detection of multivariate outliers is subject to masking and swamping effects (Ben-Gal, 2005). In a masking effect, after deleting the first multivariate outliers, other case(s) will emerge and be identified as outliers. In a swamping effect, the second individual case can only be labelled as an outlier when the first multivariate outlier is present. Researchers need to decide the number of outliers they intend to identify before or during the detection process.

With regard to this study, outliers were detected through a univariate perspective. It was highly unlikely to detect outliers based on latent variables, such as absorptive capacity, decision-making styles, market dynamism, and performance, since they are measured on a Likert scale (Hair et al., 2009). In addition, the deletion of outliers based on variables such as firm age, firm size and international experience was also not reasonable, since the values of these variables may indicate the demographic characteristics of certain types of cases. Cases with extreme values on survey items measuring internationalisation speed may be designated as outliers. In order to identify the outliers, the values of internationalisation speed for all cases were standardised. The threshold for outliers was those with values of standard scores up to 4 (Hair et al., 2009). According to this threshold, three cases were labelled as outliers and their values could have seriously distorted the statistical results. These three cases were further assessed by the length of their response time. It turned out that the response times associated with these cases were far less than the average response time, indicating the possibility of careless and irresponsible engagement with the survey. Accordingly, these three cases were removed from the sample.

#### **5.2.1.3 Test of assumptions of multivariate analysis**

The evaluation of the extent and patterns of missing data and identification of outliers aim to clean the data, so that it is suitable for multivariate analysis. The testing of data for compliance with assumptions underlying multivariate analysis deals with the foundation upon which these techniques make statistical inferences and results (Hair et al., 2009). Some techniques are robust since they are less affected by violating certain assumptions, while others are not. This study tested three important statistical assumptions: normality, linearity and homoscedasticity.

##### ***Normality***

A basic assumption underlying multivariate techniques is normality, defined as the degree to which the distribution of the sample data corresponds to a normal distribution (Hair et al., 2009; Rencher, 2003). The shape of data distribution is usually measured by two indicators: kurtosis and skewness. Kurtosis refers to the peakedness or flatness of the distribution, while skewness describes the balance of the distribution (Hair et al.,

2009). Values of kurtosis and skewness ranging from -2 to 2 indicate acceptable levels for normal distribution, while values falling out of this range denote a departure from normality (Mitra & Pingali, 1999).

With regard to this study, the values of kurtosis and skewness for all indicators of the latent variables are between -2 and 2, which indicate normal distribution. As for other continuous variables including firm age, firm size, length of international experience and two indicators of internationalisation speed, their values of kurtosis and skewness fall out of the range from -2 to 2, which denotes non-normal distribution.

There are several approaches to transforming the data in order to improve its normality of distribution, such as logarithm and power. Control variables such as firm size and firm age are often skewed. In this study, in accordance with previous studies, these two variables were transformed by logarithms. As for indicators of internationalisation speed and international experience, this study decided to keep their original form, since transformation may change the interpretation of the variables (Osborne, 2002). Three factors provide solid support for this decision. First, it is suggested that the negative influence of non-normality on statistical analysis diminishes when sample size reaches 200 or more (Hair et al., 2009). This study has more than 200 cases. Second, this study used the maximum likelihood estimation method in SEM, which is able to produce robust results, even when the assumption of normal distribution is violated (Olsson et al., 2000). Third, bootstrapping was utilized to test hypotheses and mediation effects in particular. Bootstrapping involves repeatedly sampling from the data set and can alleviate the problems inherent in using parametric methods with violated assumptions (Erceg-Hurn & Mirosevich, 2008). Moreover, bootstrapping can create substantially accurate confidence intervals for estimated parameters that violate the normality assumption (Cheung & Lau, 2008).

### ***Homoscedasticity***

Homoscedasticity refers to the assumption that dependent variable(s) exhibit equal levels of variance across the range of values of independent variables (Hair et al., 2009). This assumption should be met in most statistical techniques in order to ensure the variance of the dependent variable being explained by the model is not concentrated in

only a limited range of values for the independent variables (Hair et al., 2009). Homoscedasticity is best examined through scatter plots with the dependent variable on the Y axis and its residual on the X axis. In this study, scatter plots were created for all variables of interest in SPSS. These showed that the residuals exhibited consistent variance across different values of the independent variables, including internationalisation speed, decision-making styles, and absorptive capacity. These results confirmed that the assumption of homoscedasticity has been met.

### ***Linearity***

The techniques of multivariate analysis assume that the relationships between dependent and independent variables are linear in nature (Hair et al., 2009). The violation of the linearity assumption may lead to biased estimates of model fit and standard error. In addition, the omission of nonlinear effects in the analysis will underestimate the actual strength of relationships between variables (Lind & Mehlum, 2010).

The nonlinear relationship can be represented by adding polynomial terms, either quadratic or cubic, into the regression model (Hair et al., 2009). In the present study, the theoretically proposed inverted U-shape relationships are included in the conceptual framework. These non-linear relationships were examined by adding quadratic terms into the SEM path model. More details about creation of the quadratic terms are provided in Section 5.3.3.

### **5.2.2 Final Sample Size**

Sample size is an important issue, since it directly affects the statistical power of multiple regression, bias in parameter estimation, and generalisability of the modelling results. This study used structural equation modelling (SEM) to analyse data. However, there is no consensus on the minimum number of cases needed to perform SEM (Schreiber, Nora, Stage, Barlow, & King, 2006). A simple and arbitrary rule is that the sample size should not be less than 200 to perform a SEM model (Barrett, 2007). Another frequently promoted rule of thumb concerning the requisite sample size is about the ratio of sample size to the number of parameters estimated in a SEM model.

For example, some researchers suggested that the expected ratio of sample size to number of free parameters should be at least 5:1 (Bentler & Chou, 1987). Some recent simulation studies recommended lower ratios. It was found that satisfactory models could be obtained in practice with a ratio near 3:1, or even close to 2:1 on some occasions (Bagozzi & Yi, 2012). On the other hand, some researchers argue that consideration should also be given to the model characteristics, estimation method, and extent of missing data, rather than just the ratio of sample size to freely estimated parameters (Wolf, Harrington, Clark, & Miller, 2013). It is suggested that SEM models having five or less constructs, each of which has more than three indicators and high factor loadings (above .60), can be adequately estimated with 100-150 cases (Hair et al., 2009).

For the present study, 394 responses were received from the targeted sample SMEs in the two countries of New Zealand and Australia. After deleting twenty-two incomplete responses, twenty-six unengaged responses and three outliers, the sample size of this study comprised 343 firms. After model modification, the measurement model contained 104 freely estimated parameters, while the final path model had 99 freely estimated parameters. In both models, all latent variables except internationalisation speed were measured by three or more indicators and all factor loadings were above 0.6. Therefore, the ratio of 3:1 is applicable here. Accordingly, the measurement model and path model theoretically required 312 and 297 cases respectively. Therefore, the 343 cases used in this study can be considered as meeting the requirement for sample size to perform SEM modelling.

### **5.2.3 Descriptive Statistics**

Before performing SEM models, descriptive statistics were generated in order to understand the characteristics of sample firms in terms of firm size, location, industry, firm age at which they started internationalisation, the length of each sample firm's international experience, and the number of foreign markets and applied entry modes. In addition, the features of respondents at the individual level were also analysed in order to ensure they provided accurate information of interest.

### 5.2.3.1 Firm size

This study focused on small and medium-sized enterprises (SMEs). As indicated in **Table 5-1**, nearly half of the sample firms were small enterprises with 10 to 49 employees. The medium-sized and micro enterprises comprised 33.5% and 19.5% respectively. This distribution was consistent with the literature that SMEs were more active in international business in comparison to micro enterprises (Ruzzier & Ruzzier, 2015). This set of figures is comparable to a national survey conducted in Australia in 2014 about Australian businesses that earn international revenues. According to the survey, around 69% of Australia businesses that earn international revenues have fewer than 50 employees (Austrade, 2015).

**Table 5-1 Firm size**

<b>Firm size</b>	<b>Frequency</b>	<b>Percentage</b>
< 10	67	19.5%
10-49	161	47.0%
50-250	115	33.5%
<b>Total</b>	<b>343</b>	<b>100%</b>

### 5.2.3.2 Location

In terms of location, following previous empirical studies (Gerschewski & Xiao, 2015), the dataset used in this study was combined data collected from Australia and New Zealand. As indicated in **Table 5-2**, 66.5% of sample firms came from Australia and the remaining 33.5% were from New Zealand.

**Table 5-2 Location**

<b>Location</b>	<b>Frequency</b>	<b>Percentage</b>
New Zealand	115	33.5%
Australia	228	66.5%
<b>Total</b>	<b>343</b>	<b>100%</b>

### 5.2.3.3 Industry

With regard to industry types, as indicated in **Table 5-3**, sample firms mainly came from five industries: manufacturing (23.9%), wholesale and retail trade (28.3%), professional and technical services (33.8%), agriculture, forestry and fishing (5.5%), and mining and quarrying (2.9%). The remaining 5.6% of firms came from a wide range of industries, such as tourism and construction.

**Table 5-3 Industry**

<b>Industry</b>	<b>Frequency</b>	<b>Percentage</b>
Manufacturing	82	23.9%
Wholesale and retail trade	97	28.3%
Professional and technical services	116	33.8%
Agriculture, forestry and fishing	19	5.5%
Mining and Quarrying	10	2.9%
Other	19	5.6%
<b>Total</b>	<b>343</b>	<b>100%</b>

### 5.2.3.4 Earliness of internationalisation

As for firms' characteristics in the temporal dimensions of internationalisation, earliness of internationalisation and length of international experience were evaluated. In the literature of international entrepreneurship, firms that have internationalised within the first three years after inception are known as born global firms (Knight & Cavusgil, 2004). According to this criterion, as indicated in **Table 5-4**, 56.3% of sample firms were born global firms and the rest (43.7%) were conventional internationalisers.



**Table 5-4 Earliness**

<b>Earliness</b>	<b>Frequency</b>	<b>Percentage</b>
≤ 3 years	193	56.3%
> 3 years	150	43.7%
<b>Total</b>	<b>343</b>	<b>100%</b>

### 5.2.3.5 Firms' international experience

With regard to the length of international experience, as shown in **Table 5-5**, just over half (50.1%) of sample firms have been engaged in international activities for more than ten years. For the remainder, 26.5% have five or less years of international experience and 23.4% have six to ten years of experience in international business. This set of figures is comparable to a national survey conducted in Australia in 2014 about Australian businesses that earn international revenues. According to the national survey, 44% have been earning international revenue for more than 10 years, 26% for 5 to 10 years and 29% for fewer than 5 years (Austrade, 2015).

**Table 5-5 Firms' international experience**

<b>International experience</b>	<b>Frequency</b>	<b>Percentage</b>
≤ 5 years	91	26.5%
6-10 years	80	23.4%
> 10 years	172	50.1%
<b>Total</b>	<b>343</b>	<b>100%</b>

### 5.2.3.6 Number of foreign markets and applied entry modes

With regard to the number of foreign markets from which the sample firms generated income, as indicated in **Table 5-6**, only 11.7% of respondents reported that they earn revenue from a single foreign market. In contrast, 34.4% of them have generated

income from two or three foreign markets, while 22.7% have international revenue from four or five foreign markets. Together, firms that generate income from two to five foreign markets account for half of the sample firms, which is quite close to that in previous national surveys conducted in New Zealand (StatsNZ, 2015) and Australia (Austrade, 2015). With regard to the number of entry modes that have been applied by the firm to exploit foreign markets, as shown in **Table 5-7**, 56.9% of firms rely on one single entry mode.

**Table 5-6 Number of foreign markets**

<b>Number of foreign markets</b>	<b>Frequency</b>	<b>Percentage</b>
= 1	40	11.7%
2-3	118	34.4%
4-5	78	22.7%
6-10	65	18.9%
> 11	42	12.3%
<b>Total</b>	<b>343</b>	<b>100%</b>

**Table 5-7 Number of applied entry modes**

<b>Number of entry modes</b>	<b>Frequency</b>	<b>Percentage</b>
1	195	56.9%
2	75	21.9%
3	44	12.8%
4	10	2.9%
5	14	4.1%
6	5	1.5%
<b>Total</b>	<b>343</b>	<b>100%</b>

### **5.2.3.7 Respondents' managerial position and prior international experience**

The characteristics of the respondents were analysed from two perspectives: positions and prior international experience. In terms of position, as shown in **Table 5-8**, 46.7%

of the respondents were managing directors of their firms. Owners and exporting managers comprised 27.7% and 20.4% respectively. The rest (4.7%) were mainly chief financial officers, operation managers, and division manager/supervisors. They all have discretion over and/or are knowledgeable about decision-making on strategic management and firm performance issues, and were therefore in a position to provide accurate responses to survey questions. With regard to prior international experience, as indicated in **Table 5-9**, more than half of the respondents had prior international experience when they took their current position.

**Table 5-8 Respondents' managerial positions**

<b>Respondents' positions</b>	<b>Frequency</b>	<b>Percentage</b>
Owner	95	27.7%
Managing director	162	47.2%
Exporting manager	70	20.4%
Other	16	4.7%
<b>Total</b>	<b>343</b>	<b>100%</b>

**Table 5-9 Respondents' prior international experience**

<b>Prior international experience</b>	<b>Frequency</b>	<b>Percentage</b>
Yes	183	53.3%
No	160	46.7%
<b>Total</b>	<b>343</b>	<b>100%</b>

### **5.3 Results from SEM Analysis**

This section presents the results from the SEM analysis. The SEM analysis was conducted in two steps. Following recommended procedures, the overall measurement model was firstly specified to assess the validity and reliability of all latent constructs of

interest. Based on the final specified measurement model, three path models were then specified to test the hypothesised relationships between the constructs.

### **5.3.1 Evaluation of the Overall Measurement Model**

#### **5.3.1.1 Measurement model specification and model fit evaluation**

Two techniques are available to examine the measurement model: exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA is conducted when researchers have no clear information about how many factors exist or which observed variables belong to which latent construct. The factors are derived from statistical results, not from theory. In contrast, CFA requires researchers to specify the number of factors that exist within a set of observed variables and which factor each observed variable should load on. In this study, all constructs are measured by well-established measurement indicators (Thompson, 2004). In other words, prior theory and studies have clearly specified how observed variables represent latent constructs in the study. Therefore, only CFA is needed in this study.

CFA estimates the parameters of factor loadings and their accompanying significance levels, variances and covariance of the factors and residual error variances of observed variables (Hox & Bechger, 2007). In addition, it assesses the fit of the measurement model to the data. The results of CFA can provide compelling evidence regarding the validity as well as reliability of the involved theoretical constructs (Kenny, 1998).

In this study, the measurement model has seven latent variables: performance, internationalisation speed, two decision-making styles, absorptive capacity, market dynamism, and technological dynamism. The correspondence between indicators and constructs can be easily specified based on the prior studies regarding measurement for these focal constructs. It is worth mentioning that all measurement models in the present study are conventional first-order models, except for that of absorptive capacity. Absorptive capacity is a multidimensional concept that comprises four learning processes, namely acquisition, assimilation, transformation and exploitation. Accordingly, in the measurement model, absorptive capacity was specified as a second-order factor, formed by four first-order factors. The second-order factor of absorptive

capacity was correlated with the other latent variables, such as internationalisation speed, decision-making styles, market dynamism and technological dynamism.

The measurement model was estimated by using the maximum likelihood estimation method. The initial measurement model indicated a poor model fit ( $\chi^2 = 4669$ ;  $df = 1866$ ;  $\chi^2/df = 2.50$ ;  $CFI = .82$ ;  $IFI = .82$ ;  $TLI = .81$ ,  $RMSEA = .06$ ,  $PCLOSE = 0.00$ ), suggesting a need for refinement of the measurement model.

Factor loadings, standardised residuals, and modification indices were reviewed in sequence in order to identify misspecification problems. With respect to factor loadings, there were some indicators with factor loadings less than .60. Specifically, absorptive capacity had five indicators with low values of loading, each of the decision-making styles had one, market dynamism had two, and technological dynamism had one. Low factor loadings suggested that the indicators were weakly related to their purported latent factors (Brown, 2014). The variance in the indicators could not be adequately explained by the latent factors. Low factor loadings affect the reliability of latent variables, since squared factor loadings are considered estimates of the variable's reliability. The content of indicators with low factor loadings was scrutinized. Deletion of these indicators would not affect the coverage of the measured constructs. Accordingly, the indicators with low factor loadings were removed from the measurement model. Appendix 1 provides a list of all the indicators that were dropped.

Standardised residuals measure how well each variance and covariance was reproduced by the theoretically specified model (Brown, 2014). As expected, those indicators with low factor loadings were found to have large standardised residuals. In addition to those indicators with low factor loadings, the standardised residual covariance between "sales volume" and "sales growth" for the latent construct of performance was 3.56, exceeding the recommend threshold of 2.58 (Byrne, 2016). The positive standardised residual suggested the measurement model underestimated the zero-order relationship between these two indicators (Brown, 2014). Indicators with a high degree of overlap in content may lead to a high level of error covariance (Byrne, 2016). Considering the redundancy, it was reasonable to remove one of the two indicators. Therefore, "sales volume" was removed, considering its loading value was lower than that of "sales growth".

After removing the indicators with low factor loadings and the indicator of “sales volume”, the model fit improved markedly ( $\chi^2 = 2733$ ;  $df = 1353$ ;  $\chi^2/df = 2.02$ ;  $CFI = .92$ ;  $IFI = .92$ ;  $TLI = 0.91$ ,  $RMSEA = .05$ ,  $PCLOSE = .008$ ). On the other hand, these model fit indices suggested that the measurement model may still have some misspecification problems, as some of them had values lower than the recommended thresholds. Accordingly, modification indices related to measurement error covariances were reviewed. Several modification indices were found to be substantially larger than others, which suggested misspecification problems in association with the pairing of error terms. However, freeing estimates for the covariance between measurement errors needs to be supported by empirical, conceptual, or practical considerations (Byrne, 2016). The addition of covariance paths implies that some of the variance in indicators that was not explained by the latent variable is due to another exogenous common cause (Brown, 2014).

For *performance*, the modification index for measurement errors in association with the two indicators of “sales growth” and “market share” was 46.27. Both “sales growth” and “market share” were subject to sales volume. Higher levels of sales volume may reflect both fast growth in sales and expansion in market share. Therefore, it was decided to include a free parameter for their associated measurement errors.

With regard to *absorptive capacity*, two larger modification indices deserved closer attention. More specifically, the modification index for measurement errors associated with “assimilation 2” and “assimilation 3” was 70.86. “Assimilation 2” aimed at measuring a firm’s ability to identify new opportunities to serve customers, while “assimilation 3” referred to a firm’s ability to analyse and interpret changes in the market. Prior research has found that changes in market can lead to creation of innovative products or services (Kjellberg, Azimont, & Reid, 2015), which provides new opportunities to serve customers (Åkerman, 2015a; Chandra, Styles, & Wilkinson, 2012; Laperrière & Spence, 2015). Therefore, it is reasonable to add a covariance path between the error terms associated with “assimilation 2” and “assimilation 3”.

Several other large values for modification indices were also reviewed, but considering there was no solid rationale to support the addition of covariance, the model modification based on modification indices stopped here. In the end, the measurement

model exhibited excellent fit ( $\chi^2 = 2620$ ;  $df = 1351$ ;  $\chi^2/df = 1.94$ ;  $CFI = .95$ ;  $IFI = .95$ ;  $RMSEA = .04$ ;  $PCLOSE = .99$ ). These model fit indices suggested that the measurement model fit the data very well. The next step was to test the reliability and validity of all latent variables based on the final measurement model.

### **5.3.1.2 Reliability**

Construct reliability indicates the internal consistency of observed variables that represent a specific latent construct (Randolph, Sapienza, & Watson, 1991). Reliability is traditionally established by calculating Cronbach's alpha value for each construct. A value of .07 is often used as a lower bound for acceptable internal consistency. However, Cronbach's alpha has its limitations. It assumes that all indicators are equally important. In addition, the value of Cronbach's alpha is sensitive to the number of indicators for each construct (Pallant, 2013) and the normality of data distribution (Sheng & Sheng, 2012). In SEM, it is recommended to use composite reliability (CR) as the indicator of construct reliability, since it has the ability to draw on the standardised loadings and measurement correlation errors for each observed measurement indicator (Shook, Ketchen Jr, Hult, & Kacmar, 2004). It is computed from the squared sum of factor loadings for each construct and the sum of the error variance terms for a construct (Hair et al., 2009). The acceptable threshold for CR is .70 or higher (Fornell & Larcker, 1981).

Values of CR for all latent variables were calculated in conjunction with parameters estimated by the final measurement model. As indicated in **Table 5-10**, the values ranged from 0.74 to 0.96, indicating that indicators all consistently represent their corresponding latent constructs.

**Table 5-10 Reliability**

	<b>Constructs</b>	<b>CR</b>
1	Performance	.91
2	Speed	.74
3	Absorptive capacity	.96
4	Rational decision-making	.92
5	Heuristic decision-making	.92
6	Market dynamism	.78
7	Technological dynamism	.89

*Note.* The calculation of CR values for each construct was based on the measurement model specified and estimated in AMOS.

### **5.3.1.3 Validity**

#### ***Convergent validity***

After confirming internal consistency, the next step is to evaluate construct validity, which involves an evaluation of the extent to which a set of indicators accurately represents their respective construct (Hair et al., 2009). There are two widely acknowledged forms of validity: convergent validity and discriminant validity. Convergent validity refers to the extent to which indicators of a certain construct share a high proportion of variance in common (Hair et al., 2009). There are two important indicators of convergent validity. The first one is the value of the factor loadings. All factor loadings should be statistically significant and their standardised loading estimates should be .60 or higher (Hair et al., 2009). Another important indicator of convergent validity is the average variance extracted (AVE). It measures the amount of variance captured by a construct in comparison to the amount of variance due to measurement error. A value of AVE of .50 or higher suggests adequate convergence (Shook et al., 2004).

As indicated in **Table 5-11**, the factor loadings of all indicators ranged from .60 to .92. They were all above the threshold of .60 and statistically significant. The values of AVE



for all latent variables exceed the recommended threshold of .50. Hence, it is safe to conclude that the convergent validity of all latent variables has been established.

**Table 5-11 Standardised factor loadings from the measurement model**

<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b>	<b>R<sup>2</sup></b>
<b>Internationalisation Speed (CR = .74, AVE = .59)</b>			
	Speed of Entry modes	.72	.66
	Speed of Foreign markets	.81***	.51
<b>Rational decision-making style (CR = .92, AVE = .50)</b>			
	ThinkO1A: I primarily rely on logic when making business decisions.	.64***	.41
	ThinkO2A: I primarily weigh quantitative factors when making a business decision, such as budget needs, or future earnings	.61***	.37
	ThinkO3A: When making important business decisions, I pay close attention to when a number of people with well-justified expertise give me the same advice.	.62***	.38
	ThinkO4A: The most important factor in making strategic changes in business (such as entering or exiting a foreign market or change product offering) is knowing that the change is based on objective, verifiable facts.	.67***	.45
	ThinkIn1A: Concepts	.70***	.49
	ThinkIn2A: Rationality	.70***	.48
	ThinkIn3A: Reason	.75***	.56
	ThinkIn4A: Logic	.78***	.61
	ThinkIn5A: Facts	.78***	.61
	ThinkIn6A: Proof	.74***	.55
	ThinkIn7A: Data	.77***	.60

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ThinkIn8A: Deduction	.64	.41
<b>Heuristic decision-making style (CR = .92, AVE = .50)</b>		
ThinkO1B: I primarily rely on my feelings when making business decisions.	.71***	.50
ThinkO2B: I primarily weigh qualitative factors when making a business decision, such as my gut feelings or a sense that the decision is right for our company.	.66***	.44
ThinkO3B: When making important business decisions, I pay close attention to when I experience a “knowing in my bones,” chills, tingling or other physical sensations.	.60***	.38
ThinkO4B: The most important factor in making strategic changes in business (such as entering or exiting a foreign market or change product offering) is feeling it is right for me.	.62***	.39
ThinkIn1B: Instincts	.68***	.47
ThinkIn2B: Empathy	.67***	.45
ThinkIn3B: Felt Sense	.76***	.58
ThinkIn4B: Inner Knowing	.72***	.52
ThinkIn5B: Feelings	.78***	.61
ThinkIn6B: Heartfelt	.83***	.68
ThinkIn7B: Hunch	.76***	.57
ThinkIn8B: Intuition	.67	.45
<b>Absorptive Capacity (CR = .96, AVE = .90)</b>		
Acquire1: We have frequent interactions with others in the industry to acquire new knowledge related to product development.	.71	.50
Acquire2: Employees are engaged in cross-functional work.	.74***	.54
Acquire3: We collect information through informal means (e.g. lunch or social gatherings with customers	.66***	.43

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and suppliers, trade partners and other stakeholders).		
Acquire5: We organise special meetings with customers, suppliers, or third parties to acquire new knowledge on process, product, logistics and distribution related innovation.	.66***	.43
Assimilate2: We are able to quickly identify new opportunities to serve our customer needs.	.74	.55
Assimilate3: We quickly analyse and interpret changing market demands.	.74***	.55
Transform1: We regularly consider the consequence of changing market demands in terms of new products and services.	.79***	.62
Transform2: We record and store newly acquired knowledge for future reference.	.77***	.60
Transform3: We quickly recognise the usefulness of new external knowledge to existing knowledge.	.78***	.60
Transform6: We periodically have meetings to discuss consequences of market trends and new product development.	.63	.39
Exploit1: It is clearly known how activities within our company should be performed.	.75	.56
Exploit2: We take customer complaints seriously.	.76***	.57
Exploit3: We constantly consider how to better exploit knowledge.	.82***	.67
Exploit5: Our company has a clear division of roles and responsibilities.	.63***	.40
Exploit6: Our employees have a common language regarding our products and services.	.76***	.58
<b>Market Dynamism (CR = .78, AVE = .54)</b>		
MarkDyna1: Changes in customer preferences take place quite regularly	.75	.56
MarkDyna2: Our customers are very receptive to new	.75***	.56

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product ideas;		
MarkDyna3: New customers tend to have product related needs that are different from those of our existing foreign customers	.70***	.49
<b>Performance (CR = .91, AVE = .68)</b>		
Sales Growth	.73	.53
Market Share	.69***	.47
ROI	.91***	.83
ROA	.92***	.84
Goal Achieving	.85***	.72
<b>Technological dynamism (CR = .89, AVE = .73)</b>		
TechDyna1: In our kind of business, technological development is changing rapidly.	.88***	.78
TechDyna2: In our kind of business, technological dynamisms provide big opportunities.	.91***	.84
TechDyna4: A large number of new products in our markets have been made possible through technological break-through.	.77	.59

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*Note.* \*\*\* $p < 0.001$

### *Discriminant validity*

After establishing convergent validity, the next step is to test discriminant validity. Discriminant validity refers to the extent to which a theoretical construct is truly distinctive from other theoretical constructs (Hair et al., 2009). The most common method used to examine discriminant validity is comparing the correlation between two constructs with the square root of AVE for each involved individual construct (Fornell & Larcker, 1981). Discriminant validity is considered to be achieved if the correlation between two constructs is smaller than the square root of AVE for each individual construct. As indicated in **Table 5-12**, the square root of AVE for each construct is greater than the correlation between two constructs, suggesting the establishment of discriminant validity.

**Table 5-12 Discriminant validity**

Constructs	AVE	1	2	3	4	5	6
1 Performance	.68	(.83)					
2 Speed	.59	.21	(.77)				
3 Absorptive capacity	.90	.48	.14	(.95)			
4 Rational decision-making	.50	.02	-.15	.26	(.71)		
5 Heuristic decision-making	.50	.17	.16	.14	-.24	(.71)	
6 Market dynamism	.54	.37	.27	.64	.02	.31	(.73)
7 Technological dynamism	.73	.36	.08	.72	.20	.14	.68 (.86)

*Note.* The values in parentheses are the square root of AVE. The correlation between each construct was calculated based on the measurement model specified and estimated in AMOS.

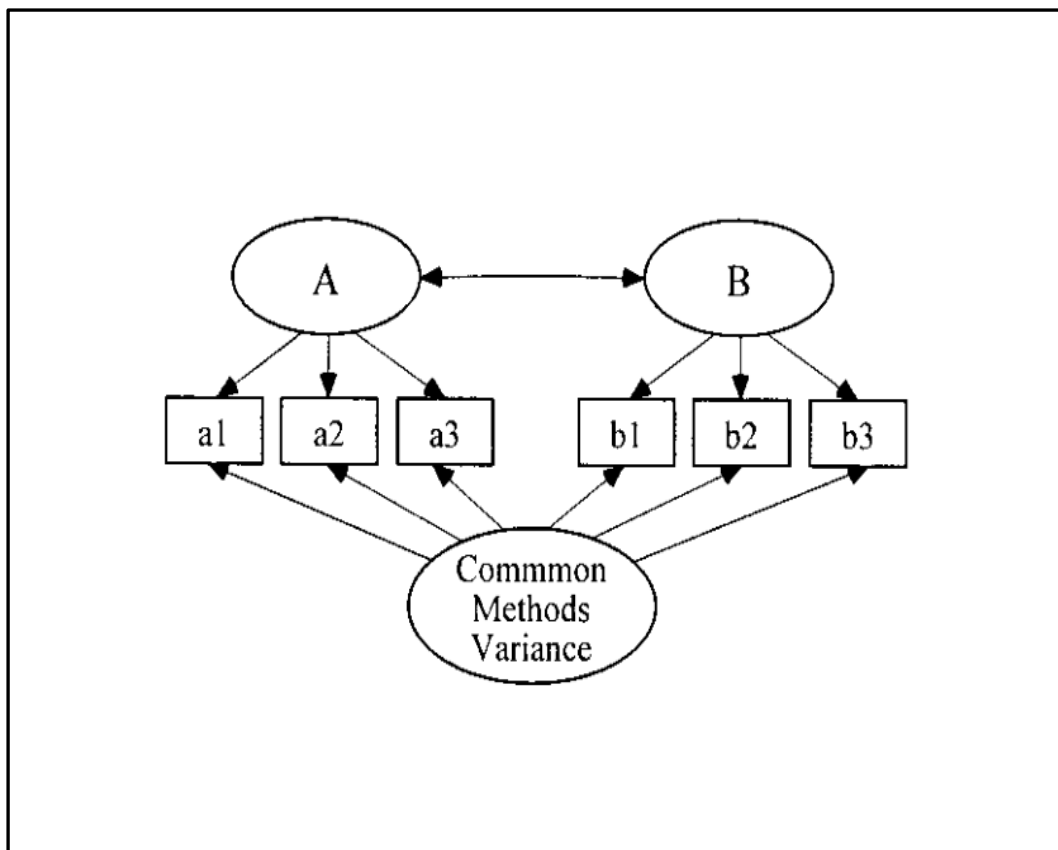
### 5.3.2 Common Method Variance

It is generally recognised that common method variance is a potential problem with self-reported data. Common method bias can create false internal consistency, which may either inflate or deflate the relationships between constructs, making them difficult to detect through statistical means (Chang, van Witteloostuijn, & Eden, 2010). There are two primary ways to control common method bias: procedural remedies and statistical remedies. In the research design stage, several procedural remedies were applied. First, the measurement of independent variables and dependent variables were conducted in different sections within the survey (Podsakoff, MacKenzie, Jeong-Yeon, & Podsakoff, 2003). This separation could reduce respondents' ability or motivation to use their prior responses to answer subsequent questions. Second, respondents were assured that their answers would remain anonymous and there were no right or wrong answers (Podsakoff et al., 2003). This could reduce respondents' tendency to answer questions in a socially desirable manner. Third, all items were carefully constructed with the aim of reducing ambiguity (Tourangeau, Rips, & Rasinski, 2000). Different scale endpoints and formats were used to measure independent variables and dependent variables. Fourth, the conceptual model and path model in this study focused on the non-linear effects and interaction effects, so that the involved complexity made it unlikely for respondents to visualize relationships between dependent and independent variables. Statistically, the complicated path model estimated in the SEM analysis reduces the likelihood of common method bias (Chang et al., 2010). CMV, if it exists, deflates regression estimates of quadratic and interaction terms, making them difficult to detect through statistical means (Siemsen, Roth, & Oliveira, 2010). In the present study, nonlinear and interaction effects were detected, implying that CMV is not a major problem.

Despite its widespread use to detect CMV, the Harman test is insensitive and not considered a useful test (Podsakoff et al., 2003). Instead, the unmeasured latent methods factor test was conducted, which involved adding a latent common methods variance factor into the CFA model (See **Figure 5-1**). In this approach, the variance of a specific item is partitioned into three components: trait, method and random error (Podsakoff et al., 2003). Following the procedures, all items were linked to their theoretical constructs as well as to the latent common methods variance factor. The variance of the latent

common methods variance factor was constrained to 1 in order to have a just- or over-identified model, so that AMOS could calculate standardised factor loadings and the associated significance level. Then, standardised factor loadings from the model with the latent common methods variance factor were computed and compared with those from the CFA model. As indicated in **Table 5-13**, adding the latent common method variance factor did not change the factor loadings considerably (except for Item Exploit 2 measuring absorptive capacity). Thus, common method variance is not a pervasive problem in the present study.

**Figure 5-1 Unmeasured latent methods factor test**



(Source: Podsakoff et al, 2003, p.890)

**Table 5-13 Comparing factors loadings from CFA models with and without latent common methods variance factor**

<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b> (without CMV factor)	<b>Factor Loadings</b> (with CMV factor)	<b>Difference</b>	<b>Constructs</b>	<b>Items</b>	<b>Factor Loadings</b> (Without CMV factor)	<b>Factor Loadings</b> (With CMV factor)	<b>Difference</b>
<b>Speed</b>	Speed of entry modes	.72	.68	.04	<b>Heuristic decision-making style</b>	ThinkO1B	.71	.65	.06
	Speed of foreign markets	.81	.76	.05		ThinkO2B	.66	.61	.05
<b>Rational decision-making style</b>	ThinkO1A	.64	.52	.12		ThinkO3B	.60	.58	.02
	ThinkO2A	.61	.60	.01		ThinkO4B	.62	.59	.02
	ThinkO3A	.62	.52	.10		ThinkIn1B	.68	.71	-.03
	ThinkO4A	.67	.56	.11		ThinkIn2B	.67	.67	.00
	ThinkIn1A	.70	.67	.03		ThinkIn3B	.76	.73	.03
	ThinkIn2A	.70	.65	.05		ThinkIn4B	.72	.71	.01
	ThinkIn3A	.75	.63	.12		ThinkIn5B	.78	.74	.04
	ThinkIn4A	.78	.72	.06		ThinkIn6B	.83	.76	.07
	ThinkIn5A	.78	.71	.07		ThinkIn7B	.76	.69	.07
	ThinkIn6A	.74	.65	.09		ThinkIn8B	.67	.67	.00
ThinkIn7A	.77	.64	.13						



	ThinkIn8A	.64	.59	.05					
<b>Absorptive capacity</b>	Acquire1	.71	.66	.05	<b>Market dynamism</b>	MarkDyna1	.75	.75	.00
	Acquire2	.74	.65	.09		MarkDyna2	.75	.74	.01
	Acquire3	.66	.59	.07		MarkDyna3	.70	.75	-.05
	Acquire5	.66	.63	.03					
	Assimilate2	.74	.68	.06	<b>Performance</b>	Sales Growth	.73	.73	.00
	Assimilate3	.74	.73	.01		Market Share	.69	.69	.00
	Transform1	.79	.73	.06		ROI	.91	.91	.00
	Transform2	.77	.65	.12		ROA	.92	.92	.00
	Transform3	.78	.70	.08		Goal Achieve	.85	.86	.00
	Transform6	.63	.57	.06					
	Exploit1	.75	.65	.10	<b>Technological dynamism</b>	TechDyna1	.88	.85	.03
	Exploit2	.76	.54	.22		TechDyna2	.91	.87	.04
	Exploit3	.82	.69	.13		TechDyna4	.77	.82	-.05
	Exploit5	.63	.55	.08					
Exploit6	.76	.63	.13						

### **5.3.3 Testing Curvilinear and Interaction Effects in SEM**

Before presenting more details about the results of the estimated path models, it is necessary to discuss the statistical approach to examining curvilinear and interaction effects in SEM as well as the centring approaches to eliminate nonessential multicollinearity caused by creating curvilinear and interaction terms.

#### **5.3.3.1 Representing curvilinear and interaction effects with polynomials**

A linear relationship can be best summarised by a straight line. For curvilinear relationships, the traditional and common approach in social sciences is polynomial regression (Cohen, Cohen, West, & Aiken, 2013). Power polynomials, such as linear, quadratic and cubic terms, are a convenient method of fitting curves of almost any shape (Cohen et al., 2013). In a polynomial equation, the term with the highest exponent is called the highest order term, while the rest are referred to as lower order terms. The highest order term reflects the inflection point of a nonlinear relationship only if all lower order terms are partialled out. Therefore, all lower order terms should be included in the polynomial equation in order to ensure that the highest order term has meaning (Cohen et al., 2013).

When interpreting the regression coefficients, the sign of the highest order term in a polynomial equation determines the overall shape of the regression function (Cohen et al., 2013). In a quadratic equation, a positive coefficient for the quadratic term indicates a U-shape, while a negative coefficient indicates an inverted U-shape relationship. In addition, in a quadratic equation, there is no need to report the coefficient for the linear term or test the significance of this coefficient, since it represents the linear regression of Y on X only at the point  $X = 0$  (Cohen et al., 2013).

Interaction refers to an interplay among predictors that produces an effect on the outcome, which is different from the sum of the effects of the individual predictors (Cohen et al., 2013). The interaction effects, normally linear by linear in form, can be represented by a cross-product formed by multiplying one predictor by the other. In a regression analysis, the cross-product must be significant in order for the interaction effect to be interpretable.

In addition to the interaction between linear variables, there may be interaction between curvilinear variables and linear variables. In the present study, the proposed moderation effect of international experience on the direct relationship between internationalisation speed and absorptive capacity represented an interaction between a curvilinear variable and a linear variable. This kind of interaction represents a curvilinear by linear interaction. It implies that the degree of curvilinearity of a relationship depends upon the level of the linear variable. A curvilinear by linear interaction can be represented by multiplying the power term by the linear variable. This cross-product must be statistically significant to ensure there is a curvilinear by linear interaction to be interpreted. It is worth noting that, in addition to the higher order terms representing the curvilinear by linear interaction, all other lower order terms that are created from the predictor and moderator should also be included in the equation (Cohen et al., 2013).

### **5.3.3.2 Multicollinearity**

The creation and addition of quadratic and interaction terms into the regression model intensifies the issue of multicollinearity, a situation in which two or more independent variables are highly correlated (Pallant, 2013). Multicollinearity affects the predictive ability of the structural model (Hair et al., 2009). Specifically, multicollinearity creates large portions of shared variance between variables and reduces the level of unique variance, which makes it difficult to distinguish the effects of each individual independent variable. In addition, multicollinearity also affects the estimation of regression coefficients. An increase in multicollinearity may result in regression coefficients being incorrectly estimated and even having the wrong signs (Hair et al., 2009). The extreme case of multicollinearity in which two or more independent variables are perfectly correlated prevents the estimation of regression coefficients. Apart from affecting the estimation of regression coefficients, the significance test associated with each estimated regression coefficient will also be markedly affected as multicollinearity increases.

The conceptual framework proposed in the present study (see Section 3.2.3) mainly focuses on the curvilinear relationships and interaction effects of both mediating and moderating variables. To statistically estimate such a complex framework, quadratic terms and interaction terms must be created and included in the modelling analysis.

Given the potentially high correlations between quadratic terms and the original variables as well as between the interaction terms and their original variables, the issue of multicollinearity must be assessed and addressed.

### *Mean centring versus residual centring*

Traditionally, the mean centring approach has been applied to eliminate nonessential multicollinearity in the analysis. Following the mean centring approach, the original variables are mean centred before creating the powered and interaction terms. An alternative approach is the residual centring that is essentially a two-stage ordinary least squares procedure, in which the powered or interaction term is regressed onto its respective original variables (Lance, 1988). The standardised residuals of this regression are then used to represent the nonlinear or interaction effects. Compared to mean centring, residual centring can ensure full independence between original variables and their powered or interaction terms, and produce stable coefficients for and unbiased significance of the powered or interaction terms (Little, Bovaird, & Widaman, 2006). More importantly, the standardised coefficient for the residualized terms is directly interpretable as the effect of the interaction between the original variables on dependent variables (Lance, 1988).

Considering its inherent advantages, this study applied the residual centring approach to create the quadratic and interaction terms. To facilitate the creation of quadratic and interaction terms, average scores for latent variables including internationalisation speed, decision-making styles and market dynamism were calculated respectively in SPSS. Then, the procedures of the residual centring approach were followed to create quadratic and interaction terms. More specifically, the squared term of internationalisation speed was regressed onto internationalisation speed. The standardised residuals of this regression were then added into the path models to represent the curvilinear effect. For the curvilinear by linear interaction, the first interaction term was formed by multiplying internationalisation speed squared and international experience. This interaction term was then regressed onto internationalisation speed squared and international experience. The standardised residuals of this regression were then added into the path models to represent the curvilinear by linear interaction. Following the same procedure, the new variables

representing the linear interaction between internationalisation speed and international experience as well as those between two decision-making styles and market dynamism were created respectively and added to the models.

### *Test of multicollinearity*

Multicollinearity exists when the correlation between independent variables reaches .9 or higher (Pallant, 2013). A direct measure of multicollinearity is tolerance. It is defined as the amount of variability of the selected independent variables not explained by the other independent variables (Hair et al., 2009). Another direct measure of multicollinearity is the variance inflation factor (VIF). It is calculated as the inverse of the tolerance value. A high VIF denotes a high degree of multicollinearity. A common cut-off threshold of VIF is 10.

In this study, the degree of multicollinearity was assessed based on the correlation matrix and VIF values. As indicated in **Table 5-14**, the procedures taken by following the residual centring approach effectively reduced the multicollinearity that could be caused by powered and interaction terms. The single highest value for correlation between each variable was .78. The values of VIF ranged from 1.09 to 5.57, which was below the commonly accepted upper value of 10. Together, this indicated that multicollinearity is not a problem in this study.

**Table 5-14 Descriptive Statistics, Correlation Matrix and VIF**

		Mean	SD	VIF	1	2	3	4	5	6	7	8	9	10	11	12	13
1	Ln Firm age	2.80	.80	4.82													
2	Ln Firm size	3.24	1.28	1.26	.34**												
3	Technological dynamism	5.12	1.25	2.15	-.02	.15**											
4	Speed	.30	.44	3.67	-.58**	-.18**	.08										
5	Speed <sup>2</sup>	.00	1.00	3.09	.34**	.04	.01	.00									
6	Absorptive capacity	5.24	.87	2.25	-.012	.02	.64**	.10	-.08								
7	Rational decision-making	2.82	.71	1.24	.04	.04	.15**	.01	.09	.25**							
8	Heuristic decision-making	1.79	.81	1.21	-.11*	-.10	.17**	.09	.02	.14*	-.19**						
9	International experience	13.52	12.00	1.97	.66**	.22**	-.05	-.25**	.19**	-.05	.06	-.11*					
10	Speed × International experience	.00	1.00	3.37	.03	-.04	.06	.00	-.53**	.07	-.04	-.02	.00				
11	Speed <sup>2</sup> × International experience	.00	1.00	5.57	-.09	-.03	.08	.33**	-.57**	.10	.02	-.03	.00	.78**			
12	Market dynamism	5.11	.95	2.18	-.10	.11	.63**	.19**	-.04	.61**	.06	.28**	-.06	-.01	.05		
13	Rational decision-making × Market dynamism	.00	1.00	1.09	-.03	-.06	-.03	.07	.10	-.10	.00	.14**	-.01	-.02	-.02	.00	
14	Heuristic decision-making × Market dynamism	.00	1.00	1.14	-.13*	.02	.05	.16**	.01	.13*	.20**	.00	-.09	-.04	.02	.00	-.14**

*Note.* (1) The correlation between constructs was calculated in SPSS after converting all latent variables into observed variables by mean centring.  
(2) \*\*p < .01; \*p < .05

### **5.3.4 Evaluation of Path Models**

Based on the results from the final measurement model, three path models were specified and estimated in sequence to test the hypothesised relationships between constructs. The next section briefly discusses the three path models as well as the assessment of model fit. Then, the results of hypothesis testing are provided.

#### **5.3.4.1 Specifying path models and model fit evaluation**

Three path models were specified in the present study. In the first path model, internationalisation speed squared, decision-making styles, performance and control variables including internationalisation speed, firm size, firm age and technological dynamism were entered. The first path model examined the effects of internationalisation speed and decision-making styles as two independent variables on performance. In addition to assessing the direct effects of the two independent variables on performance, this path model also aimed at providing a baseline model to examine the mediating effect of absorptive capacity on the speed-performance relationship, as well as the moderating effects of market dynamism on direct relationships between decision-making styles and performance.

Before estimating the first path model, a covariance path between rational decision-making style and technological dynamism was added. Prior literature has stated that the adoption of rational decision-making style is subject to external business environments, which is complicated by noisy, ambiguous information, time constraints and high uncertainty (Maitland & Sammartino, 2015). The advancements in technology have shaped the business environment by shortening the production cycle and interrupting the process of knowledge creation and utilization (Omidvar, Edler, & Malik, 2017; Yu et al., 2014), which subsequently affected managers' adoption of rational decision-making styles. Thus, it was reasonable to co-vary rational decision-making style and technological dynamism in the path model.

The first path model had a good fit with the data:  $\chi^2 = 134$ ,  $df = 65$ ;  $\chi^2/df = 2.06$ ;  $CFI = .97$ ;  $IFI = .97$ ;  $TLI = .96$   $RMSEA = .06$ ,  $PCLOSE = .227$ .

In the second path model, absorptive capacity was added as an endogenous variable. The second path model tested the direct effect of internationalisation speed and decision-making styles on absorptive capacity development respectively. In addition, the second path model provided a baseline model to examine the moderating effects of international experience on the direct relationship between internationalisation speed and absorptive capacity as well as the moderating effect of market dynamism on the direct relationships between decision-making styles and absorptive capacity. The second structural model also had a good fit:  $\chi^2 = 606$ ;  $df = 348$ ;  $\chi^2/df = 1.74$ ;  $CFI = .96$ ;  $IFI = .96$ ;  $TLI = .95$ ;  $RMSEA = .05$ ,  $PCLOSE = .82$ .

In the third path model, moderators and their interaction terms were added to the second model. The third path model examined the mediating and moderating effects. The third structural model showed a good fit:  $\chi^2 = 848$ ;  $df = 504$ ;  $\chi^2/df = 1.68$ ;  $CFI = .95$ ;  $IFI = .95$ ;  $TLI = .94$ ;  $RMSEA = .05$ ,  $PCLOSE = .95$ .

The explanatory power of the three path models was evaluated by the  $R^2$  values of the endogenous latent variables in each path model as well as the incremental increase in these values. As indicated in **Table 5-15**, in the first path model, 15% of the variance in performance was accounted for by internationalisation speed, managerial decision-making styles, technological dynamism, firm size and firm age. In the second path model, 26% of the variance in performance was explained, an increase of 11% in comparison to the first path model. In the third path model, the variance in performance explained by the path model reached 29%. The additional 3% of variance was accounted for by adding the interaction terms.

With regard to absorptive capacity, in the second path model, 56% of the variance was accounted for by internationalisation speed, managers' decision-making styles and control variables. After adding the interaction terms, an additional 9% of variance in absorptive capacity was explained.



**Table 5-15 R<sup>2</sup> values for endogenous variables in path models**

Path model	Performance		Absorptive capacity	
	R <sup>2</sup>	Δ R <sup>2</sup>	R <sup>2</sup>	Δ R <sup>2</sup>
1 <sup>st</sup> path model	.15	-	-	-
2 <sup>nd</sup> path model	.26	.11	.56	-
3 <sup>rd</sup> path model	.29	.03	.65	.09

### 5.3.4.2 Hypothesis testing

The good model fit provided a solid basis for testing the proposed hypotheses. The direct relationships between internationalisation speed and performance as well as those between decision-making styles and performance were examined based on the results of the first path model. The direct relationships between internationalisation speed and absorptive capacity as well as those between decision-making styles and absorptive capacity were examined based on the results of the second path model. The mediating and moderating effects were examined based on the results of the third path model.

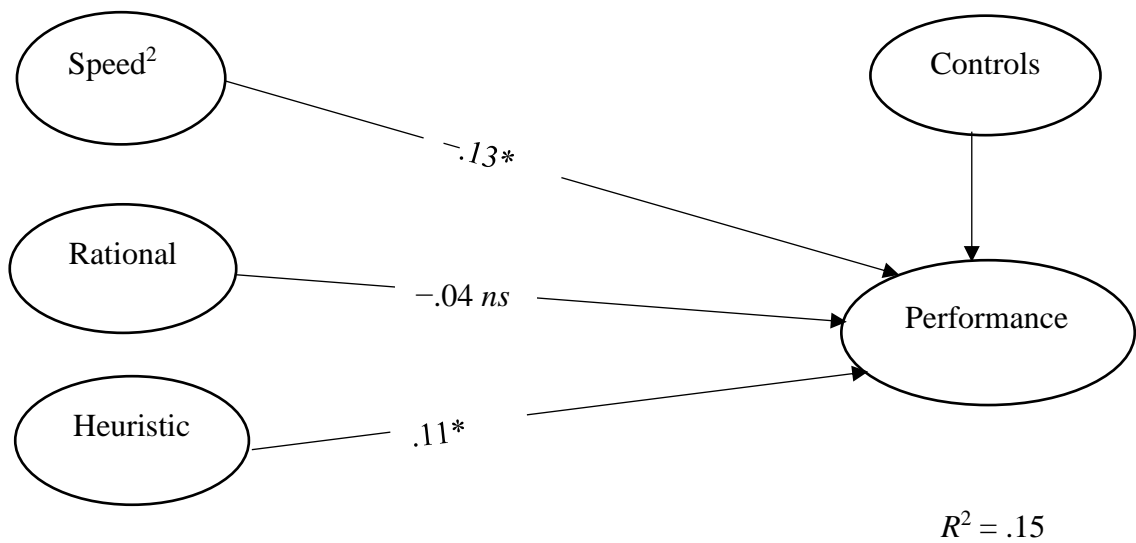
#### *Direct relationships*

The results of the first path model indicated that internationalisation speed squared significantly predicted firm performance. As shown in **Figure 5-2**, the standardised coefficient is  $-.13$  ( $p = .029$ ). The negative sign for the quadratic term of internationalisation speed suggests that internationalisation speed influences performance in an inverted U-shape curvilinear relationship. Thus, Hypothesis 1 regarding the inverted U-shape relationship between internationalisation speed and performance was supported.

As for the direct relationships between rational decision-making styles and performance, the negative influence of rational decision-making on firm performance was quite weak and insignificant (see **Figure 5-2**). Thus, Hypothesis 2a regarding the insignificant relationship between rational decision-making and firm performance was supported. In contrast, the direct relationship between heuristic decision-making style and

performance is found to be significant, with a standardised coefficient of .11 ( $p = .039$ ). Thus, Hypothesis 2b regarding a positive influence of heuristic decision-making style on firm performance is accepted.

**Figure 5-2 Path model one**

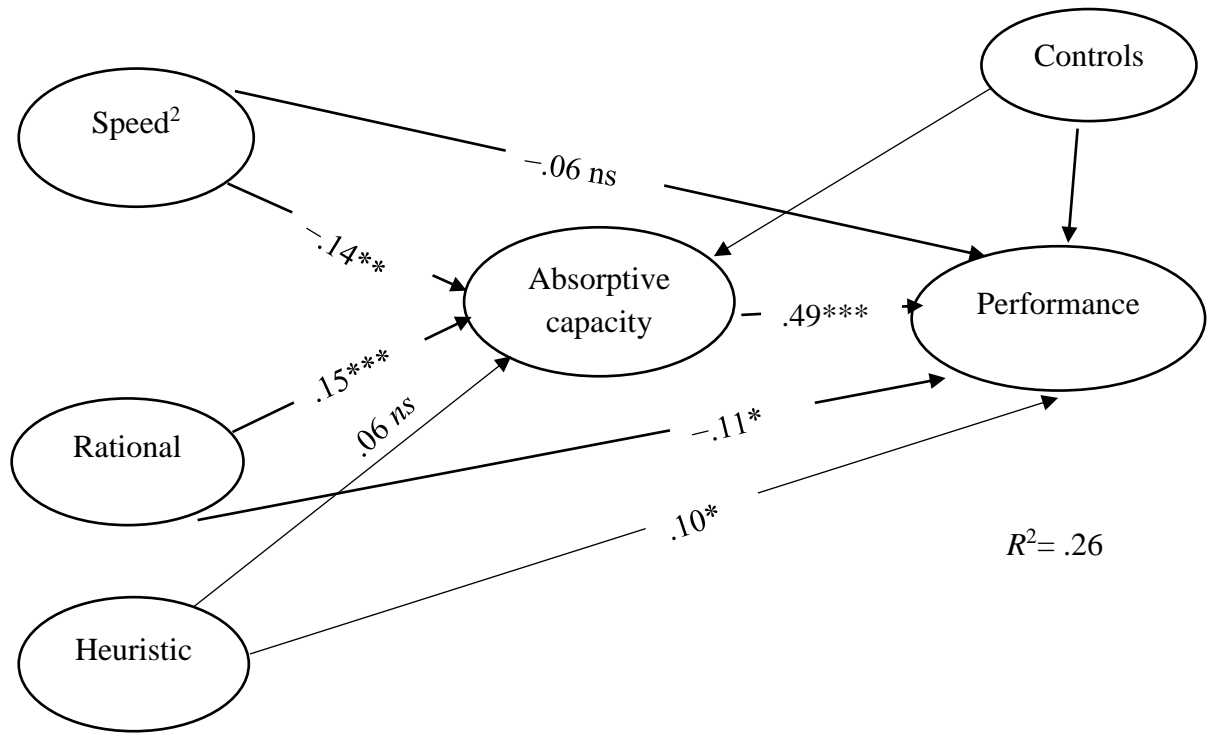


*Note.* (1) Speed is also included as a predictor of absorptive capacity and firm performance.  
(2) The associated estimated parameters are not depicted here for reasons of clarity.  
(3) \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

For the direct relationships between internationalisation speed squared and absorptive capacity, the results of the second path model indicated that internationalisation speed squared significantly predicted absorptive capacity. As indicated in **Figure 5-3**, the standardised coefficient was  $-.14$  ( $p < .01$ ). The negative sign for the quadratic term of internationalisation speed indicates an inverted U-shape curvilinear relationship between internationalisation speed and absorptive capacity. Thus, hypothesis 3 regarding the influence of internationalisation speed on the development of absorptive capacity in a curvilinear relationship was confirmed.

As for the direct relationship between rational decision-making and absorptive capacity, the results demonstrated a significant and positive effect of rational decision-making on absorptive capacity. As indicated in **Figure 5-3**, the standardised coefficient for this direct relationship was  $.15$  ( $p < .001$ ). This result confirmed Hypothesis 4a that managers' rational decision-making positively affects development of absorptive capacity. Meanwhile, it is found that managers' heuristic decision-making style has no significant influence on absorptive capacity, with a standardised coefficient of  $.06$  (See **Figure 5-3**). Thus, Hypothesis 4b was also confirmed.

**Figure 5-3 Path model two**



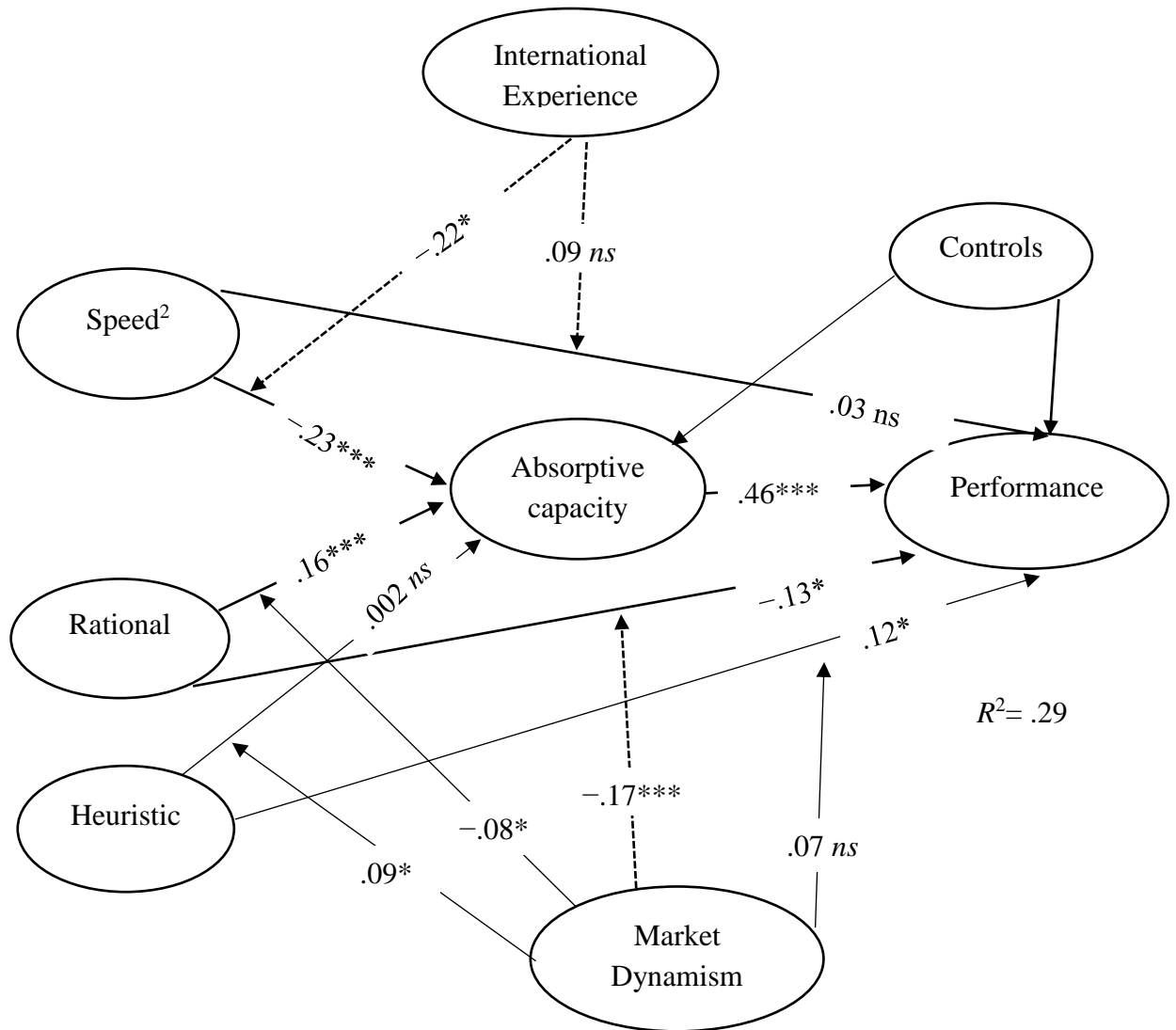
*Note.* (1) Speed is also included as a predictor of absorptive capacity and firm performance.  
 (2) The associated estimated parameters are not depicted here for reasons of clarity.  
 (3)  $***p < .001$ ,  $**p < .01$ ,  $*p < .05$

### *Mediation effects*

As described earlier, the first path model confirmed the existence of a significant effect of internationalisation speed on performance, while absorptive capacity was not included in the model. This result provided a baseline model to examine the mediating role played by absorptive capacity on the relationship between internationalisation speed and performance. In the third model, when absorptive capacity was introduced as a mediator, the direct relationship between internationalisation speed squared and performance became insignificant. As shown in **Figure 5-4**, the variable of internationalisation speed squared significantly predicted absorptive capacity; at the same time, absorptive capacity had a significant and linear effect on firm performance. Together, these results suggested a full mediating effect of absorptive capacity on the relationship between internationalisation speed and firm performance. More importantly, the mediation was nonlinear, which meant that the mediating effect of the internationalisation speed on firm performance via absorptive capacity varied with the direct effect of internationalisation speed (Hayes & Preacher, 2010).

Following the procedures recommended by Cheung and Lau (2008), this mediating effect was further confirmed by using bootstrapping in AMOS to test the significance of the indirect effects. The number of resamples for estimating bias corrected bootstrap intervals was set to 5000 and the level of confidence for the confidence interval was set to 95%. For the indirect effect of internationalisation speed squared on firm performance, the 95% bootstrapping confidence intervals are between  $-.24$  and  $-.01$ , with  $p = .03$  for the two-tailed significance test. There was no zero falling in the intervals, thereby confirming the significance of the indirect effects. Thus, it can be concluded that absorptive capacity fully mediates the relationship between internationalisation speed and performance, supporting Hypothesis 5.

**Figure 5-4 Path model three**

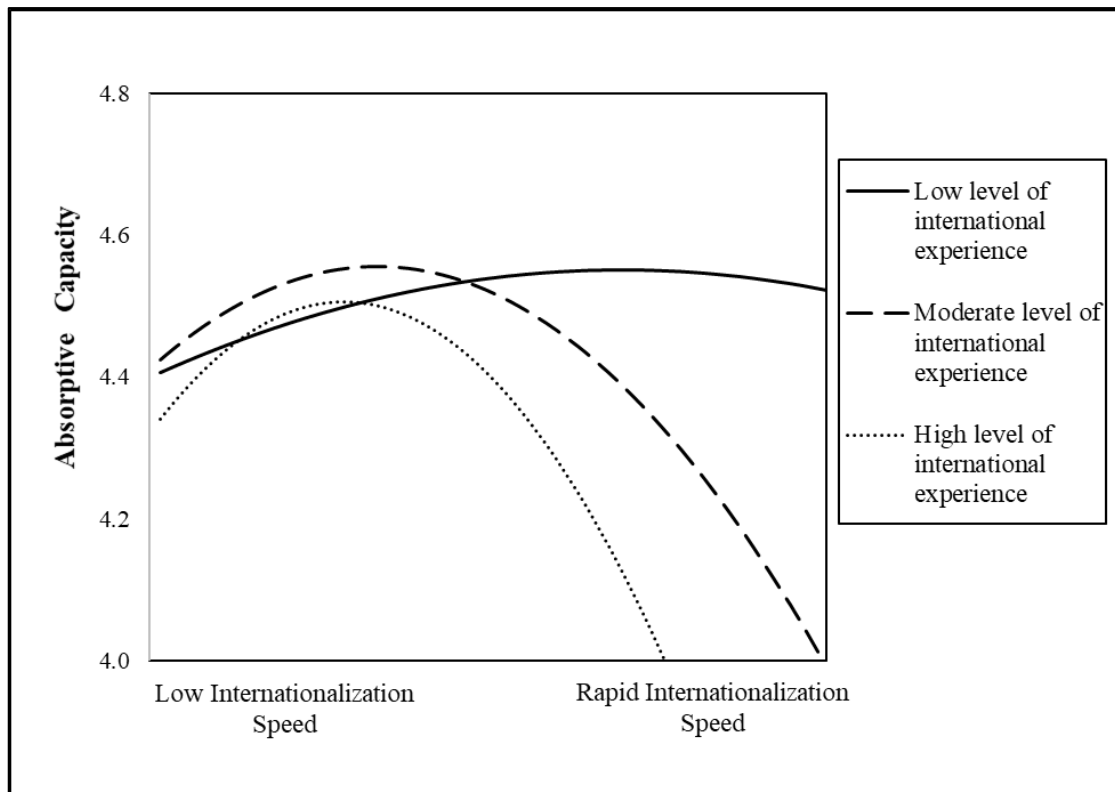


*Note.* (1) Speed is also included as a predictor of absorptive capacity and firm performance.  
 (2) The associated estimated parameters are not depicted here for reasons of clarity.  
 (3) \*\*\* $p < .001$ , \*\* $p < .01$ , \* $p < .05$

### *Moderation effects*

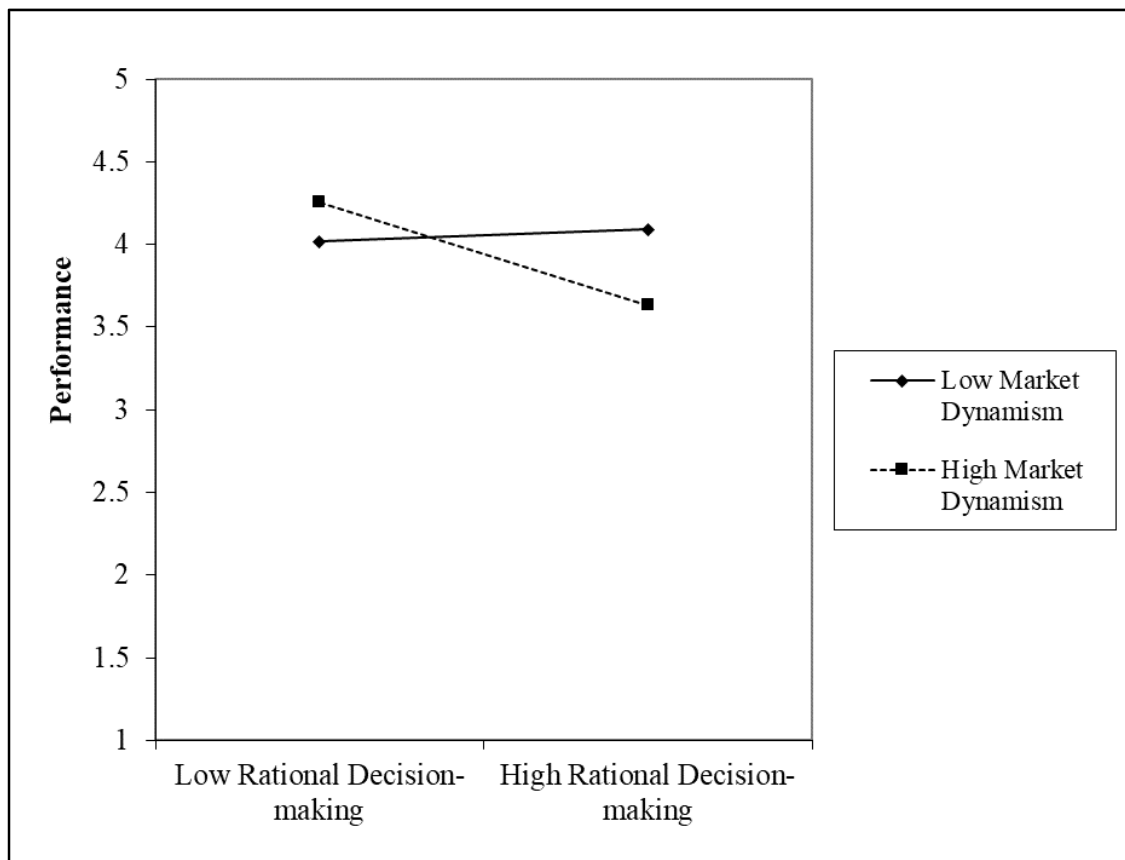
The examination of moderation effects was also based on results generated from the third path model. As indicated in **Figure 5-4**, the interaction term between internationalisation speed squared and international experience significantly predicted absorptive capacity. The standardised coefficient was  $-0.22$  ( $p = .015$ ). This result demonstrates that the direct speed-absorptive capacity link is contingent on the level of international experience. This moderated curvilinear relationship is depicted in **Figure 5-5**. There was an inverted-U-shape relationship between internationalisation speed and absorptive capacity at either low, moderate, or high levels of international experience. Moreover, as the level of international experience increases, the curved line representing the relationship between internationalisation speed and absorptive capacity becomes steeper. Hypothesis 6 posited that international experience moderates the direct effect of internationalisation speed on absorptive capacity, so that the inverted U-shape curvilinear speed-absorptive capacity relationship would be stronger. This hypothesis is fully supported by the modelling result.

**Figure 5-5 Moderating effect of international experience on the relationship between internationalisation speed and absorptive capacity**



For the moderating effect of market dynamism on the direct relationship between rational decision-making and performance, it was worth noting that an insignificant relationship between rational decision-making and performance became strongly significant when market dynamism was added to the path model as a moderator. As indicated in **Figure 5-4**, the standardised coefficient for the path between rational decision-making and performance was  $-.13$  with  $p = .02$ . In addition, the standardised coefficient for the path between the interaction term (for rational decision-making and market dynamism) and performance was  $-.17$  with  $p = .001$ . Together, these results suggested that market dynamism negatively and substantially moderated the relationship between rational decision-making and performance. This negative and significant moderation effect was depicted in **Figure 5-6**. Thus, Hypothesis 7a regarding the negative moderating effect of market dynamism on the relationship between rational decision-making and performance was supported.

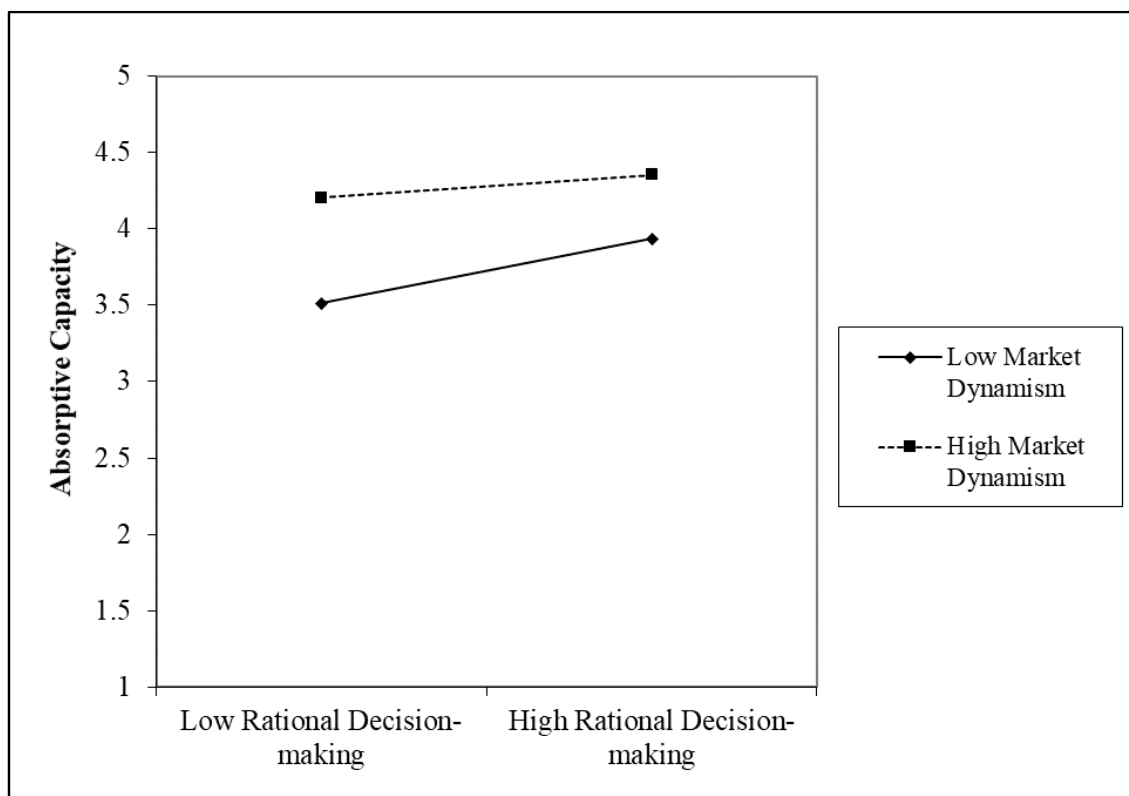
**Figure 5-6 Moderating effect of market dynamism on the relationship between rational decision-making and performance**





As for the interaction term formed by market dynamism and rational decision-making, the results showed that it negatively affected absorptive capacity. The standardised coefficient was  $-0.08$  with  $p = .045$  (See **Figure 5-4**). However, the two variables of rational decision-making style and market dynamism, on their own, positively predicted absorptive capacity. Their standardised coefficients were  $.16$  with  $p < .001$  and  $.30$  with  $p < .001$ , respectively (See **Figure 5-4**). Together, the results suggested that the positive effect of rational decision-making on absorptive capacity is significantly reduced as market dynamism increases. This moderation effect was depicted in **Figure 5-7**. A positive slope of the linear relationship between rational decision-making and absorptive capacity either at a low or a high level of market dynamism demonstrates a positive influence of rational decision-making on absorptive capacity. On the other hand, a comparison of slopes for the linear relationship indicates that the slope reduced at a high level rather than a low level of market dynamism, suggesting a negative moderation of market dynamism on the linear relationship. Thus, Hypothesis 8a regarding the negative moderation effect of market dynamism on the relationship between rational decision-making and absorptive capacity was accepted.

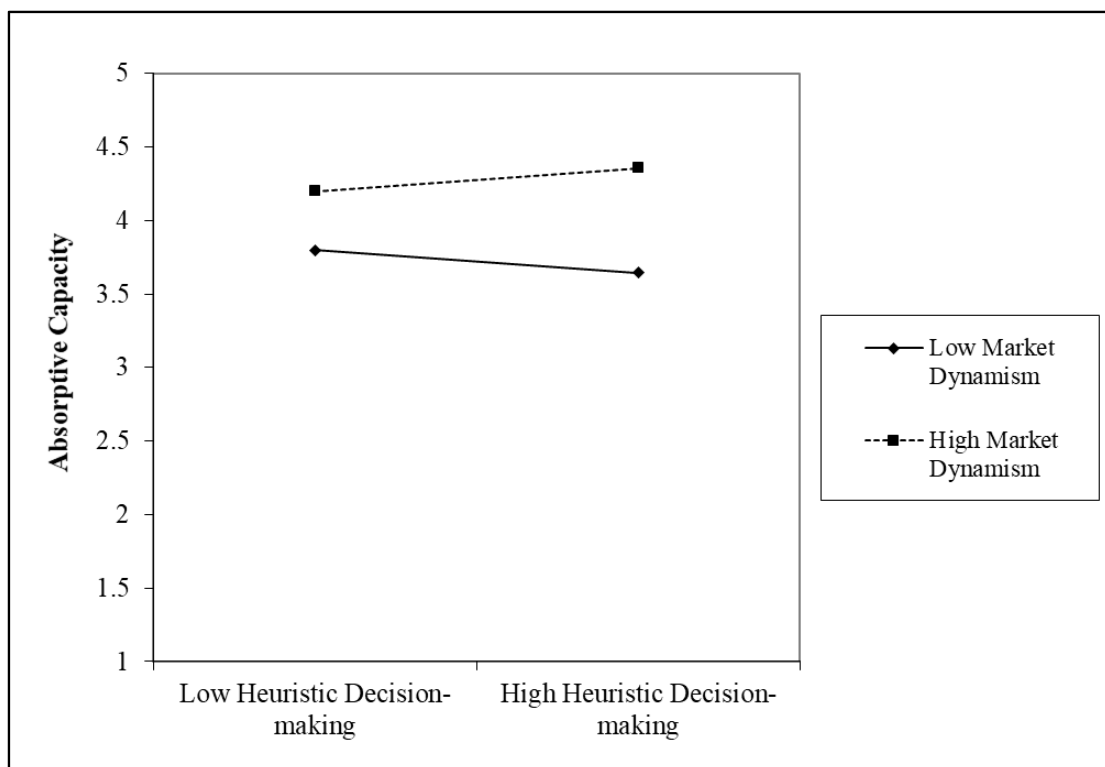
**Figure 5-7 Moderating effect of market dynamism on the relationship between rational decision-making and absorptive capacity**



As for the moderating effect of market dynamism on the relationship between heuristic decision-making and performance, as indicated in **Figure 5-4**, the standardized coefficient for the path between the interaction term (for heuristic decision-making and market dynamism) and performance was .07. However, the associated  $p$  value is .16. Thus, Hypothesis 7b regarding the positive moderating effect of market dynamism on the relationship between heuristic decision-making and performance was not supported.

Despite the insignificant relationship between heuristic decision-making and absorptive capacity, the standardised coefficient for the path between the interaction term (for heuristic decision-making and market dynamism) and absorptive capacity was .09, with  $p = 0.02$  (See **Figure 5-4**). This moderation effect is depicted in **Figure 5-8**. The linear relationship between heuristic decision-making and absorptive capacity is negative at a low level of market dynamism. Interestingly, the linear relationship becomes positive at a high level of market dynamism. Thus Hypothesis 8b, positing that market dynamism positively moderates the relationship between heuristics decision-making and absorptive capacity, was supported.

**Figure 5-8 Moderating effect of market dynamism on the relationship between heuristic decision-making and absorptive capacity**



## **Chapter 6 - Discussion**

### **6.1 Introduction**

This chapter provides a detailed discussion about the findings and their theoretical contributions. For the sequence of interpretation of findings, the performance implications of rapid internationalisation and the essential role of absorptive capacity played in this relationship are firstly discussed. Then, the findings about the influence of internationalisation speed and prior international experience on absorptive capacity are discussed. Lastly, an interpretation of the influence of managerial cognition on absorptive capacity and firm performance, and their contingency on market dynamism, are presented.

### **6.2 Interpretation of Findings**

Based on the integration of action- and cognition- based approaches to dynamic capability development, this study incorporates time and managerial cognition into the internationalisation models. It takes a micro perspective to examine the dynamics of learning capability in the context of internationalisation and articulates some key boundary conditions for this process. This study finds that absorptive capacity, as a dynamic learning capability, has important implications for performance during rapid internationalisation. The interaction between internationalisation speed, managerial cognition and their contingent factors including prior international experience and market dynamism influence a firm's level of absorptive capacity

The following sections provide detailed interpretations of the findings and their contribution to the relevant literature.

#### **6.2.1 Rapid internationalisation as a profit-generating strategy**

In spite of increasing attention to the temporality of internationalisation, research on the temporal dimension of internationalisation is still in its infancy. Extant internationalisation theories have provided conflicting views about the performance

implications of rapid internationalisation. Empirically, most existing studies on rapid internationalisation conceptualised internationalisation speed as either the time elapsing between the firm's foundation and its first international sales or the increase in the number of new foreign markets over a certain period (García-García et al., 2017; Mohr & Batsakis, 2017; Zhou & Wu, 2014). As a result, prior studies neglected corresponding changes in entry modes, which require substantial commitment of resources and are more influential on performance. A simultaneous focus on increases in the number of foreign markets and applied entry modes over a certain period can more precisely portray the complexity of internationalisation, thereby providing a better perspective to examine the performance implications of rapid internationalisation. Guided by existing literature and theories, this study hypothesises that internationalisation speed, as measured by a firm's diversification into foreign markets and range of applied entry modes, has an inverted-U relationship with performance.

Consistent with the proposed hypothesis, the findings confirmed an inverted-U relationship between internationalisation speed and performance, indicating both positive and negative effects of internationalisation speed on firm performance. More specifically, the curvilinear relationship suggests that firms are unlikely to improve the performance of international expansion when their internationalisation is either too fast or too slow. Instead, at a moderate internationalisation speed, firms are more likely to maximise the benefits associated with the learning advantages of newness as well as to minimise the costs associated with time compression diseconomies, thereby generating the highest net profit from international expansion.

When starting internationalisation, firms are less likely to be equipped with a heritage of well-developed capabilities that are conducive to internationalisation (Autio et al., 2011). Development of new capabilities requires the addition of new knowledge coupled with time to identify the cause-effect relationships between actions and outcomes. At a moderate internationalisation speed, firms are able to develop new capabilities with efficiency and effectiveness. This finding is consistent with recent research that found a nonlinear relationship between internationalisation speed and performance in the context of multinational enterprises (García-García et al., 2017; Mohr & Batsakis, 2017; Yang et al., 2017).

This finding has important implications to existing internationalisation theories. It reconciles the conflicting views in the existing theories that argued for either a positive (Oviatt & McDougall, 2005b) or a negative (Johanson & Vahlne, 1977) relationship between rapid internationalisation and firm performance. Theoretically, this finding implies that there are boundaries for the application either of internationalisation process theories or international entrepreneurship research to predict the performance implications of internationalisation. An accelerated internationalisation process does positively affect performance under some conditions, which conflicts with the predictions of the internationalisation process theories and resonates with those in the international entrepreneurship research. However, the positive influence of rapid internationalisation on performance is not sustainable and can only reach a certain point. Beyond that point, the benefits start to decline, which is in line with the internationalisation process models and inconsistent with international entrepreneurship research.

### **6.2.2 Mediating role of absorptive capacity in the relationship between post-entry internationalisation speed and performance**

More recently, prior studies have started to examine the contingent nature of the curvilinear relationship between internationalisation speed and performance (García-García et al., 2017; Jiang et al., 2014; Mohr & Batsakis, 2017; Yang et al., 2017). Primarily, these studies were rooted in the knowledge-based view and examined the interactive effect of knowledge (García-García et al., 2017; Jiang et al., 2014; Mohr & Batsakis, 2017; Yang et al., 2017). However, as a static firm resource, knowledge has only limited explanatory power to address issues regarding firms' competitive advantages and performance in a dynamic environment (Priem & Butler, 2001). Compared to static resources, dynamic capabilities are more likely to create divergence in performance implications, especially in a rapidly changing environment, such as that facing firms in their internationalisation (Teece, 2014a).

The development of dynamic capability requires the commitment of a considerable amount of resources and its effectiveness is context-dependent. Accordingly, its development should be in conjunction with firms' business strategies, internal resources and external contexts in order to maximise the benefits (Teece, 2007; Zahra et al., 2006).

It is crucial to identify the specific dynamic capabilities that sufficiently explain the heterogeneity in firm performance when firms are rapidly internationalising. Rooted in internationalisation theories and dynamic capability theories, this study identified absorptive capacity as an important interactive factor that shapes the direct relationship between internationalisation speed and performance by playing a mediating role.

The modelling results confirmed the proposed mediating effect of absorptive capacity. The empirical findings show that the influence of internationalisation speed on firm performance is fully mediated by absorptive capacity, so that the direct internationalisation speed-performance relationship disappears when absorptive capacity is present. This implies that the generation of performance benefits from rapid internationalisation is unlikely to occur without absorptive capacity.

The empirical finding and theoretical argument about the mediating effect of absorptive capacity on the relationship between internationalisation speed and performance represent one of the most important contributions of this study. This finding contributes to the literature on internationalisation and dynamic capability in several ways. First, the full mediation effect of absorptive capacity on the speed-performance relationship leads to the identification of a valuable and essential dynamic capability that can explain the heterogeneity in performance even when firms follow a similar strategy in terms of their internationalisation speed. Despite prior research having long conceptualised absorptive capacity as a valuable type of dynamic capability (Ben-Oz & Greve, 2015; Cohen & Levinthal, 1990), its application in the internationalisation context is quite limited as most research attention has examined its contribution to innovation and alliance performance (Limaj & Bernroider, 2017; Wales et al., 2013). This study identifies absorptive capacity as a distinctive and essential dynamic capability determining the performance outcomes of rapid internationalisation. In the context of internationalisation characterised by a high level of uncertainty, absorptive capacity enables firms to manage the risks associated with rapid international expansion, and to capitalize on external knowledge when pursuing international opportunities (Rodríguez-Serrano & Martín-Armario, 2017).

The finding provides empirical support for the core assumption of the dynamic capability theory that superior performance in fast-moving global environments is co-

determined by dynamic capabilities and their interaction with business strategies (Teece, 2014a). Compared to static resources, dynamic capabilities are more crucial for firms to address challenges in rapidly changing environments (Teece, 2014a). The mere accumulation of market knowledge in the context of internationalisation cannot guarantee superior performance. It is necessary to develop dynamic absorption capability to utilize that knowledge.

Second, the finding regarding mediating effects provides an additional and novel causal mechanism to explain the internationalisation-performance relationship. Based on internationalisation process models, prior research argues that organisational learning determines a firm's speed of international expansion, which subsequently affects firm performance (Acedo & Jones, 2007; Casillas & Moreno-Menéndez, 2014). However, the internationalisation process models do not address whether and how accelerated internationalisation influences learning capability, even though international activities provide the crucial input to high-level learning routines (Ibeh & Kasem, 2014). The finding indicates that increasing international expansion boosts learning activities, which contributes to learning abilities, especially those that enable firms to capitalize on external knowledge, and ultimately benefits firm performance.

This finding highlights the recursive relationship between organisational learning and internationalisation speed, thus providing a new perspective to supplement the interpretation of learning and its relation to international expansion in the existing internationalisation literature. While internationalisation activities are driven by firms' learning capability, internationalisation activities in turn determine how learning-related dynamic capability is going to be developed and modified in the internationalisation process (Anand et al., 2016).

Third, the finding on the full mediation provides empirical evidence for how firms can use routinization as the mechanism to resolve the issue of high demand for learning caused by rapid internationalisation, given that absorptive capacity consists of a bundle of organisational learning routines. Routinization not only helps firms store the absorbed knowledge, but also simplifies the tasks of recurrent information processing (Laureiro-Martinez, 2014). Moreover, formation of learning routines facilitates identification of the ambiguous cause-effect relationships that surround complex

international activities and govern firms' performance outcomes (Heimeriks, Schijven, & Gates, 2012; Zollo & Winter, 2002). Thus, by committing resources to routinizing learning activities, the firm can process large amounts of information with little time and effort (Laureiro-Martinez, 2014), which provides temporal advantages for learning in global markets.

Given the manifest importance of absorptive capacity in the rapid internationalisation process, firms that pursue competitive advantages through rapid internationalisation should commit their resources to its development. However, it is worth noticing that routinization gives rise to inertial forces that hamper performance outcomes (Pentland et al., 2012). As evident in the hypothesis testing results, the mediation is curvilinear: meaning the mediating effect of absorptive capacity on the direct link between internationalisation speed and firm performance varies with the value of internationalisation speed. This will be further discussed when examining the influence of increasing diversity of international activities and the length of prior international experience on absorptive capacity in the next subsection.

### **6.2.3 Influence of post-entry internationalisation speed on absorptive capacity**

The interacting role of absorptive capacity with rapid internationalisation gives rise to a number of important questions, such as how internationalisation strategy in terms of speed influences firm-level absorptive capacity. Prior research has overwhelmingly considered internationalisation speed as a dependent variable (Hilmersson & Johanson, 2016), investigating how firm capabilities, learning abilities in particular, speed up international expansion. As a result, little research has examined how an accelerated internationalisation influences dynamic learning capabilities (Felin and Foss, 2011; Clarke *et al.*, 2013). Motivated by the research gaps and rooted in the action-based approach to dynamic capability, this study hypothesized that the speed at which the firm diversified foreign market exposure and applied entry modes has an inverted U-shape relationship with absorptive capacity.

The modelling results confirmed the proposed hypothesis, demonstrating a curvilinear relationship regarding influence from internationalisation speed on absorptive capacity. This finding suggests that an increase in the number of foreign markets and range of



entry modes contributes to absorptive capacity, given that the variable of internationalisation speed in this study denotes the increase in the number of foreign markets and entry modes per unit of time. Prior research argues that foreign market entry and application of entry modes entail the accumulation of location- and type-specific knowledge (Buckley et al., 2014). Following this line of research, an increase in foreign market exposure requires the application of location-specific knowledge previously acquired from markets that are similar in terms of institutional contexts. Similarly, an increase in the range of adopted entry modes necessitates the transfer of type-specific knowledge to different markets. As a result, these processes of knowledge accumulation, transfer and application related to accelerated international expansion would contribute to absorptive capacity.

Moreover, the modelling results have demonstrated the complex nature of the influence of internationalisation speed on absorptive capacity, as the positive influence of internationalisation speed occurs only at certain speeds. Absorptive capacity is enhanced when the speed at which a firm diversifies foreign market exposure and applied entry modes is either at a low or moderate level. This finding highlights a balance between repetition and diversification as the key for absorptive capacity enhancement. Repetition of international activities is essential for retention of organisational learning capabilities (Anand et al., 2016), since repetition helps firms to identify the common traits among international activities and provides sufficient time to link actions that have been taken and performance outcomes that have been achieved (Castellaneta & Zollo, 2015).

However, repetition is not the only prerequisite for the development of learning capabilities. Without the addition of new information, the existing learning routines built upon past international activities may no longer facilitate the learning need, due to the rapid changes in customer demands and growing competition in global markets (Berends & Antonacopoulou, 2014). The stagnant routines of organisational learning become a source of inertia (Pentland et al., 2012), thereby hampering firms' adaptation. Thus, firms should not constantly repeat the same international activities. A moderate increase in the diversity of international activities provides firms with sufficient new knowledge to reflect and compare the performance outcomes (Zollo & Winter, 2002), which is necessary for the improvement of absorptive capacity (Ben-Oz & Greve, 2015).

Through comparing and reflecting the performance outcomes, firms are able to assess whether existing organisational learning routines suit the current need for information processing in the context of rapid internationalisation.

Meanwhile, too fast an increase of the speed in either diversifying foreign market exposure or applying multiple entry modes will upset the balance between repetition and diversification, leading to a plateau or decay in absorptive capacity. Extant literature has provided a rationale for a decrease of marginal returns from rapid diversification of international activities for high-level learning capabilities. Rapid diversification of foreign market exposure and application of multiple entry modes could complicate and obscure the causal linkages between actions and performance outcomes (Zollo & Winter, 2002), which challenges the efficiency and accuracy of organisational learning (Jiang et al., 2014).

As one of the most important findings, the result regarding an inverted U-shape relationship between internationalisation speed and absorptive capacity provides a significant contribution to the literature on dynamic capability and absorptive capacity in particular. First, this finding has filled a void in the literature regarding how firms improve their absorptive capacity through internationalisation. Repetition is an essential prerequisite for capability development. Diversification can be either beneficial or detrimental to this process, depending on its congruence with repetition. This finding supplements the suggestion by Chetty et al. (2014) that diverse business activities provide more benefits to firm's organisational learning than repetitive activities by highlighting the interaction between repetition and diversification and its implication for absorptive capacity. Repetition acts as a prerequisite condition for beneficial effects of diversification on learning.

Second, the inverted U-shape relationship indicates that there is a limit to the maximum level of benefits from rapid internationalisation for absorptive capacity. This finding resonates with the claim of Rockart and Dutt (2015) that the qualitative differences in challenges and opportunities associated with various organisational activities are likely to affect the maximum potential to which a firm can develop its capabilities. Following this logic, organisational activities in terms of foreign market entry and adoption of entry modes would present potential for the enhancement of dynamic learning

capability. The speed at which to diversify international activities would affect the temporal advantages in reaching this potential. This provides practical insights to managers, so that they can capitalize on a relatively bold international orientation to favour dynamic learning abilities, while simultaneously avoiding the inertia it breeds.

Similarly, prior research on organisational routines has found that action-driven routinization would eventually create competence traps, which leads firms to endlessly refine existing organisational routines (Mulotte, 2014). The intensified complexity of cause-effect relationships and time pressure imposed by rapid diversification of international activities consume firms' valuable attention, which may increase firms' reliance on familiar knowledge sources despite the increasing amount of information externally available to them (Piezunka & Dahlander, 2015). Thus, the benefits of diversification of international activities for learning capability will plateau.

Lastly, the focus on action-based routinization represents a step toward by clarifying the concept of dynamic capability that has been criticized for being abstract and vague (Danneels, 2008). The actions taken to explore foreign markets and select entry modes act as an enabling force to improve organisational routines and capabilities (Heimeriks et al., 2012; Pentland et al., 2012).

#### **6.2.4 Moderating effect of prior international experience on the relationship between post-entry internationalisation speed and absorptive capacity**

Given the path dependence of learning, this study also proposes that prior international experience moderates the direct relationship between internationalisation speed and absorptive capacity. The modelling testing results confirmed this hypothesis. As plotted in **Figure 5-5**, the curved line representing the relationship between internationalisation speed and absorptive capacity becomes steeper as prior international experience increases. The boosting effect of learning advantages of newness and the diminishing effect of time compression diseconomies with respect to learning capability are more profound for internationally experienced firms than for internationally inexperienced firms.

More interestingly, the maximum level of the firm's absorptive capacity would change if the firm possesses international experience at different levels, indicating a complex influence of prior international experience on the realisation of learning advantages of newness. Specifically, as demonstrated in **Figure 5-5**, when prior international experience increases from a low level to a moderate level, the speed-absorptive capacity curve moves upwards and forwards, resulting in an up-moving vertex point of the curve that represents a maximum level of absorptive capacity. It suggests that firms with a moderate level of international experience enjoy more advantages with regard to the development of absorptive capacity in comparison with firms with a low level of international experience.

Internationally inexperienced firms may enjoy the advantages with respect to development of learning capability at the very act of early and rapid foreign entry. However, how much these advantages can be realized is open for discussion. With little prior experience, the knowledge gaps perceived in foreign markets will be significantly wide. Firms need to commit a significant amount of cognitive effort and resources to identifying and absorbing valuable external knowledge (Zollo & Winter, 2002), thus suppressing the efficiency of absorptive capacity improvement. The possession of a moderate level of international experience, on the one hand, assists firms in their recognition and valuation of new external knowledge (Patterson & Ambrosini, 2015). On the other hand, prior international experience increases firms' potential to combine external knowledge with internally stored knowledge, thus leading to the creation of new knowledge (Zhou & Guillén, 2015). Accordingly, compared to inexperienced firms, moderately experienced firms are more likely to maximise the benefits of internationalisation to absorptive capacity. At the same time, the efficient learning process helps firms obtain a temporally advantageous position to integrate and deploy organisational learning routines underlying absorptive capacity.

However, after a certain point, the positive moderating influence of prior international experience on the direct speed-absorptive capacity link becomes weak. As indicated in **Figure 5-5**, the speed-absorptive capacity curve moves downwards, resulting in a down-moving vertex point of the curve that represents a lower level of absorptive capacity in comparison to that for a moderately experienced firm. That is because highly experienced internationalising firms may have already built up learning routines

that are conducive to internationalisation. The main learning has already taken place and only marginal additional knowledge has been absorbed to modify existing learning routines (Hilmersson et al., 2017). Therefore, the improvement of absorptive capacity for highly experienced internationalising firms is less efficient and effective in comparison to that for moderately experienced firms.

In addition to the influence on the realization of the learning advantages of newness, prior international experience amplifies the diminishing effect of time compression diseconomies caused by a significant increase in internationalisation speed. As indicated in **Figure 5-5**, the down-slope at the right side of the speed-absorptive capacity curve becomes steeper at a high level of prior international experience. This is because prior experience advances the arrival of the time compression diseconomies and amplifies their diminishing effect. While rapid internationalisation diversifies information sources, it also creates time pressure and intensifies the causal ambiguity. Previous research has found that firms with successful experience have a strong tendency to repeat actions associated with the highest performance in the past (Anand et al., 2016). The perceived usefulness of existing learning routines built upon past successful international activities discourages further commitment to deliberate learning and generation of novel ideas (Heimeriks, 2010), which escalates the deterioration of absorptive capacity in the face of rapid changes in global markets (Delios, 2011).

The finding about the moderating effect of prior international experience on the curvilinear relationship between internationalisation speed and absorptive capacity represents another of the most important contributions of this study. First, this finding contributes to a re-conceptualisation of learning advantages of newness by reconciling conflicts with the concept of path-dependent learning, which is promoted by traditional internationalisation models and organisational learning theories. Previous studies argue that the learning advantages of newness decline as more experience is accumulated (Autio et al., 2000; Wu & Voss, 2015). This study reveals a more complex relationship. The changes in the position of the vertex point for the inverted U-shape curve, which represents the direct relationship between internationalisation speed and absorptive capacity, indicate the boundary conditions for the learning advantages of newness. Prior international experience influences how much and how quickly the firm can benefit from rapid internationalisation with regard to absorptive capacity.

Prior experience does not always exert a negative influence on the realization of learning advantages of newness. This study finds that the possession of a moderate amount of prior international experience not only provides temporal advantages, but also maximises the potential contribution of rapid internationalisation to absorptive capacity. Internationally inexperienced firms can enjoy the learning advantages, although their capability build-up is less efficient in comparison to that of moderately experienced firms. For highly experienced internationalising firms, the learning advantages provided by rapid internationalisation are significantly undermined, since their learning about foreign markets and modes of operation may have already taken place. Thus, a high level of prior experience can reduce the need to absorb external knowledge.

Second, this finding extends the literature regarding absorptive capacity by revealing the detrimental influence of prior experience on absorptive capacity. It is clear that firms need prior experience in order to recognise and absorb external knowledge (Cohen & Levinthal, 1990; Zahra & George, 2002), but previous research does not address how prior experience affects the dynamics of absorptive capacity. This study conceptually proposed and empirically confirmed that prior experience can impose both positive and negative effects on absorptive capacity by moderating the curvilinear relationship between speed and absorptive capacity. On the one hand, the firm's possession of prior experience enhances its ability to absorb external knowledge. On the other hand, a high level of prior experience reduces the need to use external knowledge for problem solving. As a result, the level of prior experience decides how the firm evaluates the increasingly diverse external knowledge.

The limited positive effects of internationalisation speed and prior experience on absorptive capacity imply the necessity for considering other factors, such as managerial capabilities, to overcome the inertial forces that hamper the modification of existing learning routines (Felin et al., 2012; Heimeriks et al., 2012; Teece, 2014b). That is the focus of the next subsection.

### **6.2.5 Cognition-based approach to absorptive capacity: The role of managerial decision-making styles and market dynamism**

Despite the increasing call for incorporating the concept of managerial cognition into theoretical models of internationalisation, the question regarding whether and how managerial cognition affects firm-level processes of knowledge acquisition and utilization, as well as its impact on firm performance, is still unexplored (Maitland & Sammartino, 2015; Teece, 2014b). Decision-making in internationalisation always involves the use of both internal and external information. Managerial cognition, including decision-makers' preference for information processing and mental models, determines the scope of information seeking as well as how the decision-makers use relevant information to make decisions. Moreover, managerial cognition plays a critical role in appraising firm-level capability and knowledge deficits, external environment status and appropriate international responses (Maitland & Sammartino, 2015). In responding to the call, this study has made an attempt to build a link between managerial cognition and the development of absorptive capacity, thus providing an opportunity to fill the long-existing gap regarding the role of managerial cognition in internationalisation models.

In accordance with the psychology literature, this study applies two cognitive processes to distinguish decision-making process in internationalisation: rational versus heuristic decision-making. Rational decision-making relies on comprehensive information to develop an understanding of what actions should be undertaken, while heuristics allow the decision-makers to ignore some of the information. Thus, this study assumes that rational decision-making is more influential than heuristic decision-making with respect to absorptive capacity. Moreover, given the strong influence of information availability on selection of decision-making styles, this study also examines the influence of market dynamism on the relationship between decision-making style and absorptive capacity.

The results indicate that rational decision-making positively affects absorptive capacity, while heuristic decision-making has no significant direct influence. In comparison to heuristic decision-making, a more rational process of decision-making requires greater explicitness and diversity of information in order to compare and evaluate available alternatives (Child & Hsieh, 2014). Thus, a reliance on rational analysis is more likely

to stimulate the need for systematic gathering of information, which then fosters intentional creation, integration and reconfiguration of organisational learning routines (Eggers & Kaplan, 2013).

Additionally, the psychology literature suggests that a high level of cognitive control over attention and cognitive processes is required to perform activities such as seeking and keeping different pieces of information, identifying causal relations among seemingly disconnected issues, developing plans for hypothetical futures and anticipating associated consequences (Posner & Snyder, 2004). It has been found that a high level of cognitive control is closely linked to the propensity to routinize organisational activities (Laureiro-Martinez, 2014). Mindfulness to cues from both internal and external environments enhances managerial attention to and awareness of current experiences or present reality (Laureiro-Martinez, 2014), which provides clues for decision-makers as to how to develop or modify organisational routines (Salvato, 2009). Thus, rational decision-makers, who execute a high level of cognitive control over external and internal information, are more likely to commit resources to routinizing learning activities. This provides further theoretical support for the positive link between rational decision-making and absorptive capacity.

Apart from the direct influence of decision-making styles on absorptive capacity, the results of the present study have also confirmed the hypothesis that market dynamism negatively moderates the relationship between rational decision-making and absorptive capacity. As indicated in **Figure 5-7**, in less dynamic markets, an increase of rationality in decision-making significantly improves absorptive capacity. However, in highly dynamic markets, the reliance on rational decision-making does not bring much modification to high-level learning routines in comparison to that in less dynamic markets. In markets with a low level of dynamism, changes in customer preferences, regulations and competitors' behaviour are less frequent and more predictable. With the availability of information and time, managers would be more likely to accurately link actions and performance outcomes (Ben-Oz & Greve, 2015), thereby benefiting the selection and enactment of routinized learning behaviour (Raymond, Bergeron, Croteau, & St-Pierre, 2015). Moreover, the psychology literature suggests that individuals usually display cognitive bias in their attention to information and also in their decisions based on that information (van Knippenberg et al., 2015). Systematic information



seeking helps to direct managerial attention to more diverse knowledge sources, thus alleviating potential cognitive bias in the processes of information scanning, collecting, storing and analysing.

In contrast, rapid changes in markets create uncertainty, which may provoke managerial awareness and efforts to collect more information. It helps in explaining why absorptive capacity in highly dynamic markets is stronger in comparison to that in less dynamic markets. However, the rapid changes in markets also denote the diminishing value of newly acquired information. Thus, intensive information seeking and deliberate information scrutiny in highly dynamic markets do not substantially improve absorptive capacity.

With regard to the direct relationship between heuristic decision-making and absorptive capacity, the results of hypotheses testing highlight its contingent nature. As plotted in **Figure 5-8**, two lines representing the direct relationships in low and high market dynamism respectively grow apart, as the reliance on heuristics in decision-making increases. Specifically, in a highly dynamic market, heuristic decision-making contributes to absorptive capacity. In a less dynamic market, heuristic decision-making decreases absorptive capacity. Heuristics are cumulatively developed from prior experience (Gigerenzer & Gaissmaier, 2011). They can be either beneficial or detrimental to the firm's learning, depending on the nature of the external environment. In a highly dynamic market, there are rapid or even discontinuous changes in customers' preferences and/or competitors' behaviour (Schilke, 2014). In such an environment, heuristics filter out newly emergent information that is completely incompatible with existing knowledge, and direct firms' attention to new yet relevant information. The relatively close distance between newly acquired information and firms' existing knowledge may contribute to absorptive capacity. In less dynamic markets, the changes in customer preference and modes of competition are infrequent. Heuristics may guide firm attention to familiar information sources and domains, which hampers the adaptation of organisational routines.

The findings about the different influences of two decision-making styles on absorptive capacity and their contingency on market dynamism make a significant contribution to the literature on internationalisation and dynamic capability. First, the findings

complement existing internationalisation models by revealing how managerial cognition and its rationality in particular contribute to firm-level learning capability. Despite being grounded in the assumption of decision-making as fully rational, traditional internationalisation models are largely silent on the role of managerial rationality in shaping firm-level information collection and analysis processes (Maitland & Sammartino, 2015). Prior international business studies overwhelmingly focused on individuals' bounded rationality and highlighted its constraints on managerial interpretation of international opportunities. With the development of international entrepreneurship, reliance on rational analysis in decision-making is further downplayed. This study highlights that rational decision-making, which is designed to increase knowledge about the status quo and predict prospective developments, benefits high-level learning capability.

Second, the findings contribute to the literature on dynamic capability, especially prior studies that theorise managerial cognition as the micro-foundation of dynamic capability (Helfat & Peteraf, 2015). The present study empirically confirmed that both types of decision-making styles could impose influence on firm-level dynamic capability. As evident in the modelling results, managerial cognition is identified as a valid internal factor that is able to account for heterogeneity in firm capability. To take it further, this study reveals that the strength and direction of influences from managerial cognition on firm capability are contingent on the characteristics of the external environment. In less dynamic markets where changes are predictable and information is accessible, rational decision-making overrides heuristic decision-making with respect to dynamic learning capability. In highly dynamic markets, both rationality and heuristics can exert a positive influence on absorptive capacity. However, the positive influence is suppressed as dynamism increases in foreign markets. Given the inherent weakness of the influencing power for both rational and heuristic decision-making as well as the contingency of their influence on the external environment, future research should explore the combined influence of managerial cognitive styles on development of organisational capabilities.

Given the confirmed influence of managerial cognition on capability development, it is reasonable to assume that managerial cognition may also influence performance. That is the focus of the next section.

### **6.2.6 Performance implications of managerial decision-making styles and their contingency on market dynamism**

Given the cognitive underpinnings of international opportunity identification and exploration, managerial cognition has been considered a crucial factor to explain the heterogeneity in performance-related outcomes (Gary & Wood, 2011; Grégoire et al., 2011; Kaplan, 2011; Surroca et al., 2016). Internationalisation process models have been built upon the assumption that decision-making is fully rational. However, based on the same internationalisation models, prior studies have provided divergent or even conflicting views on the performance implications of rational decision-making. Some studies advocated for the use of comprehensive information seeking and detailed analysis of alternatives to ensure superior performance, especially in highly dynamic environments (Goll & Rasheed, 1997; Priem et al., 1995). In contrast, other studies applied the concept of bounded rationality and examined the detrimental effect of rational decision-making on performance (Maitland & Sammartino, 2015). Moreover, with the increasing attention to the benefits of heuristics in decision-making in the psychology literature (Gigerenzer & Gaissmaier, 2011), studies have started to explore the application of heuristic decision-making in the context of internationalisation, and associated performance outcomes (Loock & Hinnen, 2015). However, it is still unknown which types of decision-making style would generate better firm performance in a real business setting, which is characterised by incomplete information and complex cause-effect relationships. Inspired by these research gaps, this study examined the influence of these two managerial decision-making styles on firm performance and the contingency of their influence on market dynamism.

The results of the first path model (without the addition of market dynamism) demonstrate that rational decision-making has no significant influence on firm performance. This result conflicts with findings drawn from recent studies in psychology, which found a positive relationship between rational analysis and performance. These previous studies were either conducted in laboratory settings using simulation-based approaches (Laureiro-Martinez, 2014; Levine et al., 2017) or targeted university students who were in the new venture creation stage (Laskovaia, Shirokova, & Morris, 2017; Smolka et al., 2018). The laboratory research setting is controversial, since it represents abstraction without the full richness and complexity of information as

observed in real business environments. An less uncertain environment would enable decision-makers to conduct rational analysis with a high level of accuracy, and is thereby likely to lead to improved performance (Welter & Kim, 2018). In addition, the prior studies using university student samples and focusing on their venture creation stage also have their limitations, resulting in a reduction of generalisability for their findings. Student entrepreneurs are regarded as being better educated and having good cognitive ability but limited experience with venture creation; these features are more likely to induce student entrepreneurs to collect comprehensive information and use causal principles to make decisions (Laskovaia et al., 2017).

While conflicting with prior studies in the psychology literature, the result from the present study highlights that the performance implications of rational decision-making should not be investigated in isolation. Instead, it should be considered by including all contextualising factors. In order to examine the context dependence of rational decision-making with respect to firm performance, market dynamism was added to the third path model. The hypothesis testing results point out that the performance implications of rational decision-making are contingent on market dynamism. As plotted in **Figure 5-6**, in highly dynamic markets, an increase of rationality in decision-making significantly degrades firm performance. By contrast, in markets with a low level of dynamism, the influence of rational decision-making on firm performance is basically neutral.

Deliberate rational analysis does not automatically provide a correct answer for performance improvement. The accuracy of rational analysis can be improved to a certain point with increased information, computation and time (Gigerenzer & Gaissmaier, 2011). In highly dynamic markets, information about future opportunities is fragmented or even inaccurate. Thus, an overwhelming reliance on comprehensive scanning and deliberate analysis of alternatives does not allow firms to make accurate and quick responses to opportunities in rapidly changing environments, thereby resulting in failure to optimise the chosen opportunities. In less dynamic markets, the accuracy of rational analysis can be improved given the increasing amount of available information and time. However, the improved accuracy may still be insufficient to make correct predictions about prospective developments. As evident in studies based on simulation models, rational decision-making benefits performance when the accuracy of prediction reaches over 75% (Welter & Kim, 2018), which is rather challenging to

achieve in real business environments filled with incomplete and inaccurate information. Moreover, the benefits gained from rational analysis may not compensate for the resources committed to intensive information scanning and collection. Thus, rational decision-making is likely to decrease performance in real business environments filled with uncertainty, contrasting with the findings of studies in laboratory settings.

In addition to rational decision-making, the performance implications of heuristic decision-making were also tested. The results suggest a positive relationship between heuristic decision-making and performance, irrespective of changes in market dynamism. This implies that the performance implications of heuristic decision-making are not as highly context-specific as they are for rational decision-making. Developed from prior experience, heuristics provide clues about what kind of information needs to be searched and collected in a specific context of business decisions, and when to stop searching for more information. Moreover, heuristics allow decision-makers to ignore part of the information, thus reducing the cost associated with information acquisition (Gigerenzer & Gaissmaier, 2011). Decision-making always involves the use of information. However, information used in decision-making can vary greatly in terms of amount and scope. As evident in prior studies, decision-makers do not need comprehensive information about the entire business environment (Gary & Wood, 2011). By providing a simplified knowledge structure about how the business environment works, heuristics are sufficient to achieve adequate performance. Compared to rational decision-making, heuristic decision-making functions better in real business contexts in terms of performance-related outcomes.

The results regarding the different performance implications of two decision-making styles and their contingency on market dynamism have important implications for the literature on strategic decision-making in internationalisation. First, by specifying the boundary conditions for the effectiveness of rational analysis, the findings reconcile the conflicting views about the performance implications of rational decision-making in the field of international business. In highly dynamic markets, rational decision-making significantly degrades performance. In stable markets, the influence of rational decision-making on performance is basically neutral.

Second, this study contributes to the entrepreneurship literature regarding decision-making by comparing the effectiveness of heuristic decision-making relative to rational decision-making in highly dynamic contexts. The entrepreneurship literature rejects the idea of using rational analysis in decision-making and embraces the application of combined heuristics in decision-making (Welter & Kim, 2018). Instead of relying on deliberate planning and control, entrepreneurs are more likely to follow a more improvisational approach to pursuing international opportunities (Brinckmann et al., 2010; Fisher, 2012). However, prior research has not examined the effectiveness of using heuristics to make decisions in the real business environments that are filled with uncertainty. The findings from the present study suggest that heuristic decision-making is more likely to generate positive performance implications, in comparison to rational decision-making, especially in highly dynamic environments, as heuristic decision-making is found to be positively linked to performance, irrespective of increases in market dynamism.

Given the distinct implications to organisational outcomes, managers should reduce their reliance on rational analysis and increase the use of heuristics in their decision-making, especially when the dynamism in foreign markets intensifies. However, it is not necessary to disregard the application of rational analysis in business decision-making. Future research may investigate factors that improve the accuracy of prediction using rational analysis.

Third, in conjunction with the findings discussed in the last section, the present study contributes to the understanding of the role played by managerial cognition in internationalisation by highlighting the divergent implications of different types of decision-making for firm-level capability and performance. Rational decision-making is superior to heuristic decision-making in terms of absorptive capacity development, but inferior in terms of performance. These findings suggest that differences in managerial decision-making are a valid source of heterogeneity in firm-level dynamic capability and performance.

## **Chapter 7 - Conclusions and Implications**

### **7.1 Introduction**

This chapter concludes the present study by summarising the findings and highlighting its theoretical and practical contributions. The limitations of this study and directions for future research are also discussed. More specifically, Section 7.2 reviews the research objectives and findings, followed by a discussion of the contributions of this study to the relevant literature and practices in Section 7.3. Section 7.4 highlights the limitations of this study associated with research methodology and findings. Directions for future research are provided in Section 7.5.

### **7.2 Summary of Findings**

Motivated by fragmented research on the temporality of internationalisation coupled with the neglect of the role of managerial cognition in internationalisation models, the present study aimed to identify specific type of firm-level dynamic capability that accounts for the heterogeneity in performance implications of post-entry internationalisation speed, and to investigate the influence of firm- and individual-level factors on the dynamic capability by taking a micro perspective.

Consistent with recent research findings in relation to the temporality of internationalisation, the present study has confirmed that rapid internationalisation is able to contribute to performance improvement, but the speed-performance linkage involves a rather complex relationship. First, rapid internationalisation can improve performance only to a certain point. After that point, performance starts to decline. More importantly, as demonstrated by the empirical findings of this study, dynamic capabilities in general and absorptive capacity in particular play a highly important interactive role in determining the performance implications of post-entry internationalisation speed. Absorptive capacity is an enabler of organisational learning from the external environment. Actions taken by the firm to diversify geographic scope and range of entry modes in its pursuit of international opportunities lay the foundations for post-entry performance via contributing to absorptive capacity. The temporality of

internationalisation including internationalisation speed determines the curvilinear nature of the trajectory over which absorptive capacity is developed. Meanwhile, prior international experience determines the degree of downward curvilinearity.

Motivated to address the research gap regarding the neglect of the role of managerial cognition in existing internationalisation models, this study has found that managerial cognition, especially its rationality component, contributes to firm-level absorptive capacity. However, environmental dynamism in foreign markets can suppress the contribution of rational decision-making to absorptive capability. Firms are more likely to respond to external stimulus when operating in a highly dynamic environment. Moreover, this study has surprisingly found that heuristic decision-making results in a deterioration of absorptive capacity when the firm operates in a less dynamic market, but makes a slight contribution when the firm operates in a highly dynamic market. With regard to performance implications, the findings from the present study have established boundary conditions for the effectiveness of rational decision-making. In a highly dynamic market, an increase of rationality in decision-making significantly degrades firm performance. In contrast, the influence of rational decision-making on firm performance is basically neutral in stable markets. Compared to rational decision-making, heuristic decision-making is superior with respect to performance, especially in a highly dynamic environment.

### **7.3 Theoretical Contributions**

The present study contributes to the internationalisation literature in several significant ways. First, it reconciles the seeming inconsistency between traditional internationalisation models and the international entrepreneurship literature in terms of several key learning-related factors. According to traditional internationalisation models, organisational learning and experience accumulation acts as the driving force to shape internationalisation behaviour and performance (Hutzschenreuter & Matt, 2017; Johanson & Vahlne, 1977). Consistent with organisational learning theories, traditional internationalisation theories suggest that learning during the internationalisation process is path dependent. Internationalisation presents a hostile environment to learning, given the incomplete information and high level of ambiguity arising from different institutions (Mulotte, 2014). A firm's expansion into distant foreign markets depends on



the accumulation of relevant experience from its previous international activities. Therefore, internationalisation is a gradual and incremental process.

By contrast, the international entrepreneurship literature proposes the concept of learning advantages of newness and highlights the strategic importance of early and rapid internationalisation for survival, growth and development of competitive advantages. Early and rapid internationalising firms would have significant learning advantages over established firms, as the latter need to dismantle existing organisational learning routines (Autio et al., 2000). Thus, the concept of learning advantages of newness appears to be at odds with the core logic of learning in traditional internationalisation models and organisational learning theories, which stress the path-dependent nature of learning (Zahra et al., 2018). Moreover, despite its relevance to learning, the concept of learning advantages of newness does not address how much advantage can be realized with regard to the development of high-level organisational capabilities. Even less is known about the contingent conditions for realization of learning advantages.

The concept of time has remained implicit in internationalisation process models. Very few studies examined the influence of time on organisational learning. Time offers opportunities to reflect and draw out action-outcome linkages, which facilitates the subsequent learning process. Meanwhile, the international entrepreneurship literature has neglected the learning challenges that result from increasing diversity of international activities and cumulative benefits of prior experience. The diversity of international activities over a certain period of time and the stock of previous experience determine the efficiency and effectiveness of learning (Clarke et al., 2013). Thus, rooted in the action-based approach to dynamic capability development, this study incorporates the temporal dimensions of internationalisation into the existing internationalisation model with an attempt to reconcile the conflicting views about learning in the context of internationalisation.

This study finds that the speed of diversification of international activities exerts a curvilinear (inverted U-shape) influence on absorptive capacity. More importantly, the study finds that prior experience moderates this curvilinear relationship, but not in a linear way. The empirical results from the study suggest that when implementing

moderate internationalisation speed and possessing a certain level of prior international experience, the firm is able to obtain the most advantageous position to integrate and reconfigure organisational routines underlying absorptive capacity. On the other hand, after a certain point in the speed dimension, a firm with less prior experience would enjoy more learning advantages in comparison with one with more prior experience. Thus, realization of the learning advantages of newness in terms of dynamic capability development depends on the interactive effect between the speed of diversifying international activities and prior international experience. This finding is important, as it unpacks the black box of conceptualisation for the learning advantages of newness. Under this conceptualisation, learning advantages of newness in the international entrepreneurship literature would not inherently conflict with the path-dependent nature of organisational learning, which is emphasised by the traditional internationalisation models. The speed at which to diversify international activities and its interaction with prior international experience inform the flexibility of the learning advantages of newness.

Second, this study extends existing internationalisation theories by incorporating managerial cognition into the internationalisation model. It explicitly examines the influence of managerial cognition on performance and articulates the contingent conditions for the influence. Decision-making by owners or managers in internationalisation is a cognitive process. However, the role of managerial cognition is seriously underspecified in existing internationalisation models (Maitland & Sammartino, 2015). Existing research primarily examines the influence of managerial demographics on internationalisation, especially at the entry stage of internationalisation, but researchers have argued that managerial demographics are not an appropriate proxy for managerial cognition (Maitland & Sammartino, 2015). Managerial cognition, including mental models and preference for information processing, determines managers' interpretations of changes in markets and their responses to opportunities (Eggers & Kaplan, 2009; Herrmann & Nadkarni, 2014; Oyson & Whittaker, 2015). Thus, managerial cognition provides a crucial micro-foundation to explore the heterogeneity in firm-level internationalisation strategies and performance.

The psychology literature has distinguished rational and heuristics processing as two types of cognitive process (Evans, 2006). Existing internationalisation models have divergent views on the application of cognitive process and their performance implications. The traditional internationalisation models assume decision-making is fully rational. These models focus on profit maximisation through systematic information scanning, deliberate analysis of costs and risk, and in-depth planning and control. However, the incomplete information and high level of ambiguity in the context of internationalisation, as well as the bounded rationality of decision-makers, casts serious doubt on the efficacy of rational analysis (Elbanna & Child, 2007; Gigerenzer & Gaissmaier, 2011; Maitland & Sammartino, 2015). In contrast, the international entrepreneurship literature suggests that internationalisation decisions tend to be a response to unplanned developments, rather than a rational pursuit of pre-determined goals (Child & Hsieh, 2014; Evers & O'Gorman, 2011). This view supports the utilization of managers' prior international experience and available firm resources to explore international opportunities (Arentz et al., 2013). Thus, this view positions international entrepreneurship scholars as supporters of heuristic decision-making, given that heuristics are developed from prior experience (Gigerenzer & Gaissmaier, 2011).

Rooted in the cognition-based approach, this study proposes that both cognitive processes are applicable to decision-making in internationalisation, since both of them have performance implications. However, these two cognitive styles differ significantly in terms of their contingent conditions. The influence of rational decision-making on performance is positive only in markets characterised by low dynamism. In contrast, heuristic decision-making positively affects performance in both less and highly dynamic markets. On the other hand, it does not mean that heuristic decision-making is superior to rational decision-making. The appropriate application of cognitive process is contingent upon the characteristics of the knowledge environment.

Third, an integration of the action- and cognition-based approaches provides an opportunity to connect the study of learning in the context of internationalisation at the firm level with its study at the individual level. Both traditional internationalisation models and international entrepreneurship assume that learning is automatic and activated by external stimuli (Zollo & Winter, 2002). Firm-level learning capability is

an outcome of matching firm resources with perceived international opportunities. Existing internationalisation models overlook the role of managerial cognition in shaping the process of integration and deployment of organisational routines, which is conducive to the efficiency and effectiveness of learning (Bettis-Outland, 2012). The findings of the study suggest that managerial cognition as an internal stimulus, especially its rationality component, influences firm-level learning capability. More importantly, the characteristics of external environments also influence the process. The positive influence of rational decision-making on absorptive capacity becomes weaker as the dynamism of markets increases. Additionally, this study also finds a positive influence of heuristic decision-making on absorptive capacity. However, this positive influence only manifests in a highly dynamic market.

In addition to enriching internationalisation theories, this study also makes a significant contribution to the literature on dynamic capability. First, it provides insights into how superior performance in a rapidly changing environment can be explained by business strategies and the matching dynamic capabilities. Despite the increasing value of dynamic capability theory in the literature on early and rapid internationalisation, studies remain scarce regarding which dynamic capabilities are essential and how they affect the performance outcomes of early and rapid internationalisation (Cavusgil & Knight, 2015). Even less is known about how a firm's internationalisation speed strategy interacts with dynamic learning capabilities to influence performance. The findings of this study suggest that absorptive capacity, as a specific type of dynamic capability, plays a crucial role in creating the divergence in performance, even when firms implement similar speed strategies.

Second, the study contributes to the literature on the cognitive micro-foundations of dynamic capability by applying the cognition-based approach and integrating it with the action-based approach (Helfat & Peteraf, 2015). These two approaches have been developed essentially along parallel but separate paths (Eggers & Kaplan, 2013). This study provides an opportunity to compare the influence of external and internal stimuli on dynamic capabilities. The findings of the study suggest that while both the firm's speed strategy and managerial cognition influence the absorptive capacity, the speed strategy is more influential than managerial cognition. It implies that in a rapidly changing environment, such as internationalisation, the development and modification

of organisational high-level capabilities is more likely to be the outcome of a response to external stimuli, rather than to internal stimuli.

#### **7.4 Practical Implications**

The research findings from the study have implications for business practice. For businesses operating in a small domestic market, seeking international opportunities by exploring foreign markets is crucial for their survival and growth. With the reduction of trading barriers, advancements in communication technology and market homogenisation, internationalisation has been a strategic decision for firms to improve competitive advantages and performance. In the time-based global competition, managers are increasingly more concerned with how to rapidly expand into foreign markets in comparison to the questions of why and where to do so. The findings of this study have several implications for managerial practice.

First, the findings from this study suggest that rapid internationalisation is a worthwhile strategic choice for the firm to build competitive advantages and achieve superior performance in global markets, in spite of the daunting challenges associated with coordination and resource allocation. On the other hand, managers should moderate internationalisation speed by aligning the pacing strategy with firm-level resources and capabilities. More specifically, this study indicates that the appropriateness of a pacing strategy for international expansion depends on the firm's absorptive capacity and prior international experience. Strong absorptive capacity enables the firm to utilize learning opportunities provided by international exposure with efficiency and effectiveness, thus maximising its performance. Given the manifest importance of absorptive capacity for the rapid internationalisation process, when aiming to develop competitive advantages through rapid internationalisation, the firm should commit its resources to formulation and modification of organisational routines that are conducive to knowledge acquisition, assimilation, transformation and exploitation. International activities taken by firms to pursue international opportunities steer the direction, intensity and timing of resource commitment, and resources committed to dynamic capability development are generally irreversible. Thus, when formulating firm strategy for internationalisation speed, managers should maintain a balance between repetition and diversification of international activities in order to efficiently and effectively build dynamic capability.

For firms that already have a strong absorptive capacity, rapid internationalisation may provide only a limited opportunity to further improve it.

Second, the study confirms that prior international experience can efficiently alleviate the pressure for organisational learning caused by rapid internationalisation. Thus, for firms with limited prior experience, it would be rational to speed up their internationalisation process after operating in foreign markets for a certain amount of time. An understanding of the causal linkages in global markets would benefit the development of internationalisation capabilities and ultimately performance outcomes. The benefits of rapid internationalisation are more likely to materialise when firms have accrued a certain amount of prior experience. As more time passes after the firm's initial exposure to international markets, decision-makers should be aware of the detrimental effects of prior experience. Managers need to be aware that highly experienced internationalisers should not place too much reliance on prior international experience especially that accumulated a long time ago. The experience acquired from recent international activities is more applicable to decision-making.

Third, in light of the findings regarding the role of managerial cognition in internationalisation, this study provides practical insights into how key decision-makers should adjust their decision-making logic along with the transformative changes in the external context in order to better explore international opportunities and achieve superior performance. Data-driven decision-making is widely promoted in business practice, along with advancements in computation and data collection techniques. However, individuals are rationality-bounded, and the negative influence associated with bounded rationality on the accuracy of predictions would further be magnified in highly dynamic markets. Thus, managers should not overly embrace rational analysis logic when making decisions on the firm's internationalisation. The empirical findings from this study suggest that heuristic decision-making is superior with regard to performance enhancement in comparison to rational decision-making, especially in a highly dynamic environment. Managers may make better use of their experience-based expertise by following heuristic decision-making logic, and applying it to sense-making and decision-making in relation to their firm's internationalisation.

Although it may sound contradictory, key decision-makers are advised to remain committed to deliberate analysis and planning. When applying heuristics to make decisions, managers are likely to be affected by potential bias in information seeking. It is beneficial to consciously diversify the information sources, especially when changes in markets are less frequent. When changes in markets are less frequent and thus more predictable, it is a value-adding strategy to commit resources to scanning, collecting and scrutinizing information for decision-making. As demonstrated by the findings from this study, rational analysis would improve firm-level dynamic capabilities through providing managers with innovative ideas on exploiting internal resources and capabilities, in spite of its limited benefits for performance outcomes.

Fourth, this study also provides implications for policy makers. Given the importance of organisational learning and the potential benefits associated with rapid internationalisation, policy makers should provide appropriate infrastructure support for internationalising firms and strive to help firms reduce and resolve trade barriers. Moreover, seminars that focus on knowledge sharing should be facilitated. Exchange of knowledge on market conditions and various modes of foreign operations would be beneficial in order for firms to accelerate their internationalisation process and to provide alternative ways of expanding into foreign markets.

## **7.5 Limitations**

Similar to other empirical studies, this study is subject to some limitations. These limitations can be grouped into two categories: those associated with research methodology and those associated with findings.

### **7.5.1 Limitations associated with research methodology**

#### ***Participants***

Similar to other studies on SME internationalisation, the database for this study comprised SMEs that are successful or have at least managed to survive in global markets. SMEs that have withdrawn from international markets or have gone bankrupt were excluded from the empirical analysis. Therefore, this study may suffer from

“survivorship bias”. The detrimental effects of rapid internationalisation on performance could be more prominent or present more quickly in certain types of firms. Exclusion of firms that failed in their pursuit of international opportunities represents a limitation of the present study, and overcoming this limitation provides an opportunity for future research on the relationship between internationalisation speed and failure rate. In-depth qualitative case studies may be appropriate to investigate how rapid or too slow internationalisation undermines firm performance and leads to withdrawal from international markets or even firm bankruptcy.

### *Measures*

While internationalisation speed was treated as a latent variable that consists of two dimensions, the items used to measure these two dimensions were operationalised as a mean value of the two survey items. Therefore, this variable only captures the average internationalisation speed, rather than the change in internationalisation speed over time. Acceleration and deceleration can happen during internationalisation for different reasons. Capturing such changes requires observation at multiple points in time. Due to the time constraints of a PhD and the unavailability of data on SMEs, it was beyond the research ability of this study to develop a longitudinal design for an empirical examination of the changes in internationalisation speed. This represents a major limitation of the study. To overcome this limitation, future research can identify periods of acceleration and deceleration by measuring items for speed at multiple points of time, and compare their antecedents and performance outcomes.

An aggregated measure of internationalisation speed provides an opportunity to capture the complexity of internationalisation, especially the changes in both depth and breadth over time. However, this measure also makes it difficult or even impossible to separately examine the relative influence of increases in geographic expansion and the range of entry modes to absorptive capacity. Exposure to a foreign market or an entry mode entails a learning process, yet this learning process may not be homogenous as a consequence of differences in learning content. The knowledge acquired in market entry is more likely to be location-bounded, while that accumulated in application of entry modes tends to be type-specific. The transferability of knowledge determines the amount of cognitive effort and resources committed to organisational learning, thereby



affecting capability development. Future research could gain richer insights into absorptive capacity development by using a disaggregated measure for the variable of internationalisation speed, especially those accompanied by an indication of sales generated from individual markets and each type of adopted entry mode. A challenge for such research is how to statistically address the multicollinearity issue caused by increasing the number of quadratic terms in the empirical models.

Due to the reluctance of SMEs to provide their financial reports to the public, this study used self-reported and perceptual measures for performance outcomes. The use of perceptual performance measures might have introduced biases. Respondents with a high level of risk tolerance may overestimate their performance outcomes, while those with a high level of risk aversion may underestimate performance (Keil et al., 2000). Future research could use secondary/objective sources of financial information to triangulate survey-based data on performance.

### ***Research context***

The empirical setting for this study is SMEs from New Zealand and Australia. The rationale for combining SME samples drawn from New Zealand and Australia is the similarities shared between these two countries in terms of their political, legal and economic systems, cultural backgrounds, and their isolated geographic positions. Results are likely to generalise to similar countries. However, additional studies can validate findings in countries with different political, legal, and economic systems, and cultural backgrounds. Such studies can shed light on how institutional conditions in the home country affect the relationship between internationalisation and performance.

### **7.5.2 Limitations associated with findings**

This study uses cross-sectional data, which may restrict inference of causal relationships. For example, it is reasonable to suggest that a firm's past performance would affect its business strategy in terms of speed of international expansion. Despite the strong theoretical foundation developed in this study and use of structural equation modelling to address the endogeneity issue, the causal relationships inferred in this study could be further confirmed with a longitudinal research design.

The international business literature has noted that firms may learn experientially, vicariously, or by imitation (Pellegrino & McNaughton, 2017). The entry into a particular market or application of a specific entry mode can result from either learning from a firm's own experience or from imitating other business players in networks (De Clercq et al., 2012; Holm et al., 2015; Oehme & Bort, 2015). This study treated organisational learning broadly and did not distinguish types of learning. Future research could explore whether different types of learning have distinctive implications for absorptive capacity development.

Research on prior international experience has conceptualised the construct at several different levels, including individual, team, and firm levels. This study focused on prior international experience at a firm level, considering the core assumption of organisational actions as the key input into capability development and firm performance. Although it is a justified research focus, this study may not be able to capture the full scope of effects of prior international experience on absorptive capacity development and performance. Future research can collect finer-grained data to distinguish between firm international experience and managerial international experience, and explore how international experience at different levels interacts and subsequently affects organisational learning during internationalisation.

In addition, it should be noted that factors beyond prior international experience might influence a firm's absorptive capacity in the internationalisation process. Despite including important control variables, including technological dynamism, market dynamism, firm size, and firm age, future studies could investigate factors beyond those considered in this study. For example, a promising area for future research is how institutional characteristics in home and host countries influence firm absorptive capacity and performance.

This study examined the influence of rational and heuristic decision-making on absorptive capability and performance in a separate manner without looking at a hybrid approach that combines aspects of rational decision-making with elements of heuristic decision-making. Given their different implications and contingencies for capability development and performance, a hybrid cognitive style may outperform either rationality or heuristics, especially in a highly dynamic market. Future research could

benefit from examining integration of or interaction between rational and heuristic decision-making, and thus enrich the understanding of managerial cognition's effect on capability development and performance in a business environment filled with uncertainty and risk, such as internationalisation.

## **7.6 Directions for Future Research**

This study focuses on the temporal dimension of internationalisation and takes a micro perspective to examine the role of dynamic capability that is crucial to understanding the heterogeneity in internationalisation strategies and performance. In this sense, it offers several avenues for future research. First, given the insufficient distinction between temporal concepts in prior research, future research could examine how earliness of internationalisation affects post-entry speed. Examination of the relationship between these two temporal concepts would enrich the research community's understanding of the temporal patterns of internationalisation. Existing research has summarised the features of early internationalisers. Early internationalisers tend to demonstrate a strong propensity for innovation in technology and business models (Camisón & Villar-López, 2014), as they consider internationalisation an opportunity to boost their innovation capabilities and also a way to spread the costs associated with innovation (Anon Higon & Driffield, 2011). Moreover, early internationalisers are more dependent on and proactive in building and exploiting network relationships (Johanson & Vahlne, 2009; Schwens & Kabst, 2009). Being embedded in networks increases firms' international exposure by providing the opportunities to observe others in the field and imitate their international behaviour (Fernhaber & Li, 2013), which is cheaper and quicker than experiential learning (Casillas et al., 2015; Huber, 1991). Furthermore, compared to late internationalisers, early internationalisers are less likely to be constrained by rigid routines, thereby avoiding the costly unlearning process (Hilmersson et al., 2017). Early internationalisers' willingness to enter, and dependence on foreign markets, and their ability to explore international opportunities, may increase the possibility of pursuing a rapid internationalisation strategy after first market entry. More importantly, investigation of the relationship between earliness and post-entry internationalisation speed provides an opportunity to explore how firms combine their pacing strategies in pre- and post-entry stages and which combination leads to superior performance. However, whether and

how the two temporal dimensions of internationalisation affect each other is still an unexplored area, which could be examined in future research.

Second, given the distinctive features of rational and heuristic decision-making in terms of decision speed and accuracy, it would be worthwhile for future research to explore how an integration of rational and heuristic decision-making would affect internationalisation speed and performance implications. As manifested in international business studies, psychic and cultural distance between home and host countries influences the internationalisation process (Beugelsdijk et al., 2018; Håkanson, Ambos, Schuster, & Leicht-Deobald, 2016; Johanson & Vahlne, 1990; Ojala, 2015). Decision-makers tend to perceive these distances differently, due to the heterogeneity in their cognition (Håkanson & Ambos, 2010). A recent study finds that decision-makers' mental models and preference for information processing determine their familiarity with a list of potential foreign markets, which then affects the likelihood that a specific market is included for further consideration (Clark et al., 2018). Rational analysis entails effortful and deliberate calculations, which may potentially increase the accuracy of decision-making, but may also delay decisions (Parida, George, Lahti, & Wincent, 2016). In contrast, heuristics enable individuals to make decisions with a limited amount of information, which speeds up decision-making but may reduce the accuracy (Loock & Hinnen, 2015). The distinctive strengths of the two types of managerial cognition in terms of decision speed and accuracy provide the rationale to integrate these two types of cognitive processes in decision-making for internationalisation strategies, such as location choice, entry mode, timing, and speed of market entry.

Third, empirical evidence has suggested that individuals' tendency to use either rational or heuristic decision-making styles is stable across time and context (Marks, Hine, Blore, & Phillips, 2008; Pacini & Epstein, 1999). On the other hand, under certain situational or contextual conditions, such as the complexity of decision-making and past experience, the dominant decision-making style may be overridden by the other style (Phillips et al., 2016). Future research could explore how a combination of contextual factors, including decision types (operational versus strategic), internationalisation stage (new venture creation versus mature firms) and organisational characteristics (organisational structure versus resource endowment), would affect managers' shifts between decision-making approaches and how such shifts would affect performance

outcomes. A quantitative comparative analysis, such as fuzzy set analysis, could be a useful analytic method. Such research could provide decision-makers with useful insights regarding how to flexibly use and productively apply a specific type of cognitive style in decision-making depending on the characteristics of internal and external contexts.

Fourth, future research may explore how to develop and fine-tune heuristics related to internationalisation that enable firms to regulate internationalisation speed for achievement of superior performance. Rapid internationalisation requires quick knowledge development. Heuristics would provide clues about which type of information needs to be collected and when to stop seeking information (Gigerenzer & Gaissmaier, 2011), thereby facilitating effective responses to the challenges imposed by rapid internationalisation in terms of organisational learning. Moreover, heuristics could reduce uncertainty, thus helping to address the important challenges associated with internationalisation. A recent study has identified three constituent elements of heuristics that contribute to rapid internationalisation, namely organisational structure, location choice and market selection (Monaghan & Tippmann, 2018). Given the inherent bias, accuracy of heuristics has become an essential issue for its application in managerial cognition. However, the accuracy of heuristics should not be assessed in isolation (Loock & Hinnen, 2015). Future research may need to examine the adoption of heuristics and its influence in relation to the organisational, managerial and external contexts.

Fifth, this study has compared the relative influence of path-dependent organisational learning and managerial cognition on absorptive capacity. Due to data constraints, this study was unable to explore whether and how such influence may vary, depending on types and stages of entrepreneurial activities. When there are no exemplars to imitate, organisational routines are more likely to be developed and deployed by managers in accordance with their subjective interpretation of opportunities in an external environment (Autio et al., 2011). Thus, it seems that in the early stage of entrepreneurial activities, managerial cognition could be more influential on the firm's absorptive capability. In addition, given the decreasing benefits of prior experience on absorptive capacity, it would be worthwhile for future research to examine when and how managerial cognition could substitute or complement path-dependent organisational

learning in order to contribute to capability development and performance outcomes. Such research may provide insights into how to address the issue of increasing inertia associated with dynamic capability as more experience is accumulated.

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## Appendix A: Dropped measurement items in SEM analysis

<b>Constructs</b>	<b>Dropped Items</b>
<b>Absorptive capacity</b>	Acquisition 4 Assimilation 1 Transformation 4 Transformation 5 Exploitation 4
<b>Decision-making</b>	Rational decision-making output 5 Heuristic decision-making output 5
<b>Market dynamism</b>	Market dynamism 4 Market dynamism 5
<b>Technological dynamism</b>	Technological dynamism 3

## Appendix B: Invitation letter



### What makes SMEs successful in international markets?

I would like to invite you to participate in my study on the internationalisation of small and medium-sized enterprises. The study examines factors associated with the speed of internationalisation, expansion of geographic scope and increase of international involvement of small and medium-sized enterprises. This study is the focus of my PhD study in the School of Management at Massey University.

You have been chosen for this study because your firm is actively engaged in international markets. I believe your participation could help me gain important insights into the ingredients of firm success in international markets. Along with this letter, I have included a detailed information sheet about my study. Please read that before you decide whether to participate or not.

If you decide to participate, you will be asked to fill in an online questionnaire. This study is carefully administered to ensure that all response will be treated in strictest confidence and answers will be anonymised for analysis.

The questionnaire should take you no more than 20 minutes to complete. In return, I will **send you a tailored report of the results**, which offers you new insights into the development of international strategies and dynamic capabilities for firm success in rapidly changing international markets.

I appreciate that you are busy and so I thank you in advance for your commitment and your time. If you have any questions about this research, please feel free to contact Chao ZHAO (Serena) via [REDACTED] or [c.zhao@massey.ac.nz](mailto:c.zhao@massey.ac.nz)

I look forward to receiving your completed questionnaire as soon as possible.

Yours sincerely,

Chao ZHAO (Serena)  
PhD Researcher  
School of Management, Massey University

## Appendix C: Information sheet



### What makes SMEs successful in international markets?

#### Participant Information Sheet

Thank you for your interest in my study. This information sheet will help you better understand what my study is about, how you can contribute and what benefits you can get.

#### Why is this study important?

First, this study examines the configurations of international strategies and their impact on firm performance. Internationalisation consists of three related dimensions: speed, scope and intensity. The pursuit of fast internationalisation speed, expansive global reach and strong involvement in international markets requires considerable firm resources which SMEs often lack. Therefore, an important managerial challenge that SMEs face in their decision making is how to develop their strategies in speed under the conditions of resources constraints.

Second, this study examines the relationship between dynamic capabilities and environmental dynamism. Learning capabilities are essential dynamic capabilities for firm internationalisation. Firms' learning capabilities can reduce uncertainties and improve the firms' perception of their ability to compete in international markets. The effectiveness of the dynamic capabilities, however, depends on the external environment in which firms operate. Therefore, it is important to consider the impact of environmental dynamism when examining the effect of learning capabilities on firm internationalisation.

Lastly, this study examines whether managers' decision-making styles impact on firms' international strategies. Some managers depend on their feelings to make decisions, while others depend more on facts. There is no research to examine whether different thinking styles lead to different international strategies and firm performance.

#### What type of participants is being sought?

I am looking for firms in New Zealand and Australia that have generated income from international markets in the last five years. We expect owners, CEOs, exporting managers or anyone with good knowledge of the companies' international activities to fill out the questionnaire.

## **How can you contribute?**

If you decide to participate, you will be asked to fill in an online questionnaire. You will be asked questions about your firm's internationalisation process, the way your firm acquires and utilizes external knowledge, the way your firm builds and exploits business relationships and how you evaluate your firm's performance. Some demographic questions about you and your company will also be asked.

## **How does this study benefit you?**

I appreciate your participation in my study. In return, I would like to share the findings of my research with you by writing a customized report for you. The report will provide some new insights into the development of international strategies and dynamic capabilities for firm success in rapidly changing international markets.

This research is carefully administered to ensure that all response will be treated in strictest confidence and answers will be anonymised for analysis. Participants will be identified only by a unique study identification code and all data forms will use this code. Your contact details will only be used to request your participation in the survey. At the end of this research, the list of participants and their study identification codes will be disposed of.

If you have any questions about this research, please feel free to contact with the research team:

PhD Researcher: Chao ZHAO (Serena) via [REDACTED] or [c.zhao@massey.ac.nz](mailto:c.zhao@massey.ac.nz)

Supervisors: Dr Yuanfei Kang via [Y.Kang@massey.ac.nz](mailto:Y.Kang@massey.ac.nz)

Dr Jeffrey Kennedy via [J.C.Kennedy@massey.ac.nz](mailto:J.C.Kennedy@massey.ac.nz)

Dr Martina Battisti via [M.Battisti@massey.ac.nz](mailto:M.Battisti@massey.ac.nz)

Yours sincerely,

Chao ZHAO (Serena)  
PhD Researcher  
School of Management, Massey University

*The study is guided by Massey University's code of ethical conduct of research, it has been peer-reviewed and subsequently considered to be low risk.*

## Appendix D: Reminder letter



**MASSEY UNIVERSITY**  
**TE KUNENGA KI PŪREHUROA**  
**UNIVERSITY OF NEW ZEALAND**

### **What makes SMEs successful in international markets?**

You may recall receiving an invitation letter from me two weeks ago inviting you to take part in my study on the internationalisation of small and medium-sized enterprises in New Zealand and Australia. At the time of sending this letter, I have not yet received your response. If you have already filled out the questionnaire, thank you. Please accept my apologies for sending you this reminder. However, if you have not yet completed the questionnaire, I would be grateful if you could do so as soon as possible.

My study examines the internationalisation strategies pursued by New Zealand and Australian SMEs when taking time into account. The influence of dynamic capabilities and environmental dynamism on firms' internationalisation strategies and performance will also be examined. More information about my study could be found in the Information sheet.

You will be asked to fill out an online questionnaire, which should take you no more than 20 minutes to complete. This study is carefully administered to ensure that all response will be treated in strictest confidence and answers will be anonymised for analysis.

Since your firm is actively engaged in international markets, **I count on your responses to help me gain insights into the ingredients of firm success in international markets.**

I appreciate that you are busy and so I thank you in advance for your commitment and your time. If you have any questions about this research, please feel free to contact Chao ZHAO (Serena) via [REDACTED] or [c.zhao@massey.ac.nz](mailto:c.zhao@massey.ac.nz)

Yours sincerely,

Chao ZHAO (Serena)

PhD Researcher

School of Management, Massey University

## **Appendix E: Survey questionnaire**

### **SECTION A: About your company**

In this section, we are interested to learn more about the demographics of your company to help us better understand how these relate to the internationalisation process.

Q1. In which year was your company established?

---

Q2. How many people are currently working in your company?

---

Q3. In which industry, does your company primarily operate?

- Manufacturing
- Wholesale and retail trade
- Agriculture, forestry and fishing
- Professional, scientific and technical services
- Mining and quarrying
- Other. Please specify\_\_\_\_\_.

Q4. Which types of international business activities has your company been involved in?  
Please tick all that apply.

- Indirect exporting
- Direct exporting
- International outsourcing/contract production
- International licensing/franchising
- International joint venture
- Wholly owned foreign subsidiary
- Other. (Please specify)\_\_\_\_\_.

### **SECTION B: About the internationalisation process**

In this section, we are interested to learn more about the internationalisation process followed by your company.

Q5. In what year did your company receive the first order from foreign markets?

---

Q6. When did your company start to regularly receive orders from foreign markets?

\_\_\_\_\_

Q7. How many foreign countries has your company entered?

\_\_\_\_\_

Q8. In the *last five years*, how many new countries has your company entered?

Q9. In the *last five years*, how many people have been assigned to the work related to international business?

\_\_\_\_\_

Q10. In the *last five years*, how many new agreements have been signed with companies in foreign markets? Please write “0” if it is not applicable.

- Marketing contracts\_\_\_\_\_.
- Distribution franchising agreements\_\_\_\_\_.
- Joint production agreements\_\_\_\_\_.
- Joint ventures\_\_\_\_\_.
- Wholly owned subsidiaries\_\_\_\_\_.

Q11. In the *last five years*, what was the percentage of international sales to total sales?

- In 2015\_\_\_\_\_.
- In 2014\_\_\_\_\_.
- In 2013\_\_\_\_\_.
- In 2012\_\_\_\_\_.
- In 2011\_\_\_\_\_.

**SECTION C: About the owner, CEO or exporting manager**



The owner, CEO or exporting manager plays a crucial role in making business decisions. In this section, we are interested to learn more about their experience, social ties and decision-making styles to help us better understand how their personal attributes relate to the internationalisation process.

Q12. What is your current position in the company?

- Owner
- CEO
- Exporting manager
- Other, (Please specify)\_\_\_\_\_.

Q13. What is the highest level of education you have completed?

- No qualification
- Primary school
- High school
- Technical or trade certificate
- Certificate or diploma
- Undergraduate degree
- Postgraduate degree

Q14. Prior to founding the current company or taking the current position, did you have any experience of doing international business? If yes, for how many years?

- Yes. For \_\_\_\_\_ Years.
- No

Q15. You may have contact with the following people on a daily basis. Here I am more interested in your interaction with them for potential, strategically valuable information and resources. Please identify the number of individuals in each of following categories outside the company with whom you have interacted for the valuable information and resources:

- Customers\_\_\_\_\_.
- Suppliers\_\_\_\_\_.
- Partners\_\_\_\_\_.
- Competitors\_\_\_\_\_.
- Industrial agencies\_\_\_\_\_.
- Government and administrative agencies\_\_\_\_\_.
- Banks and other financial agencies\_\_\_\_\_.
- Other (Please specify)\_\_\_\_\_.

Q16. Please read the instructions carefully. The following pairs of statements describe alternative decision-making styles. For each pair of statements, please allocate ***a total of***

**4 points** between the alternatives to show how frequently you behave as described, using the following scoring key:

4= almost always  
1= occasionally

3= very often  
0= never or rarely

2= moderate often

---

**USE ONLY WHOLE NUMBERS, NOT FRACTIONS.**

**Example:**

A.   3   I prefer to make important decisions on my own.

B.   1   I prefer to rely on advice from experts when making important decisions.

---

1A. \_\_\_\_\_ I primarily rely on **logic** when making business decisions.

1B. \_\_\_\_\_ I primarily rely on **my feelings** when making business decisions.

---

2A. \_\_\_\_\_ I primarily weigh **quantitative** factors when making a business decision, such as budget needs, or future earnings.

2B. \_\_\_\_\_ I primarily weigh **qualitative** factors when making a business decision, such as my gut feelings or a sense that the decision is right for our company.

---

3A. \_\_\_\_\_ When making important business decisions, I pay close attention to when a number of people with well-justified expertise give me the same advice.

3B. \_\_\_\_\_ When making important business decisions, I pay close attention to when I experience a “knowing in my bones,” chills, tingling or other physical sensations.

---

4A. \_\_\_\_\_ The most important factor in making strategic changes in business (such as entering or exiting a foreign market or change product offering) is knowing that the change is based on objective, verifiable facts.

4B. \_\_\_\_\_ The most important factor in making strategic changes in business (such as entering or exiting a foreign market or change product offering) is feeling it is right for me.

---

- 
- 5A. \_\_\_\_\_ When my analysis and intuition are in conflict, I give precedence to my analytical reasoning.
- 5B. \_\_\_\_\_ When my analysis and intuition are in conflict, I give precedence to my intuitive insights.
- 

Q 17. The following pairs of words or phrases describe alternative decision making input. Please allocate a ***total of 4 points*** between the alternatives using only whole numbers (no fractions) with the following scoring key:

- 4= very strong influence on how I behave**      **3= strong influence on how I behave**  
**2= moderate influence on how I behave**      **1= some influence on how I behave**  
**0= little or no influence on how I behave**

**Example:** A.   0   Theory  
                   B.   4   Practice

1A. _____ Concepts	5A. _____ Facts
1B. _____ Instincts	5B. _____ Feelings
2A. _____ Rationality	6A. _____ Proof
2B. _____ Empathy	6B. _____ Heartfelt
3A. _____ Reason	7A. _____ Data
3B. _____ Felt Sense	7B. _____ Hunch
4A. _____ Logic	8A. _____ Deduction
4B. _____ Inner Knowing	8B. _____ Intuition

---

**SECTION D: About your company operation**

Knowledge about markets and relationships with other business players enable companies to better discover and exploit opportunities. In this section, we are interested to know how your company obtains external knowledge and builds business relationships in order to better understand the influence of learning and networking capabilities on the internationalisation process.

Q18. Please indicate how much you agree or disagree with the following statements in regard to the acquisition of external knowledge by your company:

	Strongly disagree		Neither agree nor disagree			Strongly agree	
	1	2	3	4	5	6	7
1. We have frequent interactions with others in the industry to acquire new knowledge related to product development.	1	2	3	4	5	6	7
2. Employees are engaged in cross-functional work.	1	2	3	4	5	6	7
3. We collect information through informal means (e.g. lunch or social gatherings with customers and suppliers, trade partners and other stakeholders).	1	2	3	4	5	6	7
4. We are hardly in touch with other companies and stakeholders in the industry.	1	2	3	4	5	6	7
5. We organize special meetings with customers, suppliers, or third parties to acquire new knowledge on process, product, logistics and distribution related innovation.	1	2	3	4	5	6	7
6. We regularly approach third parties outside the industry (such as professional organizations) to gather information.	1	2	3	4	5	6	7

Q19. Please indicate how much you agree or disagree with the following statements in regard to the assimilation of external knowledge in your company:

	Strongly disagree		Neither agree nor disagree			Strongly agree	
	1	2	3	4	5	6	7
1. We are slow to recognise shifts in our market (e.g. competition, regulation and	1	2	3	4	5	6	7

	demography).							
2.	We are able to quickly identify new opportunities to serve our customer needs.	1	2	3	4	5	6	7
3.	We quickly analyse and interpret changing market demands.	1	2	3	4	5	6	7

Q20. Please indicate how much you agree or disagree with the following statements in regard to the transformation of external knowledge in your company:

		Strongly disagree			Neither agree nor disagree		Strongly agree	
1.	We regularly consider the consequence of changing market demands in terms of new products and services.	1	2	3	4	5	6	7
2.	We record and store newly acquired knowledge for future reference.	1	2	3	4	5	6	7
3.	We quickly recognize the usefulness of new external knowledge to existing knowledge.	1	2	3	4	5	6	7
4.	We hardly share practical experience.	1	2	3	4	5	6	7
5.	We laboriously grasp the opportunities from new external knowledge.	1	2	3	4	5	6	7
6.	We periodically have meetings to discuss consequences of market trends and new product development.	1	2	3	4	5	6	7

Q21. Please indicate how much you agree or disagree with the following statements in regard to **the commercial exploitation of external knowledge by your company**:

		Strongly disagree			Neither agree nor disagree		Strongly agree	
1.	It is clearly known how activities within our company should be performed.	1	2	3	4	5	6	7
2.	We take customer complaints seriously.	1	2	3	4	5	6	7
3.	We constantly consider how to better exploit knowledge.	1	2	3	4	5	6	7

4. Our company has difficulty in implementing new products and services.	1	2	3	4	5	6	7
5. Our company has a clear division of roles and responsibilities.	1	2	3	4	5	6	7
6. Our employees have a common language regarding our products and services.	1	2	3	4	5	6	7

---

**SECTION E: About the external environment**

Changes in market and technology bring both opportunities and risks to companies. In this section, we are interested to learn more about the volatility and unpredictability of the environment in your industry in order to better understand how changes in external environment affect the internationalisation process.

Q22. Please indicate how much you agree or disagree with the following statements in regard to the technological change in your industry

	Strongly disagree		Neither agree nor disagree			Strongly agree	
1. In our kind of business, technological development is changing rapidly.	1	2	3	4	5	6	7
2. In our kind of business, technological changes provide big opportunities.	1	2	3	4	5	6	7
3. It is very difficult to forecast where the technologies in our markets will be in the next five years.	1	2	3	4	5	6	7
4. A large number of new products in our markets have been made possible through technological break-through.	1	2	3	4	5	6	7

---

Q23. Please indicate how much you agree or disagree with the following statements in regard to the market change in your industry:

	Strongly disagree		Neither agree nor disagree			Strongly agree	
1. Changes in customer preferences take place quite regularly;	1	2	3	4	5	6	7

2.	Our customers are very receptive to new product ideas;	1	2	3	4	5	6	7
3.	New customers tend to have product related needs that are different from those of our existing foreign customers;	1	2	3	4	5	6	7
4.	Competition in foreign markets is intense;	1	2	3	4	5	6	7
5.	Price competition is a hallmark in our export market;	1	2	3	4	5	6	7

### **SECTION E: About Performance**

In this section, we are more interested to know how you evaluate your company's international performance and overall performance in the last five years.

Q24. Please evaluate the international performance of your company over the *last five years* in terms of achieving the following goals:

		Strongly decreased		Neither decreased nor increased			Strongly increased	
1.	Sales volume;	1	2	3	4	5	6	7
2.	Sales growth;	1	2	3	4	5	6	7
3.	Market share;	1	2	3	4	5	6	7
4.	Return on investment;	1	2	3	4	5	6	7
5.	Return on asset;	1	2	3	4	5	6	7
6.	Reaching financial goals;	1	2	3	4	5	6	7

Q25. Please evaluate the overall performance of your company over the *last five years* in terms of achieving the following goals:

		Strongly decreased		Neither decreased nor increased			Strongly increased	
1.	Sales volume;	1	2	3	4	5	6	7
2.	Sales growth;	1	2	3	4	5	6	7
3.	Market share;	1	2	3	4	5	6	7

4.	Return on investment;	1	2	3	4	5	6	7
5.	Return on asset;	1	2	3	4	5	6	7
6.	Reaching financial goals;	1	2	3	4	5	6	7

---

Q26. In *the last three years*, what is the average annual value of total sales (NZD) that is generated by your company?

- ≤ \$500,000
- \$500,001 – \$1,000,000
- \$1,000,001 – \$5,000,000
- \$5,000,001 – \$10,000,000
- \$10,000,001 – \$25,000,000
- > \$25,000,000

**THANK YOU FOR PARTICIPATING IN THIS STUDY.**



# Appendix F: Statement of contribution to doctoral thesis containing publications

DRC 16



MASSEY UNIVERSITY  
GRADUATE RESEARCH SCHOOL

## STATEMENT OF CONTRIBUTION TO DOCTORAL THESIS CONTAINING PUBLICATIONS

(To appear at the end of each thesis chapter/section/appendix submitted as an article/paper or collected as an appendix at the end of the thesis)

We, the candidate and the candidate's Principal Supervisor, certify that all co-authors have consented to their work being included in the thesis and they have accepted the candidate's contribution as indicated below in the *Statement of Originality*.

**Name of Candidate:** Chao Zhao

**Name/Title of Principal Supervisor:** Dr Yuanfei Kang

**Name of Published Research Output and full reference:**

Zhao, C., Kang, Y., & Scott-Kennel, J. (2018). Internationalization speed and performance of SMEs: The interactive effects of absorptive capacity and international experience. Under review at Journal of World Business.

**In which Chapter is the Published Work:** Chapter 2-6

Please indicate either:

- The percentage of the Published Work that was contributed by the candidate: 80% and / or
- Describe the contribution that the candidate has made to the Published Work:  
The candidate designed the study, collected data, carried out statistical analysis, and wrote up a draft. The supervisor and co-author have reviewed the analysis results and revised the paper.

Chao Zhao  
Digitally signed by Chao Zhao  
Date: 2018.11.07 17:21:18  
+13'00'  
Candidate's Signature

07/11/2018  
Date

Yuanfei Kang  
Digitally signed by Yuanfei Kang  
Date: 2018.11.12 15:50:23  
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Principal Supervisor's signature

12/11/2018  
Date

GRS Version 3– 16 September 2011