Internationalisation, Digital Technology Adoption, and International Performance: Evidence from Chinese Firms

Paul Khong

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Declaration

Statement of Originality

This is to certify that to the best of my knowledge; the content of this thesis is my own work. This thesis has not been submitted for any degree or other purposes.

I certify that the intellectual content of this thesis is the product of my own work and that all the assistance received in preparing this thesis and sources have been acknowledged.

No content generated by generative AI tools has been used in the preparation of this thesis.

Paul Khong
2025

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Abstracts

Internationalisation, digital technology adoption, and international performance: Evidence from Chinese firms

Chapter 1 presents the objectives and motivations of my research which comprises of three distinct quantitative studies. Particularly, the extant studies focus on digital technologies to improve the speed, efficiency, flexibility, and control of global business ecosystems, thereby strengthening competitive advantages and firm performance. I engage in this discussion and assert that companies develop distinct advantages by leveraging digital technology to enhance their international performance. The analysis incorporates compositional-based view (CBV) and the new OLI advantages; open resource access, digitisation-enabled linkages, digitisation-enabled integration, thus deepen the understanding of springboard perspective.

Chapter 2 discusses China's globalisation initiatives and government policies. I consider it essential to comprehend the contextual background of the research. I present a timeline of China's economic progression, highlighting the significance of each phase of outward foreign direct investment (OFDI) leading up to the digitalisation era.

Chapter 3 presents the first empirical study examining the correlation between digital technology adoption (DTA) and international performance of the emerging market multinational enterprises (EMNEs). The findings suggest a significant relationship between the new OLI advantages variables and international performance. I also discuss the managerial implications of acquiring access to open resources and advancing up their digitisation-enabled systems.

Chapter 4 presents the second empirical paper, which analyses the interaction effects of speed of internationalisation (SOI) on the relationship between the new OLI variables: open resource access, digitisation-enabled linkages, digitisation-enabled integration, and their global DTA. The findings enhance comprehension of the "springboard phenomenon" in developing economies as firms actively pursue strategic assets, thereby prioritising intangible assets that facilitate access to resources to improve firm specific advantage (FSA).

Chapter 5 presents third empirical paper that examines the cognitive skills and behaviours of managers that influence the relationship between global digital technology adoption (DTA) and international performance. This research aims to refine the concept of competitive advantage within the international business context by demonstrating how managers employ a composition-based view (CBV) to establish distinctive advantages for their firms or mitigate competitive disadvantages during international expansion following entry into a foreign market.

Chapter 6 presents the theoretical and managerial contributions, followed by a discussion of research limitations and future research.

Chapter 7 consists of appendices and an extended literature review on certain key theories. This chapter designed to advance the theoretical contributions of the research after the empirical findings have been fully presented and contextualised. The chapter concludes with the inclusion of participation information statements (PIS) and survey questionnaires from the studies.

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Acronyms

4IR	Fourth Industrial Revolution
AI	Artificial Intelligence
AR	Augmented Reality
BRI	Belt Road Initiative
CBV	Composition-Based View
CEO	Chief Executive Officer
CFA	Confirmatory Factor Analysis
CFO	Chief Financial Officer
CIO	Chief Information Officer
CMV	Common Method Variance
COO	Chief Operation Officer
df	Degree of Freedom
DOI	Degree of Internationalisation
DSR	Digital Silk Road
DTA	Digital Technology Adoption
DV	Dependent Variable
EMNE	Emerging Multinational Enterprise
EV	Electric Vehicles
FDI	Foreign Direct Investment
FSA	Firms Specific Advantage
IEO	International Entrepreneurship Orientation
IoT	Internet of Things
IV	Independent Variable
M&A	Mergers and Acquisitions
MOFCOM	Ministry of Commerce
MNE	Multinational Enterprise
New OLI	Open Resource, Linkage, and Integration
OBOR	One Belt One Road
ODI	Overseas Direct Investment
OECD	The Organisation for Economic Cooperation and Development
OFDI	Overseas Foreign Direct Investment
OLI (classic)	Ownership, Location, and Internalisation
PIS	Participant Information Sheet
PPD	Perceived Psychic Distance
RPA	Robotic and Robotic Process Automation
SEZ	Special Economic Zones
SOE	State Owned Enterprise
SOI	Speed of Internationalisation
SPSS	Statistical Package for Social Science
UNCTAD	United Nations Conference of Trade and Development
USA	The United States, or the U.S.
VP	Vice President
VR	Virtual Reality
WTO	World Trade Organisation

Chapter 1: Introduction [1]

1.1 Research Background

The digital economy and technological advancements have transformed how emerging multinational enterprises (EMNEs) utilise unconventional internationalisation strategies to compete with multinational enterprises (MNEs) from advanced countries (Meyer et al., 2023; Strange et al., 2022; Zander et al., 2015). They employ digital technologies to enhance the speed, efficiency, flexibility, and control of their global business ecosystems in order to enhance their competitive advantages and firm performance (Luo, 2021). Yet, organisations are encountering challenges in determining the most profitable approach to orchestrating data and resources through digitalisation and are currently not reaping the rewards of pursuing a growth agenda (Björkdahl, 2020). Besides, current literature is more about how EMNEs carry out harness and leverage local spill overs and expertise (Fosfuri & Motta, 1999; Li, 2010; Siotis, 1999) or strategic resources (Deng, 2007; Luo & Tung, 2007; Makino et al., 2002; Mathews, 2002) from home and host countries' strategic partners (e.g., suppliers, distributors, joint venture partners, technology partners, financial partners, government agencies, and research institutions), mergers and acquisitions (M&A), and strategic asset-seeking, to gain competitive advantages in order to speed up the internationalisation process. However, a more comprehensive investigation is required to assess EMNEs' internationalisation process. Given this significance, the research question I ask is: ***How do EMNEs leverage their digital resources and technologies to boost their international performance?*** Therefore, I explore this void by examining EMNEs' post-entry strategies, such as internationalisation undertakings, and mainly how EMNEs employ mechanisms through the new OLI perspective (open resource access, digitisation-enabled linkages, and digitisation-enabled integration advantages) to boost their competitive edge (Luo, 2021).

There are three studies, each with a distinct focus. *Study 1* (Chapter 3) is to examine the relationship of each new OLI variable and international performance. The findings from *Study 1* may bring new insights as to why and how EMNEs utilised their resources and capabilities. In *Study 2* (Chapter 4), the objective is to examine the impact of speed of internationalisation (SOI) on the relationship between each new OLI variable and digital technology adoption (DTA). DTA has the potential to be a crucial strategic decision for EMNEs in the global economic environment. The extent of DTA may effectively address firms' inherent disadvantages as latecomers and gain a competitive edge. Further, in *Study 3* (Chapter 5), I investigate how the perceived psychic distance

[1] Parts of the section of this chapter were submitted as my PhD Thesis Proposal Defence.

(PPD) and global mindset influence the relationship between DTA and firms' international performance.

Chinese EMNEs were chosen as the study's setting because China has seen a fast digital transition, with substantial investments in digital infrastructure, mobile payment systems, e-commerce, and social media (Guo et al., 2023; Jiang & Murmann, 2022). This environment creates a unique context to examine how DTA can enhance international competitiveness. By analysing the interplay between PPD, global mindset, and DTA, I can better understand the mechanisms that enable EMNEs to navigate diverse global markets successfully.

In particular, Chinese managers are a good fit for the three studies because they are more likely to make transfers that are seen as having big strategic value, like bringing in new products or technologies or when there is a lot of uncertainty about the product (Calantone et al., 2006; Poppo, 2003). In addition, China is a suitable country in representative of emerging markets as its growth in technological innovation (Zhou et al., 2021). Zhao et al. (2025) claims that digital transformation aids to boost innovation output and input, decrease the detrimental effects of agency heterogeneity on innovation performance, while promoting green innovation. Additionally, several studies have shown the positive impact of digital transformation on fostering corporate innovation (Gaglio et al., 2022; Li et al., 2023; Nambisan et al., 2019; Sedera et al., 2022). Consequently, I assert that China is an appropriate environment for conducting this study due to its significant advancement in technical innovation, which is likely to promote digital transformation initiatives.

Its rapid advancements in areas such as artificial intelligence (AI), e-commerce, and renewable energy position China as a leader on the global stage (Liengpunsakul, 2021; Su & Fan, 2022). China, classified by the World Bank as an emerging market economy, had a healthy growth rate of 5.0 percent in the first half of 2024, bolstered by consumer expenditure on services, exports, and investments in manufacturing and public infrastructure (Group, 2024; Kersting & Kilby, 2024). Furthermore, its vast consumer base and increasing investment in research and development highlight its pivotal role in shaping the future of the global economy. It drives both internal and international needs; China is establishing itself as a significant force in influencing the future of the global economy, making this research context the most appropriate among rising economies.

1.2 Theoretical contribution and research significance

Enhancement of capabilities and digitalisation are especially pertinent to EMNEs who have endeavoured for many decades to bridge the gap with their developed world counterparts (Li, 2023). Inability to adapt to the digitised landscape may lead to challenges, including a decline in a firm's fundamental competencies or a diminished presence in the primary sector (Verbeke &

Hutzschenreuter, 2021). Therefore, EMNEs are more appropriate for this study setting compared to developed market firms, since EMNEs are accelerating and transforming the global order regarding digitalisation (Jiang & Murmann, 2022). EMNEs may see a substantial shift in their operational business models when they use digital technology to accelerate their internationalisation process (Strange et al., 2022; Van Zeebroeck et al., 2021). Due to the shift in technological paradigms, EMNEs may have challenges in effectively managing the flow of information inside their strategic partners (Meyer et al., 2020). Therefore, I anticipate that it is critically imperative for EMNEs to cooperatively influence knowledge sharing and innovation decision with strategic partners (Meyer et al., 2020), particularly on adoption of digital technologies to boost international performance. Prior literature has investigated several facets of the firm performance, most notably the impact of international diversity and product diversity (Tallman & Li, 1996), information technology as competitive advantage to boost performance (Powell & Dent-Micallef, 1997), product innovation strategy (Li & Atuahene-Gima, 2001), strategic influence of external networks (Andersson et al., 2002), influence on international networks (Musteen et al., 2010), international diversification (Tihanyi et al., 2005), entrepreneurial orientation (Covin & Miller, 2014) and network embeddedness (Oehmichen & Puck, 2016; Riviere & Romero-Martínez, 2021) and digitalisation and internationalisation (Bhandari et al., 2023). Nevertheless, little is known regarding the magnitude to which DTA by EMNEs may potentially enhance their firm performance. Consequently, the investigation of the impact of speed on the relationship between the new OLI and the DTA of EMNEs may offer valuable insights into internationalisation theory (Johanson & Vahlne, 1977).

Prior research indicates that the speed of firms' expansion in global markets has a beneficial but non-linear impact on their overall performance (Hilmersson & Johanson, 2016). Additionally, it illustrates that the rate at which a company increases its commitment to foreign resources has a detrimental and nonlinear influence on the firms' performance (Hilmersson & Johanson, 2016). Thus, there is a gap in the academic literature on EMNEs' utilisation of open resource access, digitisation-enabled linkages, and digitisation-enabled integration to improve their international performance. Studies have shown that correlation between speed of internationalisation (SOI) and firm performance has been established in two different ways: directly (Abdi & Aulakh, 2018) indirectly (Cho & Kim, 2017). Furthermore, a recent journal article by Bhandari et al. (2023) uses the new OLI to theorise how digitalisation affect firm performance found a curvilinear relationship between digitalisation and performance. Thus, the utilisation of digital resources by EMNEs can be better understood through the application of the new OLI perspective (Luo, 2021) and composition-based view (CBV) (Luo & Child, 2015), which can enhance the explanation of resource utilisation beyond the limitations of existing theories especially taking SOI into consideration (Shaver, 2013).

Moreover, I posit a robust correlation between DTA and international performance. This, in *Study 3*, global mindset and PPD are the chosen moderating variables because, in recent years,

globalisation has evolved with technology, making it crucial to examine the impact of managerial cognitive behaviours on the relationship of DTA and international performance (Chang & Huang, 2022; Meyer et al., 2023). The effect of digitalisation on globalisation has been evident, and the process of internationalisation has become more rapid and prevalent (Strange et al., 2022). Research indicates that, given the current state of globalisation and advancements in technology, certain companies commence exporting operations within a few years of their establishment (Andersson, 2018; Cavusgil & Knight, 2009; Ning et al., 2024; Prasad, 2023). Thus, with the advancement of digital technology, managerial characteristics with a global mindset are an essential prerequisite for enterprises to achieve global competitiveness, particularly given the increasing significance of emerging markets in global competition (Gaffney et al., 2014; Gupta & Govindarajan, 2002). Also, it is plausible that PPD could serve as moderators in this association of DTA and firms' international performance, thus, exhibiting positive effects. Accordingly, the thesis comprises *three distinct studies* concerning internationalisation process, DTA, international performance and managerial cognitions using distinct theoretical explanations. The following paragraphs provide a snapshot of each study.

Study 1 complements the Eclectic Paradigm framework that was proposed by Dunning and further developed by Dunning and Lundan (Dunning, 1977; Dunning & Lundan, 2008). It identifies and assesses significant aspects affecting firms' international productivity. In complementarity to the classic model, this study employs the new OLI perspective (Luo, 2021) to examine the relationship of open resource, linkage, integration advantages and international performance. Indeed, it becomes vital to examine the magnitude of how firms leveraging their capabilities of open resource advantage, linkage advantage, integration advantage on international performance. Organisations are leveraging external open resources advantage as a means of supplementing their internal assets in order to enhance their competitive edge (Chesbrough, 2003; Chesbrough & Appleyard, 2007). Furthermore, according to Luo (2021), the linkage advantage posits that multinational enterprises (MNEs) benefit from the improved digital globalisation in terms of the calibre of their inter-firm and intra-firm connections, as well as their connections to international consumers. Besides, Teece (2014) states that integration advantage not only resolves contractual concerns but also facilitates knowledge acquisition and cross-border dissemination of technology and expertise within the multinational enterprise. Therefore, this study assumes a positive relationship between each variable of the new OLI advantages and firm international performance. However, past research has stated that the speed at which companies expand their operations globally has an adverse, albeit curvilinear, impact on their overall international performance (Hilmersson & Johanson, 2016). *Study 1* aims to include the speed of internationalisation as a control variable in order to assess the hypotheses. The new OLI perspective is a suitable explanatory variable to examine their relationship on firms'

international performance. The findings will possibly be contributing and deepening the understanding of the new OLI and CBV perspectives.

Study 2 extends the findings of *Study 1* by examining the internalisation and orchestration of resources of digital technology and expertise, within the springboard firms. These firms disperse their activities to global affiliates, as noted by Luo and Tung (Luo & Tung, 2007, 2018). *Study 2* investigates SOI influences the relationship between each new OLI variable and DTA. This study is significant as it sets the primary research agenda for fulfilling the focus of the investigation. The study begins by examining the post-entry strategies of EMNEs, including their internationalisation undertakings, and primarily focuses on the creative strategies they employ to enhance their internationalisation process. Existing research fails to clearly explain the impact of the internationalisation process on enterprises' international performance, particularly when crucial activities like DTA influence it. Further, according to Forman and van Zeebroeck's (2019) argument, digital technology has been demonstrated to alleviate certain barriers to the transmission of knowledge. Also, Ma et al. (2022) assert that digital platforms can serve as intermediaries between buyers and sellers, potentially reducing the risks associated with international transactions and thereby bridging psychic distance. However, lacking digital understanding and a digital mindset significantly hinders other stakeholders within the organisation from effectively managing the process (Goldmann et al., 2025; Neeley & Leonardi, 2022). Thus, this barrier could possibly slow down their SOI. Therefore, it can be logically inferred that SOI has the potential to impact the correlation between the new OLI factors and DTA. Based on Hilmersson and Johanson's (2016) findings, the speed at which a firm grows its international market presence has a beneficial effect on its overall performance, but this relationship is not a simple linear one. Hence, considering the current progress in digital technology, it is essential to analyse the effects of speed on the correlation between each new OLI variable and DTA.

Study 3 is an extension of the previous two studies, which build on the behavioural theory of the firm (Cyert & March, 1963), employs the upper echelons perspective to examine the Chinese managers' cognition capabilities and behaviour impacting the relationship of DTA and international performance. Furthermore, it involves evaluating how the thoughts and perceptions of managers affect the implementation of digital technologies that are diffused by strategic partners from both the home and host countries (Kano et al., 2020; Luo & Child, 2015; Luo & Tung, 2018; Van Zeebroeck et al., 2021). Thus, with the rise of digital globalisation and the shift in technology paradigm, the change should impact home countries' firms, as they are the central organisation unit of a multi-business enterprise (Collis et al., 2007; Menz et al., 2015). According to Menz et al. (2015), headquarters serve as a connection between the internal and external environments and are essential for generating value in the operational revenue, enabling its continued financial viability beyond market boundaries. This presupposes that the choices made by managers of enterprises in their home

nations have a significant impact on the international performance of these organisations. This research asserts that global mindset and PPD have significant impacts on DTA and the international performance of EMNEs. Gupta and Govindarajan (2002) assert that a global mindset is a facet of organisational cognition crucial for identifying and pursuing opportunities, even in diverse and distance regions. As for PPD, Johanson and Vahlne (1977)characterise the original Uppsala concept of psychic distance as the sum of factors that impede the flow of information to and from the market, including differences in language, education, business practices, culture, and industrial development.

Moreover, based on the upper-echelons approach, the cognitive processes of senior managers can be considered as the origin of firm behaviour (Hambrick & Mason, 1984). Therefore, comprehending the mental models of senior managers is essential for a complete explanation of firm behaviour in relation to the adoption of technologies (Cannella et al., 2009). The complexity of decisions regarding internationalisation may exceed the predictions made by current models due to the dynamic and diverse nature of firm behaviour (Puig et al., 2019; Santangelo & Meyer, 2017). This behaviour is influenced by the diverse experiences, goals, and expectations of decision-makers (Surdu et al., 2021). Besides, Luo (2021) argues that the underlying behaviour, culture, structure, and routines that promote connection and transform digital architecture to capabilities need additional exploration. Therefore, I examine the influence of Chinese managers' cognitive capabilities in this study; thus, it provides insights into how Chinese managers use digital architecture to expedite internationalisation.

Study 3 employs composition-based view (CBV) (Luo & Child, 2015) of firm growth to examine the variables' relationships. I aim to broaden and deepen CBV in the international business (IB) context by demonstrating how Chinese managers employ a composition strategy to establish firm-specific advantages or mitigate competitive disadvantages during post-entry internationalisation effort. The concept of the CBV emphasises that enterprises with similar resources may achieve remarkable results by effectively using their existing resources and unique integration talents (Luo & Child, 2015). This leads to enhanced efficiency, faster production, and an optimal price-value ratio that appeals to a wide range of clients (Luo & Child, 2015). Furthermore, I analyse why and how emerging market firms can thrive in heightened global competition over time while missing generally identified monopolistic advantages like international market dominance, brand images, organisational reputation, customer loyalty, and proprietary technology (Luo & Bu, 2018). In addition, Zhou et al. (2020) contend that compositional expertise is often shown via gradual or economical innovation rather than radical innovation. This allows businesses with little resources to differentiate themselves from organisations with abundant resources, particularly in industries with unclear borders. Table 1.1 presents a concise overview of the three studies.

1.3 Development of research questions

The expansion of IB research into the areas of businesses' implementation of knowledge sharing protection and the facilitation of successful information transfer remains a crucial challenge for EMNEs and their geographically dispersed partners (Jiang et al., 2022). The research on the internationalisation of firms has evolved from analysing the decisions made about the process of entry and the acquisition of resources in other countries to investigating the interactions within networks and the exchange of knowledge within such networks. Nevertheless, there is a lack of comprehensive knowledge about the detailed analysis of technology adoption at a micro-level. This includes comprehending the influence of SOI on the relationship between each new OLI variable and DTA. Additionally, the role of PPD and global mindset on the relationship between DTA and international performance is not well understood. Cannella et al., (2009) argue that the most effective way to make high-level judgements is by allowing networks in various locations to exchange information. With the recent progress in digital globalisation, EMNEs operate distinctly compared to their strong competitors, particularly at the intermediate level of the businesses (Yu et al., 2022). So, it is critical to discover the significant of the relationship between the DTA, managerial cognitions and its effect on international performance. As mentioned previously, the thesis starts by asking the following guiding research question: ***How does DTA independently affect EMNEs' international performance?***

In today's globalised economy, EMNEs' internationalisation strategy is one of the key determinants of their performance as they enter and grow in foreign markets. From a management perspective, companies need to have a plan for international growth to compete with competitors. Hence, speed is an essential element of EMNEs' global development strategy, where it should balance using internal resources and the benefits of internationalisation (Chetty et al., 2014). Without a doubt, stakeholders with significant financial commitments will call for a more flexible, consistent, and expeditious internationalisation plan. Moreover, a few research suggest that the SOI and company performance may be significantly related (Hilmersson & Johanson, 2016; Vermeulen & Barkema, 2002; Wagner, 2004). Thus, SOI is therefore one of the key factors influencing how well EMNEs do globally when it comes to international growth strategy. Considering these important points of view, it is essential for me to explore the impacts of SOI on each new OLI variable and DTA of EMNEs.

Furthermore, I postulated that SOI has a non-linear correlation with the international performance of organisations. This research aims to identify crucial moderating elements that might impact the link between the process of internationalisation and international performance. Apart from employing the new OLI perspective as a lens, I examine managerial cognitions to gain further insights into the behaviours of Chinese managers when making strategic business decisions that may

influence internationalisation process. The study uses PPD and global mindset to examine the relationships between DTA and firms' international performance. Thus, examining the Chinese managers' behaviours may present new knowledge and contributions to the behavioural theory of firms. Hence, these theoretical gaps lead to forming an overarching research question and seven specific research questions to address the gaps in the three empirical studies (see Table 1.1).

Overarching research question: **How does SOI impact the relationship between the new OLI variables and DTA when viewed from different theoretical perspectives?**

Study 1

Specific research question 1: What is the relationship between open resource access advantage, digitisation-enabled linkages, and digitisation-enabled integration and international performance?

Specific research question 2: How is the relationship between open resource access, digitisation-enabled linkages, and digitisation-enabled integration and international performance?

Study 2

Specific research question 3: What is the relationship between open resource access, digitisation-enabled linkages, and digitisation-enabled integration and DTA?

Specific research question 4: What is the role of SOI on the relationship between the open resource access, digitisation-enabled linkages, and digitisation-enabled integration and DTA?

Study 3

Specific research question 5: What is the role of PPD on the relationship between DTA and international performance?

Specific research question 6: What is the role of global mindset on the relationship between DTA and international performance?

Specific research question 7: How is the relationship between global mindset, PPD and DTA, viewing from the composition-based view perspective?

1.4 Research objectives

This section will delineate three research objectives, which will be articulated at its conclusion. The research collects data from EMNEs across a range of sectors, including both traditional and advanced manufacturing, as well as services. The study includes both small and large EMNEs, as both types play critical roles in China's outward foreign direct investment and digital internationalisation strategies. Tables 3.4, 4.4, and 5.4 illustrate the industrial classifications.

While Edmondson et al. (2003) assert that the adoption of new technology may predict the heterogeneity of performance improvement rates among organisations, they did not address other aspects that may affect firm international performance. Furthermore, the research was conducted in the setting of a developed nation, the United States (US) health sector, it differed significantly from those of emerging economies such as China. Since my investigation is on small and large firms of any sectors, it is questionable if Edmondson et al.'s results can be premeditated to the research setting of EMNE; however, it could be a good starting point to a crucial discussion. Recent study indicates that the use of digital technology, as evaluated by organisational agility, has a substantial positive impact on the collaborative innovations inside China's high-speed rail sector, both vertically and horizontally (Shi et al., 2023). While the research did not establish a clear correlation between digital technology and performance, it is reasonable to infer that fostering vertical and horizontal collaborative innovations may have a beneficial effect on company performance. In addition to this, Björkdahl (2020) stated that the advantages of digitalisation can have a favourable impact on performance through enhanced effectiveness and expansion. Similarly, research by Martínez-Caro et al. (2020) shown that implementation of a digital organisational culture is essential for organisations to fully harness the potential of business digitalisation in magnifying the growth of value activities and performance.

Contrary to this, a study conducted by Foltean et al. (2019) has shown that the use of social media technology does not directly affect a firm's performance. However, it has been discovered that the ability to manage customer relationships indirectly influences the relationship between social media technology use and firm performance. The emergence of the digital age raises questions about how technology might improve the efficiency of companies. The influence of digital technologies often varies significantly even among companies operating in the same industry (Hsu et al., 2006). Thus, based on the works of Edmondson (2003), Shi et al. (2023), Björkdahl (2020), and Foltean et al. (2019), I argue that technology adoption may have a favourable influence on firms' performance, but a thorough investigation is needed to determine the factors that improve firms' performance.

Moreover, the study by Blichfeldt and Faullant (2021) discover that in low-tech industries, digital technologies are employed to innovate products and services, resulting in enhanced performance. Additionally, the research reveals that digital technologies have a direct impact on performance in high-tech companies and are mostly used for achieving efficiency gains rather than

innovation (Guo et al., 2023). Therefore, digital technologies may serve many purposes and have multiple consequences on organisations' performance. Hence, this thesis has potential to provide both empirical and theoretical contributions to the field of International Business study. The major research question leads to three specific research objectives:

1) To investigate the relationship between open resource access advantage, digitisation-enabled linkages advantage and digitisation-enabled integration advantage and international performance of Chinese MNEs. Furthermore, to investigate the relationship of open resource access advantage, digitisation-enabled linkages advantage and digitisation-enabled integration advantage and international performance in Chinese MNEs, viewing from the CBV perspective.

2) To examine the correlation between the new OLI and DTA of Chinese MNEs. Moreover, this study aims to examine the moderating impacts of speed on the association between each new OLI variable and DTA in Chinese multinational enterprises.

3) To examine how the global mindset and PPD of Chinese managers affect the relationship of DTA and international performance.

1.5 Research methodology

1.5.1 Introduction

This section explains the systematic process of my research and justifications for appropriating each step. I employ a quantitative research methodology with a specific system. First, I explain the paradigm of the research. Second, I propose a sampling method that is suitable for the study. Third, I provide suggestions to control the biases to ensure the reliability of the study. Fourth, I suggest appropriate measurements for proposed variables and, lastly, I cover discussions of analysis and findings.

1.5.2 Research paradigm

The achievement of my research goals depends on the use of empirical evidence and metatheories to draw accurate conclusions. Understanding the phenomena is crucial to suggest a change, since the research reflects the dynamic nature of the global business and management sector (Saunders et al., 2015). In addition, I gather data using a quantitative methodology that relies on a logical framework and a survey methodology. The ultimate rationale for using a deductive approach is to elucidate causal connections between variables via quantitative methods (Saunders et al., 2015).

Ultimately, I intend to examine data collected from managers of Chinese MNEs. To minimise common method variance (CMV), I launched the data collection using a randomised questionnaire technique using Qualtrics software, as suggested by the editor of the Journal of International Business Studies (JIBS) (Chang et al., 2010). Addition techniques to reduce CMV will be proposed in each of the chapter.

1.5.3 Sampling method

I gathered data from managers of Chinese multinational enterprises (MNEs) using a purposive sample frame, as specified by Saunders et al. (2015). I planned to use data from State-Owned Assets Supervision and Administrative Committee released by the Chinese Ministry of Commerce. These organisations are integral parts of the Chinese government's highest legislative authorities, responsible for supervising and regulating industries. The dataset may provide dependable information on the global presence and proportion of foreign sales for the purpose of stratification. This research employs stratified sampling, as described by Patton (1990)

In addition, I divided the sample process into significant strata based on one or more attribute procedures. I used a probability sampling technique known as stratified random sampling, as described by Saunders et al. (2015). I gathered samples from Chinese enterprises that possess global operations, sales, and overseas network collaborators. On the contrary, using a stratified random sample approach results in higher costs in comparison to basic random and systematic sampling methods (Saunders et al., 2015). Hence, the purposive sampling technique is used to provide a more precise depiction of the population under investigation. The study trying to collect a minimum of 250 samples to achieve a 95 percent confidence level. To improve the likelihood of success in data collection, I sought guidance from The University of Sydney Chinese Studies Centre, situated in Suzhou, China, who offers consultation during the pre-data gathering phase.

The data is gathered in two phases. Initially, the study proposes the act of dispatching an introductory request to participants by either Qualtrics survey software system or the WeChat application, accompanied by comprehensive information on the research. The electronic communication contains a participants-information-sheet eligibility requirement, and study surveys. The survey was sent to a minimum of 2000 stratified samples of Chinese multinational enterprises (MNEs) located in economically developed regions of China. In all, the study achieved a 15% response rate, which equals 296 responses, but a total of 58 respondents with incomplete data, mostly due to participants failing to complete the necessary questionnaires, with a remaining of 238 samples.

In summary, I sent a minimum of 2000 stratified samples to Chinese multinational enterprises (MNEs) located in economically advanced regions of China. The samples include of high-level

executives, such as Managing Directors, CEOs, COOs, CIOs, CFOs, Presidents, VPs, and Department Managers, who possess substantial authority in shaping the firm's strategic growth. Furthermore, I use the snowball approach by soliciting participants to locate potential survey respondents from industry partners or alliances. After the referral receivers are selected, an automated message will be created and delivered to the possible samples. The managers of the participating Chinese multinational enterprises (MNEs) must meet the specified research criteria:

i. working with a company must have global sales.
ii. working with a company must have global presence.
iii. the executives must hold a position of influence within the organisation.

1.5.4 Questionnaire design

Each measuring scale for each variable in the three empirical studies is adopted from research published in high impact journals; thus, A* or A rated journals (ABDC Rating) since this requirement assures that all scales have been evaluated and verified for reliability and validity.

The questionnaires are originally written in English. Thereafter, the instruments are translated to simplified Chinese and certified by a native speaker who are competent in the languages (Chinese and English). The native speaker possesses a Master's degree in English Interpreting. This process was adopted from The University of Sydney's Ethics guide to translated document.

1.5.5 Biases control

In order to mitigate the potential influence of common method bias, I implemented various measures during the survey's design. The questionnaire questions were developed in accordance with the principles suggested by Podsakoff et al. (2003). The items were first formulated in English and then translated into Simplified Chinese with clarity and conciseness. The translation was executed by a proficient Chinese translator who is a native speaker. Thereafter, I sought two native Chinese PhD scholars for help to revise the items' terminology in the Simplified Chinese version to validate and tailor the measures for the Chinese context and minimise comprehension issues. I randomly placed all primary questionnaire items on the survey and used separate questions to test various constructs, which minimised the chances of item embeddedness and connections influencing respondents' judgements (Podsakoff et al., 2003). Before launching a pilot test, I sought help from two native Chinese managers to perform an accuracy check especially how the Chinese wordings are expressed. The questionnaire is then modified and changed according to the suggestion of the two Chinese Managers to suit the target respondents. Thereafter, a pilot test was performed with two

respondents to examine the questionnaire. Once again, I adjusted the survey questions based on feedback from the respondents and completed the survey instruments for implementation.

Moreover, organising questions on various scales and constructs in a different sequence reduces the likelihood of common method variance (CMV). This is because respondents will have a more difficult time combining related items to mentally forming correlation necessary to generate a CMV biased pattern of answers (Chang et al., 2010). Hence, I have adopted a method to mitigate biases by employing randomisation of question order through the utilisation of Qualtrics survey software. This bias reduction approach originates from an academic research journal published in the Journal of International Business Studies (JIBS). This study examines the influence of parent control from home nations on conflict inside multinational joint ventures. Barden, Steensma, and Lyles (2005) used different response anchors, performed temporal separation of measures, and deliberately adjusted the order of questionnaire questions in their research. The methodological decisions were intended to minimise the possibility for CMV to affect the connections among dependent, independent, and control variables (Chang et al., 2010). Furthermore, to minimise the possible impact of CMV, I gathered the data at several time intervals (Chang et al., 2010). The first data collection began in October 2023, followed by a subsequent collection in March 2024.

Lastly, I employed another study methodology to reduce CMV during the research design by involving a careful creation and implementation of the questionnaire (Chang et al., 2010). Participants must be assured confidentiality and anonymity of the research, informed that there are no definitive correct or incorrect answers and encouraged to offer replies that are as sincere as possible. Furthermore, I have provided a set of enquiry that is more focused on factual information and less likely to be related with CMV (Podsakoff et al., 2003).

1.5.6 Measurements

Hypotheses are developed using the nine variables for the three empirical studies and stated in the context of a ceteris paribus situation in order to verify the validity of the conceptual model. Using the variables and the three theoretical perspectives, this section delves into the process of hypotheses generation. In the later portion of this section, the research also takes a closer look at the study's control variables. The measurements of all the variable will be itemised in each study under the title Methods.

1.5.7 Analysis

I assess and verify the accuracy and credibility of the data collected using the Statistical Package for Social Science (SPSS) version 29.01. The SPSS software tool is suitable for the duties

at hand due to the study's need for the use of hierarchical multiple regression approaches for analysis. Although there are other analytical tools available, SPSS is the best appropriate for doing all the necessary analytical approaches for this investigation. The research used hierarchical multiple regression analysis methods to examine the comparability and connection between variables (Lindner et al., 2021). In addition, this study uses a micro-level analysis to investigate the correlation between the variables. In addition, I utilise micro-levels of analysis to investigate the correlation between the determinants and independent variables. Therefore, I verify the assumptions by using the identified variables.

1.6 Ethical issues

The Australian code of research and the university's ethical policy should be considered while analysing the ethical issues brought up by this work. Moreover, the research required human participants, therefore the ethics committee at Sydney University had to deliberate over the proposal many times before approving it with **Approval No. 2023/452.**

1.7 Facilities and resources

Key components of this research include the provision of computer and printing equipment, as well as digital network facilities. The facilities and resources available at the institution are enough to finish the survey. Access to vital information from the State-Owned Assets Supervision and Administrative Committee, the China Ministry of Commerce, and other reliable commercial websites will be sought from a private supplier.

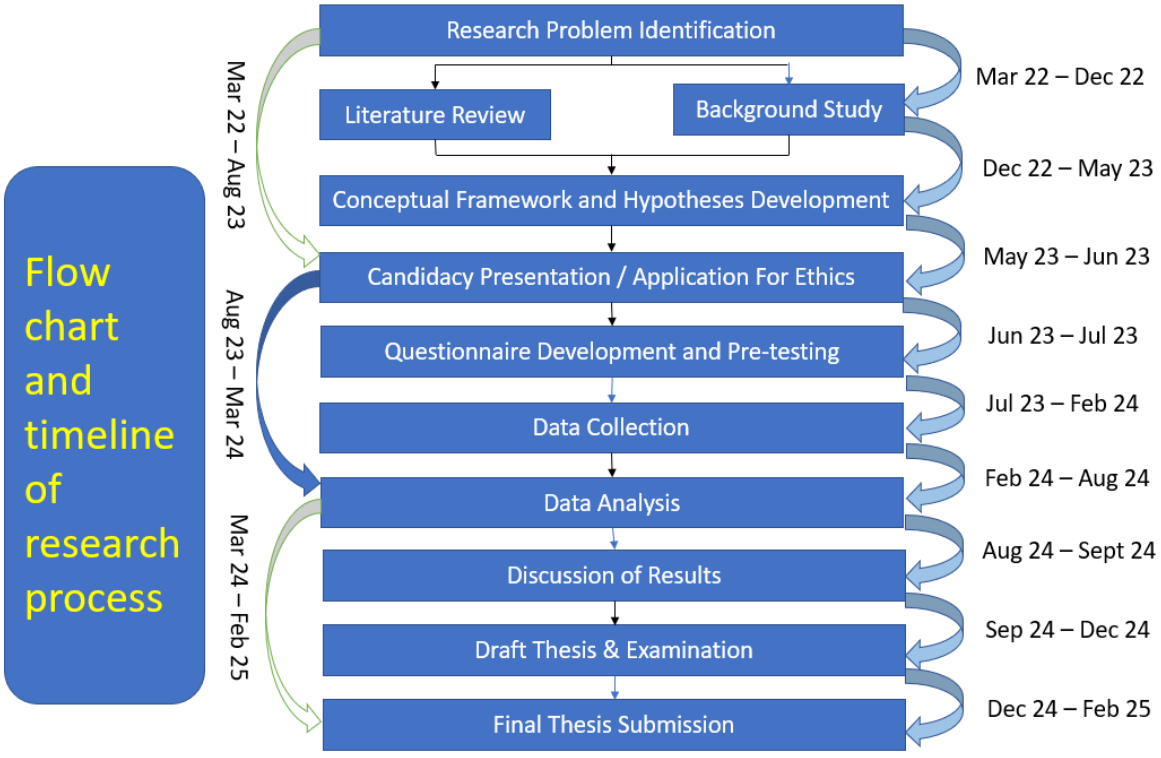
1.8 Limitation of the study

Initially, due to the use of the novel OLI perspective (Luo, 2021), there is a lack of research that may be susceptible to methodological constraints. Furthermore, the existing body of literature on DTA mostly consists of reports within the business information research domain. Consequently, the absence of literature in the international business area may be considered a constraint. Furthermore, the study's limitation is confined to the specific setting of multinational enterprises (MNEs) in China, hence disregarding other organisational levels such as foreign subsidiaries or other partnerships. Furthermore, just concentrating on the major urban areas of China's highest-ranking officials may result in a limited sample size, which might compromise the accuracy of statistical analyses.

1.9 Timeline

The investigation started in March 2022 and is projected to conclude by March 2025. The research is concluded based on the expected timeline. Figure 1.1 depicts the chronological sequence of the study.

Figure 1.1 Timeline of Research [2]



[2] The Timeline of Research was presented to the Thesis Proposal Defence Committee.

Table 1.1 Summary of the three empirical studies [3]

	Variables	Research Gaps	Theories	Objectives
Study 1	New OLI - open resource advantage, linkage advantage, and integration advantage (IV) International Performance (DV)	EMNEs' post-entry issues, such as operations undertaking, particularly employing mechanisms through the new OLI perspective.	Composition-based view (Luo & Child, 2015) The new OLI Perspective (Luo, 2021) Springboard perspective (Luo & Tung, 2007)	Investigating the relationship of open resource access advantage, digitisation-enabled linkages advantage, and digitisation-enabled integration advantage on performance.
Study 2	New OLI - open resource advantage, linkage advantage, and integration advantage (IV) Speed (Moderator) DTA (DV)	It entails the strategic decision to adopt digital technology from geographically dispersed strategic partners, thus, employing DTA to examine post entry internationalisation phenomenon.	The new OLI perspective (Luo, 2021) Springboard perspective (Luo & Tung, 2007) Composition-based view (Luo & Child, 2015) International-isation Theory	Examine the magnitude of adoption of digital technologies and subsequently its effect the relationships of each new OLI factor on firm's DTA.
Study 3	DTA (IV) Perceived Psychic Distance (PPD) (Moderator) Global Mindset (Moderator) International Performance (DV)	How Chinese MNE (i.e., the upper echelons) respond to their resources amalgamation and internalisation to strengthen their competitive edge.	Composition-based view CBV (Luo & Child, 2015) Upper Echelons theory (Hambrick & Mason, 1984) Behavioural theory of the firm (Cyert & March, 1963)	Using CBV to discover the unique compositional capabilities of Chinese MNEs whilst, examining the moderation effect of PPD and global mindset on the relationship of DTA and international performance.

[3] Summary of three distinct studies that were proposed to the Thesis Proposal Defence Committee.

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Chapter 2: Contextual Background of China

2.1 Introduction

This chapter provides background information on China's outward foreign direct investment (OFDI). The development of China's OFDI development is presented in section 2.2. It distinguishes China's OFDI into five stages, based on the progression of development and investment with support from illustration of OFDI's official data. The discussions on China's OFDI progression covers more than forty years, from 1979 to 2022. It comprises overall trends, rules and legislation, reform techniques, and regional repercussions from the reform. Furthermore, it presents the development of the most recent One Belt One Road initiatives. Then, it discusses the effects of the COVID-19 pandemic on the nation. Next, it discusses the recent OFDI developments in China, specifically on the impact of technologies and digitalisation on the growth of Chinese MNEs. Lastly, the chapter includes a review of prior studies on Chinese OFDI development and discusses the implications of this study.

2.2 Evolution phases of China’s OFDI development

Foreign direct investment preceded China's global expansion. However, its entrance to the world market began in the modern period with the introduction of the open-door policy in the late 1970s, the implementation of globalisation strategies, and the accession to the World Trade Organisation (WTO) membership in 2001. Since then, China's MNEs have held a prominent place in the expansion of the global economy. The 'evolutionary' model is a plausible beginning for explaining the behaviour and strategy of organisations as they steadily expand their international business operations (Li, 2014; Penrose & Penrose, 2009). This model illustrates how firms adapt and evolve in response to changing market dynamics and competitive pressures. As these EMNEs continue to innovate and diversify, they contribute significantly to shaping global trade patterns and investment flows, reflecting their growing influence on the international stage. Scholars distinguish the events into five phases.

However, due to the dynamic nature of time, this model fails to incorporate the current trend of digitalisation, which is a crucial factor in shaping the growth of nations. To address this oversight, it is essential for researchers and policymakers to integrate digital transformation strategies into their frameworks, as they play a pivotal role in strengthening productivity and competitiveness. This integration will enable a more accurate understanding of how digital advancements impact economic

growth and investment patterns. By doing so, stakeholders can develop more effective policies that align with the evolving landscape of global economics.

Moreover, by recognising the interplay between digitalisation and traditional business models, firms can better navigate the complexities of the global marketplace and ensure sustainable growth. As nations navigate the complexities of an increasingly digital world, it becomes evident that the integration of digital transformation strategies by researchers and policymakers is essential for driving growth. By strengthening productivity and competitiveness, digitalisation not only revitalises traditional business models but also equips them to thrive in the global marketplace. Acknowledging the intricate interplay between innovative technologies and established practices allows businesses to adapt more effectively, ensuring their relevance amid evolving market demands. Ultimately, leveraging these insights positions nations to harness the full potential of digitalisation which could lead to structural change for economic development; especially with applicable design policies and strategies paving the way for sustainable economic advancement (Zhou et al., 2021).

2.2.1 Phase 1 – 1979 – 1985

China progress started from an unpretentious beginning. Historically, the Chinese believed that their nation occupied a central location in the world. This view is reflected in the Mandarin name for China, 'Zhong Guo' , (Zhong meaning 'middle' and Guo meaning 'kingdom or country') (Boncori, 2013). China cherished its ancient customs and culture while retaining the emperor's sovereignty, whereas outsiders were regarded as inferior. China has endured centuries of tremendous civilisation and cultural advancement largely disregarded in the West, geopolitical unrest, and estrangement from the rest of the world.

From 1949 to 1979, the economy was a centrally planned structure that supported rapid industrialisation while maintaining a relatively minimal dependency on foreign economic investment (Fujita & Hu, 2001). The nation's progress began when China implemented the "open door" policy and the "four modernisation reforms." The success of enacting liberalisation measures secured the Chinese government's authority over the nation's reform. Thus, changes in Chinese government policy have a favourable effect on OFDI pursuit (Buckley, 2014). Despite its general development and growth, scholars have identified five stages of China's OFDI evolution (Table 2.1) in response to institutional environment changes imposed by government regulations and policies (Buckley et al., 2007; Li, 2014; Wu & Chen, 2001).

In the first phase in between 1979 to 1985, China introduced the "open door" policy and executed the "four modernisation" reforms. At this stage, the rationale for overseas investment was primarily centred on China's strategic objectives; the development of overseas enterprises was thus

meant exclusively to extend the field of collaboration with other nations, build international trade links, and increase China's global political and economic power, not to maximise profits (Li, 2014; Wu & Chen, 2001). With the establishment of Special Economic Zones (SEZs), the country was able to move from a centrally planned economy to a socialist market system (Crane et al., 2018). SEZs in China are defined as specific geographic regions that permit the incorporation of free-market concepts in strategy to garner more significant foreign investment. Shenzhen, Zhuhai, and Shantou in Guangdong, and Xiamen in Fujian province (Southern China) were the first SEZs to be developed in 1979–1980. In 1985, with the inclusion of the Hainan Special Economic Zone, there were five main SEZs (Yitao & Meng, 2016). These regions were chosen because they are geographically distanced from the political authority of Beijing and would thus encounter less intervention (Crane et al., 2018). The policy and economic liberalisation reforms had a drastic impact, propelling China's average yearly growth rate to reach 9.0% between 1979 and 1990 (Lin, 2011a). At that time, firms in China were mainly state-owned enterprises (SOEs) (Child, 1996).

2.2.2 Phase 2 – 1986 – 1991

In stages, from the 1980s to the 1990s, China gradually increased its outflow of OFDI, and the spectrum of participants has extended to include non-state-owned enterprises. With fewer restrictive rules, the government encourages more enterprises to invest abroad. Following, China's OFDI was undergoing second phase (1986–1991), during which the government loosened the restrictions and encouraged more businesses, particularly privately held ones, to establish foreign affiliates. (i.e., joint ventures, green-field investment, mergers and acquisitions, etc.)(Wu & Chen, 2001). Chinese businesses were urged to acquire additional resources and use their comparative advantage in the regional and international markets. However, the shortage of internal resources restricted China's economic development. Consequently, businesses with adequate financial resources, operational expertise, and qualified foreign alliances were permitted to invest abroad. As a result, Chinese OFDI was then carried out on a much larger scale.

2.2.3 Phase 3 – 1992 – 1998

In early part of 1992, the internationalisation momentum gained pace steadily. Part of the early development that caused the gradual rise in the country’s internationalisation was the initiatives from the ruling party government. A primary key event in 1992 was Prime Minister Deng Xiaoping's visit to South China on a mission to promote internationalisation. Deng’s strategy was to win the public support, regain control of the media and encourage a rapid pace of reform and "opening up."

During his tour, he visited Shenzhen, one of the SEZs that approved by him (Martinek et al., 2018). His visit to Southern China inspired the people of Guangdong Province to catch up with the neighbouring countries, Hong Kong, Singapore, Taiwan, South Korea known as the "Four Asian Tigers" (Sun, 1992).

Subsequently, in 1997, the Asian financial crisis brought China through rapid development with high market volatility. Nevertheless, the downturn has not dissuaded the Chinese government from integrating SOEs into conglomerates modelled after their Korean counterparts (Liew, 1999). The model is regarded as the most potential organisational structure for advancing the internationalisation and modernisation of China. Although China's restrictions were tightened due to the crisis, they did not stop the reform of SOEs. In the view of the Chinese government, the reform was necessary due to the escalating losses of SOEs and their detrimental impact on the financial system.

Moreover, the Chinese government has recognised the critical parts of the reforms, such as reinforcing the central bank's independence, transforming state-owned banks into fully commercial enterprises, and developing a regulated financial market (Wang, 1999). Nonetheless, the reform was unsuccessful and is mainly attributable to the firms' lenient financial limitations and the absence of a genuine threat of insolvency (Steinfeld, 1999).

2.2.4 Phase 4 –1999 – 2001

Apart from this, the relative decline of SOEs is mostly caused by their comparative lack of competitiveness. At the end of the 1990s, China shut down tens of thousands of loss-making businesses, substantially reducing losses and increasing overall profitability. After 2002, the global increase in natural resource prices coincided with the export surge that followed China's WTO membership to generate a cyclical boom in the Chinese economy, which contributed to skyrocketing profits (Naughton, 2010). The Chinese government promoted the expansion of foreign investment through incentives such as fiscal and tax policies.

2.2.5 Phase 5 – 2001 – onwards

Following, after joining WTO in 2001, China started a more aggressive globalisation plan known as the "Go Global" strategy, and its OFDI outflow has increased significantly since then. At this time, China's OFDI was regulated by the government and managed by a select group of SOEs. In furtherance its growth and to build relationships with these host nations, SOEs were approved and

authorised by policy makers to set up their representative trading offices located overseas. One of the primary purposes of representative offices is to gather market and economic data from host countries. The unprecedented growth attracts many views from economists and scholars. In the early part of the millennium, they believed that China might not be able to continue to grow at the pace it had because of a lack of fundamental reforms; despite this, it reached an even higher annual growth rate of 10.4% (Lin, 2011a). There are many factors behind the momentum of growth, but the following two aspects may have mainly contributed to China's extraordinary 30-year growth performance:

i. By using a dual-track strategy, China was able to accomplish both stability and a rapid transition at the same time.
ii. As a latecomer, China capitalised on the advantages of backwardness and developed in accordance with its comparative advantage (Lin, 2011a, 2011b).

The Chinese Government employed a dual-track strategy by supporting SOEs and simultaneously allowing private enterprises to proper whenever possible was one of the underlying successes of the reforms. In addition, as a growing nation which began its modernisation campaign in 1949, may benefit from its backwardness in its quest for technical innovation and structural change (Gerschenkron, 2015). Unlike MNEs in China, MNEs in advanced countries are compelled to make costly and high-risk investments in research and development to keep pace with technological advancements. In contrast, as latecomer country, Chinese MNEs may competitively gained access to infrastructure, technology, and businesses from developed nations to further their industrial and technical development (Lin, 2011b). Thus, China leverages its backwardness in industries, innovation, and socio-economic systems to catch up with its latecomer disadvantages.

The ingenuity did not take long for China to catch up with advanced countries' economies. For instance, its retail products industry was around $1.8 trillion a decade ago or less than half the US market size. However, it hit $6 trillion in 2019, exceeding the $5.5 trillion thresholds set by the US (Ignatius, 2021). Table 2.1 illustrates the evolution of phases in China's OFDI development. This rapid growth highlights China's ability to innovate and adapt, enabling it to surpass the US in retail market size within a relatively short period. Such advancements reflect the country's strategic investments and increasing consumer demand, positioning it as a formidable player in the global economy.

The remarkable ascent of China's OFDI, which reached an impressive $5.5 trillion in 2019, underscores a transformative shift in the global economic landscape, eclipsing the US for the first time. This rapid growth is not merely a reflection of financial prowess but also highlights China's capacity for innovation and adaptability in an increasingly competitive marketplace. China's strategic investments, which have swiftly surpassed the US in retail market size, intricately link to its

burgeoning consumer demand, further solidifying its status as a formidable global economic player. As these dynamics continue to evolve, it is evident that China's proactive approach to OFDI may play a pivotal role in shaping international economic relations and defining future market trends.

Table 2.1 The development of China's OFDI [4]

Year	Key Outcomes	Objectives	OFDI Expansions
1979 - 1985	Under the 'four modernisations' reforms, the 'open-door' policy and economic reform are executed.	Extend the field of collaboration with other nations, build international trade links, and increase China's global political and economic power (Wu & Chen, 2001)	Under the reform, only a small number of SOEs are dominant. China's average yearly growth rate reaches 9.0% between 1979 and 1990 (Lin, 2011a)
1986 - 1991	With fewer restrictive rules, the government encourages more enterprises to invest abroad.	Chinese businesses were urged to acquire additional resources and use their comparative advantage in the regional and international markets.	Resulting in an increase of non-SOEs participation. In this phase, Chinese's OFDI was then carried out on a much larger scale.
1992 - 1998	Deng Xiaoping's visit to South China and the opening of the nation's economy.	Deng's strategy was to win the public support, regain control of the media and encourage a rapid pace of reform and "opening up."	Due to the Asian financial crisis (1997) and the tightening of restrictions, China was going through a rapid development at a high market volatility.
1999 - 2001	In the tenth five-year plan, the "go global" strategy was introduced to promote more internationalisation.	Promote the expansion of foreign investment through incentives such as fiscal and tax policies.	The OFDI expanded with a stable growth at a more consistent rate.
2002 - 2024	China's admission into WTO with a less centralised and more efficient clearance mechanism.	Catching up with advanced country in terms of in technologies.	The opening of the Chinese market to international competitors prompts an increase in Chinese companies seeking markets and resources abroad.

Source: (Wu & Chen, 2001), (Buckley et al., 2007), (Lin, 2011a) and (Warner et al., 2004)

[4] This Table was adopted from three sources:
1) Wu, H. L., & Chen, C. H. (2001). An assessment of outward foreign direct investment from China's transitional economy. Europe-Asia Studies, 53(8), 1235-1254.
2) Part of the sources were referred from Buckley, P. J., Clegg, L. J., Cross, A. R., Liu, X., Voss, H., & Zheng, P. (2007). The determinants of Chinese outward foreign direct investment. *Journal of International Business Studies, 38*(4), 499-518. https://doi.org/http://dx.doi.org/10.1057/palgrave.jibs.8400277
3) Lin, J. Y. (2011a). China and the global economy. *China Economic Journal, 4*(1), 1-14. and Warner, M., Sek Hong, N., & Xiaojun, X. (2004). 'Late development'experience and the evolution of transnational firms in the People's Republic of China. *Asia Pacific business review, 10*(3-4), 324-345. . The period between 2002 and 2024 was added to bring the discussions up to date.

2.3 Chinese MNEs' OFDI motivations

Advanced countries' MNEs have been expanding their businesses globally for different purposes. Eclectic theory of Dunning (2000) stated four motivations for advanced countries' firms to carry out OFDI: resource-seeking, market-seeking, strategic asset-seeking, and efficiency-seeking. However, the Chinese MNEs' OFDI motivations are very different from the advanced countries' MNEs' motivations. Existing theory is deemed insufficient to describe Chinese MNEs' outbound FDI tactics, leading requests for new or updated theoretical contributions to explain their behaviour (Buckley et al., 2007; Child & Rodrigues, 2005; Luo & Tung, 2007; Mathews, 2006). For example, efficiency seeking may not motivate Chinese MNEs as China already has low labour costs to sustain most industries (Buckley et al., 2007). Also, the vast geographical areas of China provide choices of provinces to strategically support local firms and SOEs relative to the availability and low cost of labour (Chen, 2018). Thus, the provincial economic condition is one of the critical factors for Chinese MNEs' decision to logistically position their operations.

As Chinese MNEs' requirements change, so do OFDI motivations evolve through time and circumstances. However, Chinese MNEs' OFDI motivations may vary. Hence, research have shown that resource-seeking, market-seeking, and efficiency-seeking may not be their primary motivations, however, they have attracted significant attention to strategic asset-seeking (Buckley et al., 2007; Liu & Scott-Kennel, 2011). For instance, the primary objectives of Chinese multinational enterprises are to acquire cutting-edge technology, production know-how, modern management capabilities, and internationally renowned brand names. With this primary objective, MNEs in China transfer strategic assets such as digital technology from host countries firms to back home for amalgamation and internalisation. Hence, this study intends to draw data from Chinese MNEs to understand how DTA, and other various factors may influence the international performance of Chinese MNEs.

Nevertheless, there are many disadvantages for Chinese MNEs in doing business domestically. The severity of government policies, insufficiency of technological resources, and shortage of highly skilled workers impede Chinese MNEs from operating locally (Child & Rodrigues, 2005). Regional protectionism and strict accessibility to financial resources deprive Chinese MNEs from expanding their operations. Also, adding to the limitations are the disparity of the regional markets which consist of multiple layers of government bureaucracies that may hindered the Chinese MNEs expansion ingenuity. For these reasons, Chinese MNEs seek ways to overcome the barriers by expanding overseas. OFDI motivations for Chinese MNEs in terms of resource-seeking, market-seeking, and strategic asset-seeking are undisputable to be bound with distinctive characteristics. Overall, the motive behind China's overseas direct investments (OFDI) is multifaceted in general; however, it can be broken into three primary categories: resource seeking, market seeking, and strategic asset seeking (Buckley et al., 2007). Hence, it provides a clear

framework for understanding the Chinese MNEs' behaviour in undertaking their FDI initiatives. Yet, the most critical concern is what will happen to the strategic asset after the OFDI, as well as how the Chinese managers would internalise and combine the resources, digital technology, and know-how from the assets sought.

2.3.1 Resource-seeking

EMNEs invest in advanced economies more on strategic asset-seeking whereas, in emerging economies, more on market-seeking or natural resource-seeking. The latter requires less of a springboard act (Luo & Tung, 2018). However, various challenging factors caused EMNEs to exhibit idiosyncratic behaviours, which required a nuanced understanding of organisational intricacy, market conditions and government regulations. It applies to China's despite the country's enormous endowment of natural resources per capita availability, particularly mineral resources such as iron ore, aluminium, copper, and petroleum, is very low by global standards (Deng, 2007). One of the idiosyncratic behaviours is shown in the research by Kang and Li (2018), when Chinese MNEs have a strong resource-seeking intention, the FDI location choice is negatively correlated with differences in political risk but favourably correlated with differences in economic freedom between China and the host nations.

Moreover, the pursuit of resource-seeking objectives may have a substantial effect on the risk-consideration behaviour pattern of Chinese external FDI. Particularly, strategic resource-seeking being the results of an internalisation of the nation strategic objective, it represents the interests of the state as well as the enterprise, and so management actions in achieving this strategic objective would receive support from the government (Ahmed et al., 2002). Thus, the strategic intent of resource-seeking is expected to lower the Chinese firm's tolerance for political risk considering its perception of government backing and the benefit of low-cost capital resulting from lenient budget constraints (Malhotra et al., 2010). Nevertheless, the internationalisation theory emphasises the significance of equity control in the utilisation of finite natural resources (Buckley et al., 2007), China's energy and resource supplies are often secured by major SOEs through acquisitions.

2.3.2 Market-seeking

Dunning's Eclectic model of internationalisation assumes that a firm will likely to internationalise if it holds certain ownership-specific assets not held by rival firms to generate revenues by leveraging its assets in overseas markets; and this is especially significant when enterprises have a market-seeking motive for internationalisation (Dunning, 1988; Ramamurti,

2012). Scholars observed Chinese seeking markets in the Organisation for Economic Cooperation and Development (OECD), which complements the argument by Dunning and Lundan (1993) that the level of trade of the investment trends between countries expected the forthcoming of market-seeking (Buckley et al., 2007). It happened during Chinese industrialisation when demand for consumer goods resulted in assorted manufacturing production lines. For instance, the disproportionate production capacity of textile apparel, household appliances, and footwear manufacturers, thus, must locate larger markets outside the saturated home market (Deng, 2004). Besides, the Chinese government plays a vital role in paving the way by promoting SOEs and Chinese MNEs in market-seeking undertakings to internationalise.

2.3.3 Strategic asset-seeking

The extant studies of strategic asset-seeking FDI commonly regarded as including method that reinforce perceived competitive disadvantages of Chinese MNEs. Chinese MNEs rely heavily on strategic asset-seeking via mergers and acquisitions to enhance their competitive advantages (Deng, 2009; Luo & Tung, 2007). They also engage in cross-border acquisitions to acquire critical assets for organisational learning and competitive advantage. Besides, Chinese MNEs target economies with high levels of intellectual and human capital to mitigate their competitive disadvantages and enhance their competitiveness abroad (Dunning, 2006).

However, not every Chinese MNE is a newcomer to strategic asset-seeking via merger and acquisition. Many enhance their competitiveness through international tactics and leapfrogging, utilising China's country-specific advantages (Ramamurti & Hillemann, 2018). In addition, scholars have hesitantly supported the claim that Chinese MNEs' strategic asset-seeking approach is planned for the goals of firm-specific advantage enhancements (Jindra et al., 2016; Sutherland et al., 2018). Indeed, new theories are vital for further explanations for the claim to clarify the behaviour and motives of Chinese MNEs in their pursuit of strategic assets. Notably, in their missions to adopt external knowledge to stay competitive, Chinese MNEs apply strategic intend to seek foreign assets (i.e., digital technologies & know-how) unavailable locally in advanced countries(Luo & Tung, 2007, 2018).

Chinese MNEs in technology-intensive areas such as engineering, electronics and aerospace have invested in technologically sophisticated nations to acquire state-of-the-art technology to enhance their production process and produce new inventions for the global market. For the most part, the Chinese MNEs' motivation for strategic asset-seeking has been widely researched based on the motivations of FDI, such as mergers and acquisitions, green-field or brown-field investment. However, there is a lack of research on conduct and behaviour of Chinese MNEs concerning after

the effect of FDI and how the Chinese firms internalise and amalgamate the resources, digital technology and know-how from the assets sought. Scholars have called for more research in this business sphere to understand Chinese MNEs behaviours (Luo, 2021; Luo & Tung, 2018).

2.4 One Belt One Road development strategy (OBOR – 2013 and onwards)

One Belt One Road (OBOR) comprises the Silk Road Economic Belt and the 21st Century Maritime Silk Road policy, which describes the initiative's underlying concepts and infrastructure (Grieger, 2016). The vision of Chinese President Xi Jinping is an audacious growth, development, and commercial initiatives that aims to enhance connectivity and collaboration among many nations spanning Asia, Africa, and Europe. Since its beginning in 2013, the OBOR initiatives has been viewed as a method of boosting the capability and extending the influence of Chinese enterprises in the world economy, particularly in the OBOR strategy-affected nations. Thus, it is a strategy for infrastructure-driven economic integration to spurred firms such as SOEs and MNEs to increase their overseas direct investment in the belt-road nations. The plan set out five fields of collaborations intend with interest nations:

i. policy cooperation based on long-standing or new multilateral or bilateral methods.
ii. connectivity of facilities: development and improvement of land-based and maritime transportation, power, and telecommunications network.
iii. trade facilitation, to be achieved through streamlining procedures for quarantine and customs clearance, expanding the number of free trade zones, boosting market access, and removing trade barriers. For the time being, this does not need the creation of more complex regional integration structures, such as a trading bloc, common market, economic interdependence, or political and economic integration.
iv. increasing financial integration, including the promotion of the Chinese currency in bilateral trade and participation of global financial organisations sponsored by China.
v. interactions between people (Grieger, 2016).

The OBOR notion is not a free trade agreement, rather, it is more of a growth, development, and commercial initiatives. Besides, it is an infrastructure-driven economic integration initiative. It outlines a design for integrating China's economic partners by improving their infrastructure to match Beijing's own goals. The agreement involves building infrastructures such as railways, roads, ports, and airports where Chinese financial institutions become the major lenders to many belt-road nations. The OBOR plan is anticipated to aid in developing China's large western countryside (Du & Zhang, 2018). The policy aims to make the heartland of the west the frontline in opening doors to the entire world. It plans to foster growth prospects by expanding in the west and central areas and expecting

for potential growth clusters to emerge. Consequently, it can assist address the socioeconomic development disparities between the prosperous coastal regions and the less developed western and central provinces and minimise income disparities (Grieger, 2016). OBOR may be viewed as a second 'opening up' of the Chinese economy. The initiatives were followed by Deng Xiaoping's revolutionary economic reforms in the late 1970s, which bolstered the wealth of China's coastal provinces. Nevertheless, it focuses on the less prosperous western and central provinces which seen as a country's major economic stimulus programme.

As the digital landscape continues to evolve, China's strategic government policies and significant investments through the One Belt One Road initiative have undeniably positioned the nation at the forefront of the global digital revolution. In May 2017, during the inaugural Belt and Road Forum in Beijing, President Xi highlighted the critical role of the Digital Silk Road (DSR) as a core component of the broader initiative. He called for the greater integration of advanced technologies such as artificial intelligence, nanotechnology, quantum computing, big data, cloud computing, and smart city infrastructure into the Belt Road Initiatives (BRI) to promote innovation-led development (Xi, 2017). Beijing strives to establish its preeminent position in global affairs via the Digital Silk Road (DSR) to exert influence and control over a significant portion of the global digital economy (Shen, 2018). The Chinese government has been advocating for digital economy partnership with developing economies via high-level involvement under the BRI, and its digital economy segment, the DSR (He, 2024). By fostering advancements in AI, fintech, and e-commerce, China not only enhances its economic infrastructure but also sets a precedent for innovation that other countries may aspire to replicate. This robust commitment to embracing technology reflects a broader vision of modernisation and connectivity, ensuring that China remains a pivotal player in shaping the future of the global economy. Through these efforts, the nation is not just participating in a digital transformation; it is leading it, thereby redefining its role on the world stage.

2.5 Aftermath of COVID pandemic in China

In Asia Pacific countries, the COVID-19 outbreak has precipitated a 42 percent decline in global foreign direct investment (FDI) inflows from US$1.5 trillion in 2019 to a projected US$859.9 billion in 2020 (ESCAP, 2021). However, recent data for 2023 suggests that global FDI flows have begun to revive, having reached $1.3 trillion(refer to Figure 2.1) (UNCTAD, 2024).

Despite the pandemic, MNEs from developed economies have doubled their overseas investment outflow from $483 billion in 2020 to $1.1 trillion in 2023 (UNCTAD, 2022, 2024). Much of the growth was driven by unprecedented, reinvested earnings and mergers and acquisitions (M&A) activity. In 2023, the fluctuation of investment from channel countries will be maintained.

Given such growth, it is evident that China remains second largest country in terms of FDI inflow and outflow, especially considering the proportions of Hong Kong's inflow and outflow FDI. The effort from Chinese MNEs to catch up with their formidable rivals is getting intense (refer to Figure 2.2).

Moreover, China has come a long way. By analysing its past, there are many factors directed China to today's success. During the government's reformation, China successfully tightened policies and regulations to enable their MNEs to compete with advanced countries MNEs (Sun, 2025). The country is going through a transformation from an agriculturally dominant nation to the world's top industrialised nation in a short period of forty years (Liu et al., 2022). In addition, China has successfully formed political alliances with many developing and third-world countries to gain control of world resources. Apart from this, Chinese MNEs successfully refined their firms by imitating the systemic operational functions of Korean conglomerates. The initiatives paid off; thus, China overtook many countries in FDI inflow and outflow. As a result, the industrialisation transformed China into a capitalism and contemporary urbanisation society.

Nevertheless, China's success is just the beginning. Rather than a follower, China has become a world leader in the Fourth Industrial Revolution (4IR), mostly built on the digital economy (Luo & Zahra, 2023). The drastic changes force Chinese MNEs to reassess their business practices. In addition, China's rapid transformation from agriculture to industrialisation may have significantly influenced firms' operational strategies; however, the fundamentals remain the same. Notwithstanding, corporate managers and senior executives (upper echelons) must comprehend their dynamic landscape, challenge the preconceptions of their key stakeholders, and innovate aggressively and consistently. Thus, to fully utilise the 4IR to enhance productivity and export capacity, Chinese MNEs must appropriate industrial policies, digital infrastructure, and skilful human resources (Bredel, 2019). Additionally, digital industries expanded swiftly in the aftermath of the pandemic (Guo et al., 2023). The quantity of greenfield project announcements reached levels that were comparable to those prior to the pandemic in 2023 (UNCTAD, 2024). To sum up, China is undergoing a significant transformation and Chinese MNEs are leading the country to the next phase of evolution.

2.6 Digitalisation era of China

In the innovation undertaking, Chinese MNEs have a robust internalisation capability on technologies, digital technology, and know-how, primarily when standard similar composition technologies are employed and ready to integrate to compete with formidable rivals (Banalieva & Dhanaraj, 2019). A recent internalisation case example of standard similar composition technologies

was on the ride-hailing application. In 2016, Beijing Didi Chuxing Technology Company Limited, a ride-hailing company based in Beijing, successfully drove Uber out of the Chinese market by acquiring its China operation (Pham, 2018). In 2021, five years after the acquisition, Didi becomes the biggest online ride-hailing company in the world in terms of customer monthly usage. During the first quarter of 2021, Didi was utilised by an average of 156 million people each month in China, compared to 98 million globally for Uber (Zhong & Yuan, 2021). Didi started its operation in 2012, whereas Uber began in 2009; the interesting question is how Didi overtook its formidable rival in a short time? Indeed, Chinese have domestic processes and advantages that allow them to move capital, digital technology, and know-how to enterprises in order to facilitate takeovers (Buckley, 2014). In addition, China's internet usage growth and digital globalisation has intensified digital technology internalisation economies. Hence, as an imperfect market with asymmetric information, China is catching up with advanced countries at speed never seen in terms of cutting-edge technologies and know-how.

Yet in the current decade, China's digital globalisation has only just begun to gain pace (Guo et al., 2023; Jiang & Murmann, 2022). However, the country's economic transition to the digital age has already significantly impacted its growth (Woetzel et al., 2017), and an expectation of this influence to persist. Moreover, given the significance advancement, China may in the future define the global digital frontier through mergers and acquisitions (M&A), investments, the export of innovative business models, technological alliances, and robust amalgamation and internalisation capabilities. In fact, Chinese MNEs are highly capable of internalising and orchestrating the resources they acquire (i.e., digital technology and know-how) (Teece, 2025).

Moreover, the country has the capacity to accelerate the acceptance of digital and technology business models and benefits from a substantial domestic market of young consumers who are eager to adopt new technologies in all their forms (Guo et al., 2023; Jiang & Murmann, 2022). In particular, the nation has seen enormous changes since 2001, after China joined WTO (UNCTAD, 2024). As a result, the opening of market to foreign competitors gives rise to more Chinese firms seeking markets and resources overseas. Apart from this, major political and social reforms caused a progressive transition from a highly centralised, market-oriented economy to a more liberal market economy with large-capitalised private enterprises. Moreover, modern globalisation relies on increased accessibility to key open resources such as technologies, the significance of digital infrastructure, instantaneous global access to knowledge and expertise, and increased exchange of free content and services (Nambisan et al., 2019).

However, a study by He (2024) found that Chinese digital platforms mostly pursued globalisation driven by economic objectives, while Beijing's overarching policy framework, the BRI, has had little direct influence on the growth of privately-owned Chinese platforms and their local

business activities in host nations. Another study by Cheng and Zeng (2024) contend that the notion of the DSR is more accurately seen as a political phrase. A new slogan has arisen from the overarching phrase of the BRI to sustain its momentum. As a result, indigenous companies have used the phrase to get government backing and obtain market access (Farhat, 2021). The competition between Tencent and Alibaba has extended to the global digital arena with the emergence of the DSR (Cheng & Zeng, 2024). Clearly, China has undergone various growth phases, and the transitional economy has occasioned a comprehensive legal framework for foreign investment; thus, it provides momentum to catch up with advanced nations. Thus, in 2020, it surpassed the US as the largest economic nation and the greatest beneficiary of FDI inflow (China and Hong Kong combined) (Ignatius, 2021; UNCTAD, 2022). This remarkable shift highlights China's strategic initiatives to attract foreign capital and enhance its global economic standing. As a result, the nation has not only solidified its position as a hub for international business but also fostered innovation and infrastructure development, which further bolster its economic resilience. The remarkable transformation of China and Hong Kong into the world's largest economic powers underscores a pivotal moment in global finance and trade (UNCTAD, 2024). By implementing strategic initiatives that attract foreign capital, China not only solidifies its status as an international business hub but also creates a fertile ground for innovation and infrastructure development. This dynamic environment fosters not only growth but also enhances economic resilience, enabling the region to navigate challenges with agility. Coupled with digitalisation, China’s influence on the global stage will likely expand, shaping the future of international commerce and cooperation (UNCTAD, 2024).

Similar to global trends, China is seeing heightened economic activity in digitalisation, while the world economy is undergoing structural and technological transformation (Sichoongwe, 2024; Zhou et al., 2021). The integration of digital technology and globalisation has emerged as a crucial factor in expediting job processes and minimising expenses in contemporary business (Elfaki & Ahmed, 2024). According to Li and Piachaud (2019) technological advancements have addressed human needs and may serve as fresh catalysts for economic progress and social advancement. Additionally, the COVID-19 epidemic has expedited digitalisation, with a growing number of individuals increasingly engaging in their activities via online platforms (Amankwah-Amoah et al., 2021; Teece, 2025). Hence, it is crucial for scholars to understand the implications of digital technology adoption towards their internationalisation process. This understanding will not only enhance their theoretical frameworks but also provide practical insights for businesses seeking to navigate the complexities of global markets in a rapidly evolving digital landscape. The interplay between technology and internationalisation will be a pivotal area of study, offering valuable perspectives on how firms can leverage digital tools to optimise their global strategies.

2.7 Summary

In summary, this chapter provides the context for China's OFDI by reporting data selected from statistics, official publications, literature, and other sources. The numbers and the literature indicate that the early stages of Chinese OFDI display unique traits. The fact that China was a relative latecomer in the OFDI market, and the active role performed by the Chinese government are two of the most distinguishing features of Chinese OFDI (Child & Rodrigues, 2005). The development of China's OFDI over time demonstrates that the country entered the industrialisation and globalisation scene late. Although Chinese companies can accelerate their development through the acquisition of foreign corporate assets and the use of borrowed technologies and knowledge, this penetration strategy may be limited by the lack of capital and liquidity in the Chinese economy (Li, 2014; Warner et al., 2004). Because of their late entry into the global economy, Chinese companies have a wide range of investment goals, from entering new markets to acquiring key assets, and they tend to undertake comparatively modest FDI projects.

It may indicate that Chinese managers' perspectives are influenced in uniquely by factors such as the late but rapid expansion, distinctive OFDI motivations, and inadequate governance practices in Chinese MNEs (Morck et al., 2008). To remain competitive, they are shifting their perspective from cost-oriented to time-oriented, where speed is a critical factor of success in providing maximum value with minimum cost (Chen et al., 2010). For this reason, scholars are calling for further research concerning the firm-level justification of China's outward FDI, for instance, the challenges of OFDI post-entry and implementation stages.

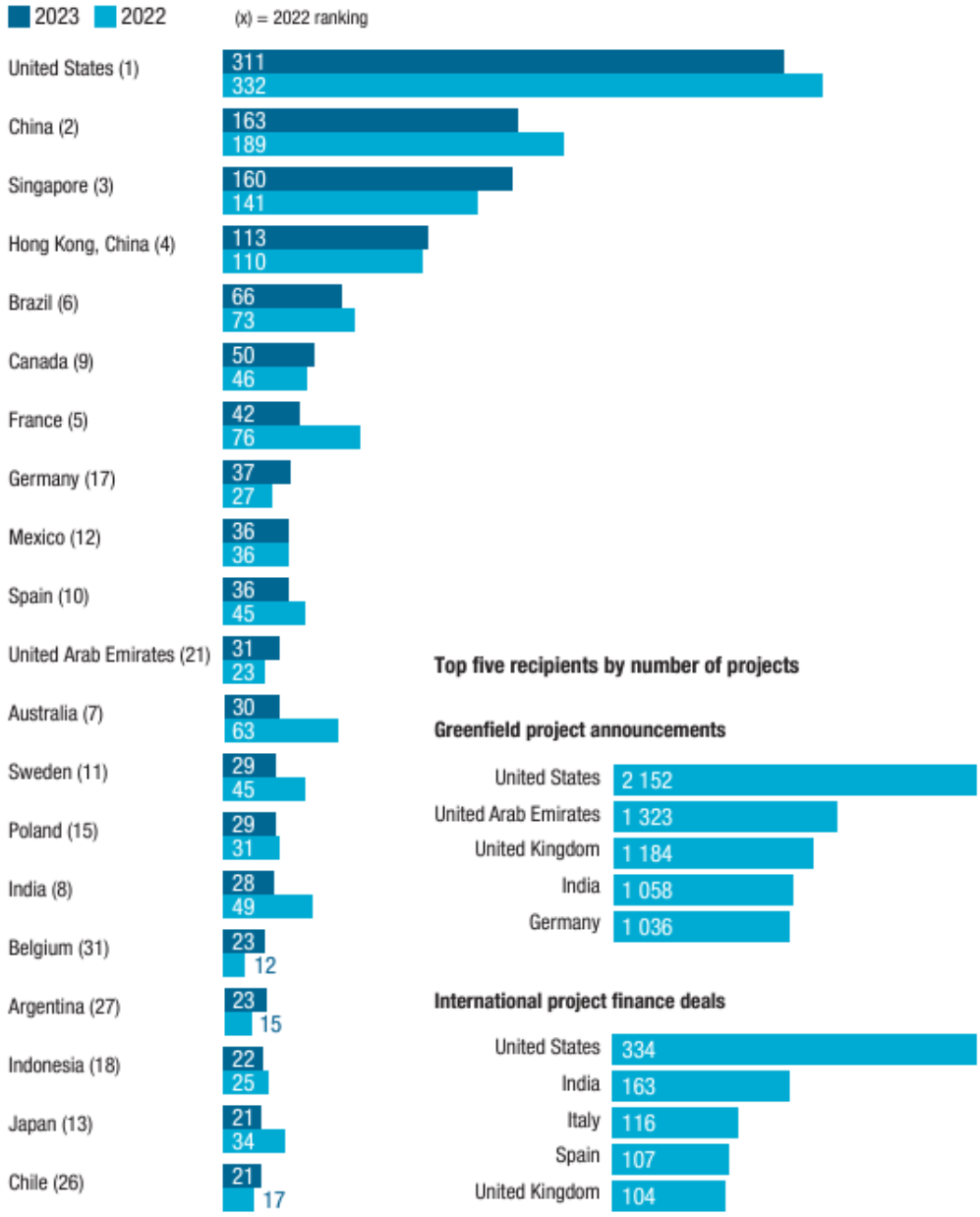
With the heightened of OFDI, China’s rapid economy growth comes with challenges. Technological advancements and innovation often depend on substantial energy consumption, resulting in carbon dioxide (CO2) emissions that contaminate the environment (Godil et al., 2021). Thus, one of the major challenges is environmental degradation (Ahmad et al., 2023). To counter this issue, China launched National Environmental Policies and Plans which emphasises ecological civilisation, green growth and carbon emissions control (Fu et al., 2023). China's regulation of the fast increase in operating carbon emissions from residential buildings is essential for attaining carbon neutrality by 2060 (Zou et al., 2023). Apart from that, digital industrialisation in China has advanced industrial digitalisation and decreased urban carbon emissions (Zhang & Du, 2025).

Moreover, China recognises that its rapid domestic expansion has outpaced the capacity of the domestic market to absorb its output, and views foreign markets (Gallagher & Qi, 2021), particularly through outward foreign direct investment (OFDI) as a strategic solution to address this imbalance. This approach not only helps alleviate domestic overcapacity but also facilitates the growth of Chinese firms through partnerships with global stakeholders, expanding their presence

and competitiveness in international markets. Despite the importance of the interaction of Chinese MNEs' with their geographically dispersed network partners, research into the factors affecting their digital technology adoption control and international performance have mostly been ignored. For instance, open resource advantage, linkage advantage, integration advantage, and managerial cognitions could be relating key factors influencing Chinese MNEs' internationalisation performance. Hence, contingent on these factors, this study focuses on how and when the associated factors moderate the relationship of internationalisation process and firms' international performance of Chinese MNEs.

Figure 2.1 FDI inflow - Top 20 host economies [5]

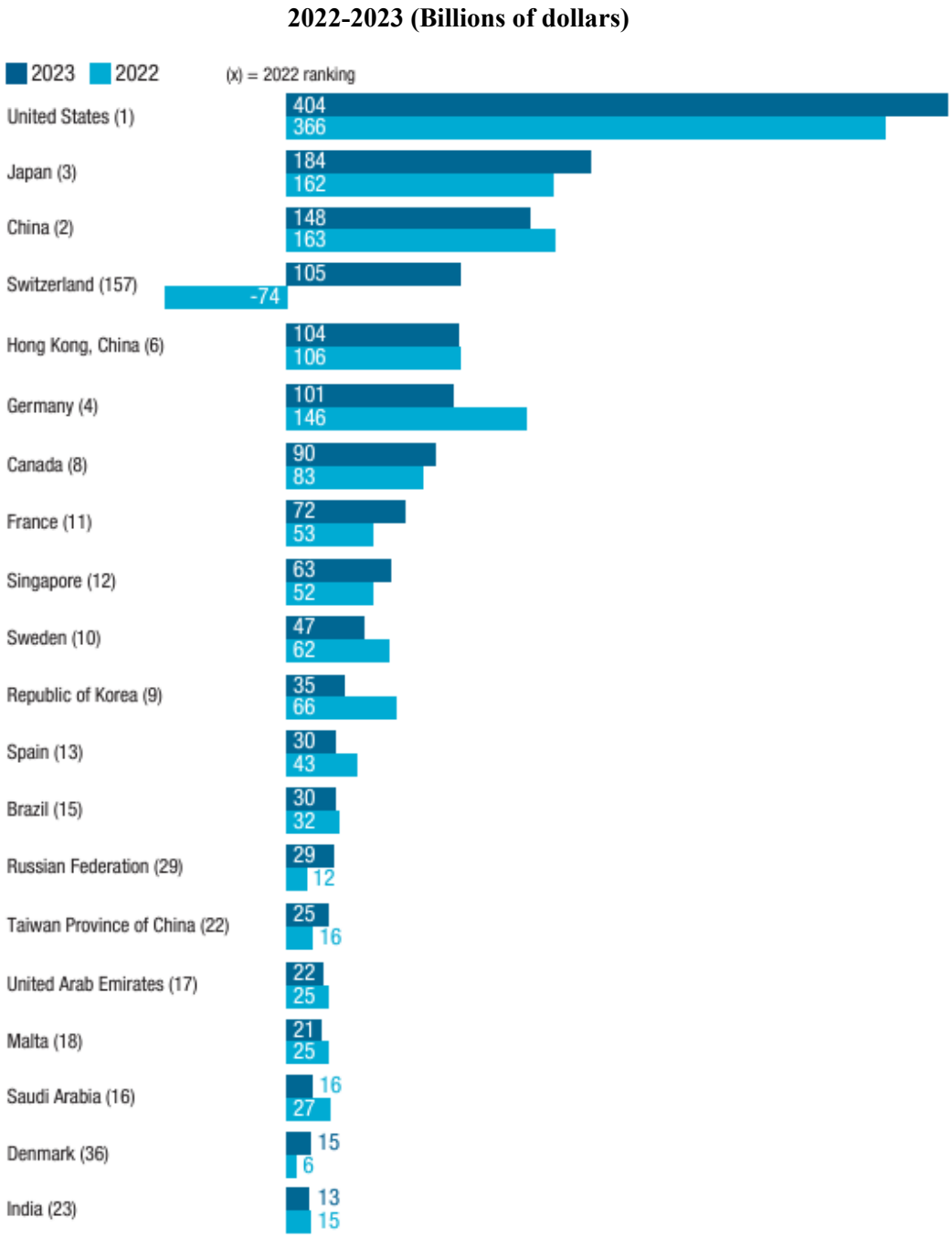
2022-2023 (Billions of dollars)



Source: (UNCTAD, 2024)

[5] The figure illustrates the FDI inflow - Top 20 host economies, accessible at: https://unctad.org/publication/world-investment-report-2024 (Assessed date: 20 February 2025)

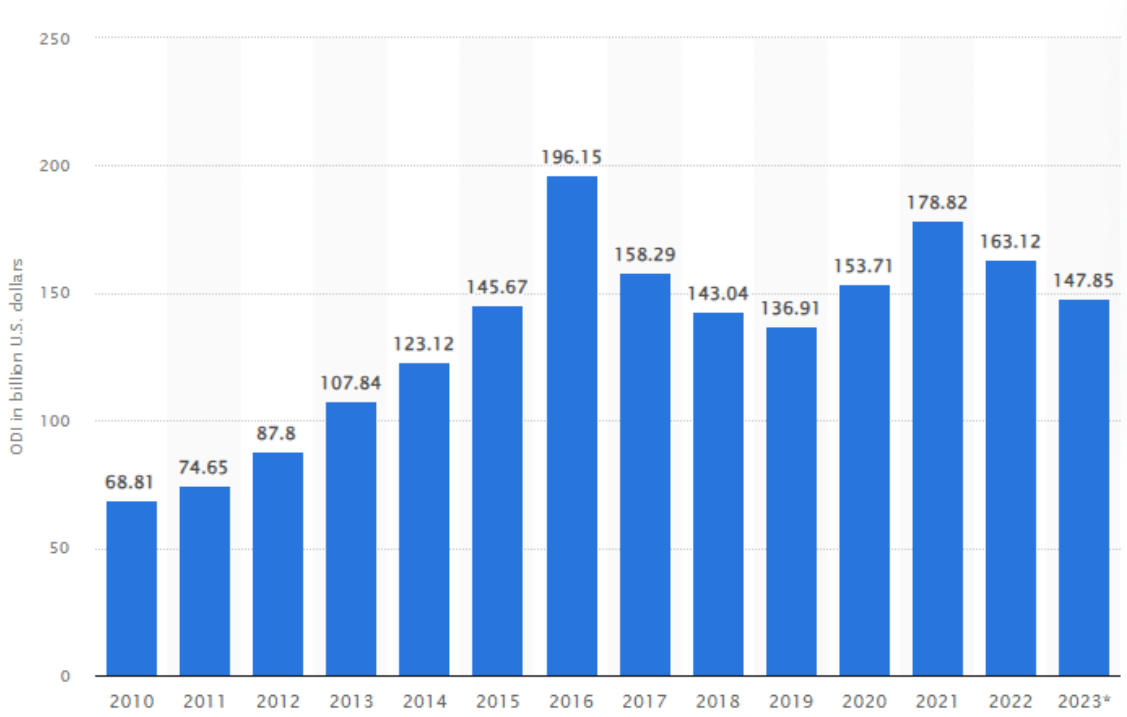
Figure 2.2 FDI outflow - Top 20 host economies [6]



Source: (UNCTAD, 2024)

[6] The figure illustrates the FDI outflow - Top 20 host economies, accessible at: https://unctad.org/publication/world-investment-report-2024 (Assessed date: 20 February 2025)

Figure 2.3 China's annual outflow of FD1 - 2010 to 2023 [7]



Source: (Statista, 2024)

[7] The figure illustrates the annual outflow of foreign direct investment (FDI) from China between 2010 and 2023, accessible at: https://www.statista.com/topics/5290/foreign-direct-investment-from-china/ (Assessed date: 20 February 2025)

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Chapter 3. Rethinking Internationalisation: Digital Strategies and Performance of Emerging Multinational Enterprises

Study 1

This paper has been accepted for presentation at the Academy of International Business Oceania (Adelaide, Australia) in 2023, with the title: *"Internationalisation, digital technology adoption, and international performance: Evidence from Chinese firm"*

Abstract

The digital economy and technological advancements have transformed the internationalisation strategies of emerging multinational enterprises (EMNEs), enabling them to compete with more established multinational enterprises (MNEs) from developed countries. However, despite the vast potential offered by digitalisation, organisations struggle to effectively leverage their data and resources to drive growth, often failing to fully capitalise on their digital strategies. This study investigates the relationship between digital technology adoption (DTA) and international performance in EMNEs. It aims to bridge a gap in the existing literature by exploring how EMNEs can employ digital resources and connectivity to enhance their internationalisation processes and improve their international performance. By adopting the new OLI perspective - Open Resource Access, Digitisation-enabled Linkage, and Digitisation-enabled Integration - the study found positive correlation between the new OLI advantage factors and international performance. It provides fresh insights into the strategic mechanisms that EMNEs, particularly for EMNEs in strengthening their competitive edge. Ultimately, the study seeks to offer valuable global strategies for value creation through DTA and explore how firms can build their specific strengths by better understanding and utilising their digital initiatives to enhance international performance.

3.1 Introduction

In an era where digital landscapes are rapidly evolving, along with the changing nature of competitive dynamics, how are emerging market firms catching up, globalising, or performing? For instance, in the telecommunications industry, Huawei, a firm that was established in 1987, managed to surpass its main competitor, Ericsson (i.e.; 144-year-old firm), in terms of the number of European patent citations (Joo et al., 2016). Thus, it can be assumed that the growing number of foreign patent citations plays a crucial role in Hua Wei's international presence and, hence, escalates its growth. Despite being an outsider in many countries, Huawei manages to overcome that liability by hiring offshore experts to advance their innovation capability (Schaefer, 2020). However, we do not fully understand how Huawei, a springboard firm, employs digital platform ecosystems to overcome their disparity from advanced-countries multinational enterprises (MNE), a phenomenon that is worth uncovering. As stated by Chabowski and Saimee (2020), there is little study on how digital technologies affect global business. Prior international business literature is focusing on mergers and acquisitions and strategic asset-seeking, aiming to obtain competitive advantages and accelerate the internationalisation process (Deng, 2007; Luo & Tung, 2007; Mathews, 2002). Hence, there is a paucity of international empirical research with an unaddressed question regarding how emerging multinational enterprises (EMNEs) leverage their internationalisation pursuits using digital platform ecosystems to impact firms' international performance. The question is: ***How important are digitisation enabled platform ecosystems for EMNEs', and what are the unconventional strategies that drive their international performance?***

Indeed, digital platforms and their associated ecosystems has created a new and potentially significant global environment for EMNEs (Fleury et al., 2024; Luo, 2021). These digital platform ecosystems enable EMNEs to create products and services that enhance their international performance, thus, advancing their internationalisation advantages (Nambisan et al., 2019). Building on the theoretical development of the new OLI perspective, this study demonstrates how digitisation can enable novel advantages (Luo, 2021). The study suggests that EMNEs use open resource access, digitisation-enabled linkage, and digitisation-enabled integration advantages as key strategic mechanisms and organisational platforms to strengthen their internationalisation efforts and improve their international performance. Through digital architecture, multinational enterprises can efficiently tap into global open resources, collaborate with international partners, engage with customers internationally, and coordinate internal organisational operations. EMNEs operate in a highly competitive business climate and sometimes lack international expertise. As a result, they need to promptly address any risks that may impact their globally distributed networks (Luo et al., 2021). The current development of digitalisation has taken on the role of how organisations strengthen their competitive edge to improve performance. Such digital technologies enhance the

centrifugal pressures that promote the distribution of the firm's high-knowledge activities (Luo, 2022b). Thus, there is a need for further study to clarify how EMNEs interact with their geographically distributed networks, particularly digitisation-enabled technologies.

This study provides a competency benchmark for organisations to implement practises to collaborate with their external ecosystem partners. According to Luo (2022b), the new global connectivity competency consists of three features working together; connectivity technologies, connectivity architecture and connectivity intelligence. Nevertheless, due to the constantly evolving nature of digital globalisation, EMNEs are actively searching for the most effective strategies to enhance the new global connectivity, enabling it to function synchronously. For EMNEs to fully leverage the advantages of global connectivity, it is essential to adopt openness, linkage, and integration in every aspect of its business functionality.

Besides, this new normal of internationalisation is under-researched and require modernistic strategies to complement the current practices. For instance, a firm's dynamic capabilities empower it to effectively combine, construct, and adopt both internal and external resources and competencies must effectively respond to and fulfil client needs within a continuously evolving business landscape in a globalised economy (Chatterjee et al., 2023). The notion of dynamic capacities has shown that under such circumstances, it is crucial to enhance internal technical, organisational, and management processes to efficiently identify and capitalise on possibilities (Björkdahl, 2020). This novel network-based framework is founded on the amalgamation of disseminating, exchanging, incorporating, and harnessing all accessible resources by diverse foreign entities for the benefit of the multinational enterprises via global networks (Luo, 2022b). If the network connectivity is adequately implemented, it will yield significant advantages for companies as a whole (Cantwell, 2014; Foss, 2005).

In addition, a study by Bhandari et al. (2023) found a curvilinear association between digitalisation and performance. Thus, the use of digital resources by EMNEs can be more comprehensively analysed by applying the new OLI perspective as a lens. However, there is a present of digital risk, which refers to the potential for volatility or disturbance created by the forces of digitisation in countries where EMNEs compete (Luo, 2022a). This risk can have a negative influence on the company's operations and requires further research. Furthermore, the relationship between digitisation and company performance has been recognised in business and management research as an important area for further exploration into digitalisation (Hanelt et al., 2021). Hence, this research proposes investigating the influence of EMNEs on internationalisation, using the new OLI framework to examine the correlation between the factors and international performance. Drawing on the findings of Hilmerson and Johnsson's (2016) and Vermeulen et al. (2002) studies, which concluded that when a company extends its presence in global markets, it produces curvilinear

relationship. This study is novel because it looks at how open resource access, digitally enabled linkage, and digitally enabled integration affect EMNEs that use digitally enabled resources to improve their international performance. The objective is to answer an important question: ***What are the relationships between the new OLI variables (open resource access, digitisation-enabled linkage, and digitisation-enabled integration) and international performance?***

Digitalisation is a versatile technology that has a similar impact as the steam engine and electricity, and it influences many areas of business and society (Autio et al., 2021). It is revolutionising the way companies structure themselves to create, deliver, and profit from value. The utilisation of digital resources and the benefits associated with company-level outward internationalisation have the potential to enhance business performance (Bhandari et al., 2023). Barnard (2021) argued that EMNEs are using a niche filling strategy want to reduce their reliance on skilled personnel. In order to accomplish this, they employ strategies that intentionally reduce the demand for human resources abroad, such as non-equity modalities or digital offerings, to enter high-income host nations. Thus, EMNEs often provide difficulties for existing theories, in which a perspective that considers the development and progression of the MNEs is crucial in the study of international business. This viewpoint is shown by the important phases of internationalisation approach put out by Johanson and Vahlne (Johanson & Vahlne, 1977; Johanson & Vahlne, 1990).

Therefore, IB literature does not adequately analyse the phenomena of how EMNEs are able to increase their speed and breadth of internationalisation via digital globalisation. The topic at hand is whether the new OLI perspective has relevant factors in the current age of digital globalisation. Studying the impact of digitisation and internationalisation on company performance is crucial because accurately scheduling and adapting investments in digital resources and expanding internationally is essential for attaining competitiveness (Deng et al., 2022; Shaheer & Li, 2020).

3.2 Contextual backgrounds

The internationalisation of enterprises, which denotes the process of expansion and development beyond one's home country, has been a significant global trend since the 1980s (Bell, 1996). The internationalisation of firms leads to the globalisation of the industries they compete in (Roth & Nigh, 1992). The effective management of interdepartmental relationships is increasingly vital for organisations to maintain competitiveness in the current global business environment (Porter, 1996). EMNEs engage in collaboration with select global competitors, suppliers, or distributors to enhance their performance by combining resources and jointly pursuing specific objectives in areas of mutual interest. This collaboration may involve activities such as improving industry standards, conducting primary research, sharing common resources, and raising consumer awareness. The aim is to enhance performance in certain areas while also striving to improve

performance in other areas (Luo & Tung, 2007). The study operationalises EMNEs utilising the identical definition as posited by Luo and Tung (2007). The definition emphasises three essential components: first, the imperative for companies to involve in outward foreign direct investment FDI; second, the company's capacity to effectively oversee its global operations; and third, the focus on value-enhancing activities during international expansion. The reasoning presented here is akin to that of Bonaglia et al. (2007), which suggest that EMNEs use disruptive technology as a means to overcome the inherent disadvantages faced by latecomers. EMNEs are actively pursuing novel techniques to enhance efficiency and performance via the implementation of value-adding activities in their operations. EMNEs have shifted their attention from asset-based growth to prioritising technology and network advantages. Nevertheless, previous studies were only focused on using technology, and future study on how EMNEs create value via their operations, particularly by leveraging digitisation-enabled resources, may potentially provide further understanding of firm-level strategies.

In a separate research, Sun et al. (2010) highlight the need of having a strong political connection for MNEs to achieve success in developing economies. While having a strong political connection is crucial, companies must actively acquire nonmarket resources in order to maintain their competitive advantages. Hence, in order to mitigate the disadvantage of being foreign, MNEs from developed nations must possess exceptional competence in a wide range of situations. Moreover, the fluctuating nature of political embeddedness in developing countries introduces volatility for long-term corporate endeavours. The viewpoint presented here is similar to that of Lou and Tung (2007), who assert that the distinctive benefits of flexibility possessed by EMNEs actively facilitate the internationalisation process. Because of the competitive nature of the business environment and their limited international expertise, EMNEs need to promptly address any risks that may impact their globally distributed networks (Luo et al., 2021). Further research should prioritise comprehending the market need for domestic firms, especially in the context of EMNEs and their geographically distributed networks. This research should specifically examine how these firms use digital technology and resources to boost their internationalisation process. This research aims to understand how springboard organisations use digital architecture technology to establish a new standard for internationalisation strategy.

In addition, springboard enterprises have a proactive approach to acquiring strategic resources and reduce the constraints imposed by their domestic institutions and market conditions (Luo & Tung, 2007, 2018). Apart from this, the view of springboard firms incorporates learning with the resource-based view; thus, their studies are mainly of quantitative method contributed 69% of the top eleven IB journals (Luo & Zhang, 2016). Out of the 69%, only 21.6% use survey data which indicate a paucity in research diversity. Hence, the qualitative research methodology is well-suited for understanding the correlation between formal and informal learning (Saunders et al., 2014).

Consequently, further research on causal inferences is needed to strengthen the springboard perspective and better connect theoretical insights with practical applications. This study seeks to use quantitative survey data to analyse the internationalisation process of EMNEs.

Moreover, this study complements the Eclectic Paradigm framework that proposed by Dunning (1977) and further developed by Dunning and Lundan (2008). It examines and evaluates the relationship of each new OLI variable and international performance of springboard firms, not to replace the Eclectic Paradigm but to complement to the classic model. Organisations are utilising external open resources to complement their internal assets and gain competitive advantages especially on the strategic orientation for innovation (Chesbrough, 2003; Chesbrough & Appleyard, 2007). In addition, as stated by Luo (2021), the linkage advantage theory suggests that MNEs gain advantages from the enhanced digital globalisation in terms of the quality of their linkages between firms and inside firms, as well as their connections to consumers international. Also, according to (Teece, 2014), the integration benefit not only addresses contractual issues but also enables the global firm to acquire knowledge and share technology and skills across borders. The study expands upon the results by investigating the process of internalising and coordinating the resources of digital technologies within the springboard enterprises. Luo and Tung (2007, 2018) found that these enterprises transfer their activities to overseas subsidiaries in order to gather strategic resources and overcome institutional and market restrictions in their home country. Thus, CBV is the appropriate theory to explain this new phenomenon.

3.3 Theory and hypotheses

The following sections clarify the development of conceptual frameworks and how each variable are chosen for the study. It continues to explain the development of hypotheses. The hypotheses are grounded in both theoretical and empirical foundations, drawing from previous research and identified gaps in the literature.

3.3.1 The new OLI advantages

The strategy of using digital connectivity to enhance global business in developing countries has rapidly increased in recent years (Barnard, 2021). Building on the idea that EMNEs are leveraging their strategic network partners to form strategic alliances, exchange business ideas, and compensate for their deficiencies in capabilities, this study advances the notion that EMNEs are using open access and digitisation-enabled technologies with the aim of strengthening operational efficiency and accelerating internationalisation. As EMNEs become more competitive, they seek ways to improve their operation through their value chains specific production activities.

Moreover, the arrival of the digital age has made it easier for many new corporate strategy abnormalities to appear (Menz et al., 2021). These include the introduction of new types of resources, such as data and information, which corporate strategies can leverage. Additionally, there have been advancements in strategy processes, such as open strategizing, and innovative approaches to organising, such as integrated organisation designs and virtual headquarters (Kunisch et al., 2020). Murthy and Madhok (2021) is formulating new ideas regarding the effective development of innovation, open-source, and information digital platform ecosystems. This is accomplished via a research study that examines the progression of digital platform ecosystems from their early stage, when value co-creation entails recruiting contributors with complementary skills, to the stage where platform sponsors, who are not acquainted with each other, are engaged. The researchers showed that when a platform sponsor chooses the scope of their platform, it sends a signal about the potential for value co-creation possibilities. This, in turn, draws both complementors and consumers, which bring significant impact on transaction costs for enterprises, hence, improve performance (Luo & Zahra, 2023; Menz et al., 2021).

Therefore, the relationships between open resource access, digitisation-enabled linkages, and digitisation-enabled integration with international performance are significant predictors and should be used for further examination. Furthermore, it is argued that globalisation enhances technological adoption by facilitating the transfer of foreign knowledge, thus, boosting international rivalry and improved performance (Skare & Riberio Soriano, 2021). This study posited that the favourable association between international performance and advantages derived from open resource access, digitisation-enabled linkages, and digitisation-enabled integration.

3.3.2 Open resource access

The emergence of digital technology and innovative business models is causing a profound transformation in the structure and function of the global economy. The increasing availability of open resource and the flow of intangible data and information are becoming characteristics of contemporary global business operations. These include advances in technology, the growing importance of digital infrastructure, the instantaneous global availability of knowledge and skills, the increased sharing of non-payment content and services, and the growing impact of small businesses on both economic and technological development (Nambisan et al., 2019). These changes necessitate a re-examination of strongly held assumptions about the global business environment and the improvement of theories of international business to better reflect this changing reality. Open resource access becomes the hallmark of modern disruptive business model. Barnard (2021) contested that any digital firms primarily operate within their own country, despite having an international stakeholders, usually having a location in higher income countries due to the low cost

of expanding. Those corporations were employing a niche filling technique to restrict the use of human resources overseas by utilising a digitised-enabled platform. Therefore, this study posits that a significant positive relationship between open resource access and international performance. Hence, the study hypothesises:

> **Hypothesis 1 (H1):** *Open resource access is positively associated with firms' international performance.*

3.3.3 Digitisation-enabled linkage

The intensity and scope of the linkages between a diverse array of actors within a single economy and between actors in other economies are the determinants of sustainable growth and innovation (Hirschman, 1958; Lall, 1992). new potential for cross-border trade has presented unique problems for both nations and businesses, as EMNEs have strengthened the linkages and interdependencies between the innovation systems in developing economies and established market economies (Anand et al., 2021). Within the confines of the innovation systems in which these companies are situated, businesses must reorganise their resources and create new internal strengths rather than merely replicating technology or organisational frameworks. It is now commonly acknowledged that the relationships that EMNEs build with businesses and organisations serve as the most effective conduit for the dissemination of skills, information, and technology. Clearly, linkage facilitates effective coordination and collaboration inside the EMNEs, enabling the efficient management of global tasks carried out by different foreign units (Luo, 2021). Prior literature by Powell, Koput, and Smith-Doerr (1996) contended that an interconnected system of external connections acts as a focal point for creativity by granting prompt access to knowledge and resources that would otherwise be inaccessible. In addition, Moore (2016) proposed centring his innovation ecosystem landscape around suppliers, component firms, and customers. Also, Zhang and Li (2010) introduced the concept of prominent organisations in a firm's external linkages. In this model, the primary issues that influence the performance of the firm within an innovation ecosystem are suppliers, both upstream and downstream, complementary firms, consumers, and competitors. This assume that multinational enterprises (MNEs) may prioritise cross-border connectivity to enhance global value chain connections, resulting in faster, larger, and more efficient operations. The paper argues that the extent of digitisation-enabled linkage coupled with the rate of internationalisation may potentially foster international performance. Therefore, linkages are an important strength for EMNEs to increase their international performance. Hence, the study hypothesises:

> **Hypothesis 2 (H2):** *Digitisation-enabled linkage is positively associated with firms' international performance.*

3.3.4 Digitisation-enabled integration

In the digital economy, corporations are now using digitalisation strategies to internationalise, instead of relying on classic factors such as site selection, entry mode choice, global integration, and FDI reasons. The correlation between these actions and the state of the country's digital economy highlights the significant impact on transaction costs for enterprises (Menz et al., 2021). For example, Amazon and Alibaba have distinct practices when it comes to stakeholders' connectivity. It is apparent that Amazon had approximately 1.525 million employees and generated 574 billion in revenue by the conclusion of 2023 (Statista, 2024a). This is because Amazon has opted to have significant control over its supply and distribution operations. In contrast, Alibaba Group, which operates under a similar business model, had only around 235,000 employees and earned 126 billion in revenue by the end of July 2023 (Statista, 2024b). Alibaba relies more heavily on its partners and suppliers to cater to its customers. When examining the ratio of workers to revenue between Amazon and Alibaba, which is 1:377,000 and 1:538,000 respectively, it is evident that there is a notable disparity in the strategies followed by the two companies. Unlike Walmart, which operates under a different business model, this company has a revenue of 611 billion and employs 2.1 million individuals (Statista, 2024c). Nevertheless, it has a much lower ratio of employees to revenue, at 1:290,000. Whereas Alibaba relies heavily on its partners and suppliers to provide for its clients, resulting in highest revenue per employee ratio among all three companies. Although, Amazon and Alibaba employ a comprehensive integration approach, they produce significant differences in ratio despite employing similar business model. The point brought forward in this paper is that digitisation-enabled integration is a crucial factor in determining the performance of international firms. Hence, given the rapid advancement of digital technologies and its significant positive impact on saving in transaction costs, this study proposes that digitisation-enabled integration has a positive relationship with international performance.

> **Hypothesis 3 (H3):** *Digitisation-enabled integration is positively associated with firms' international performance.*

3.4. Methods

An empirical investigation was undertaken to examine the hypotheses and substantiate the model. The survey consisted of a predetermined set of organised and standardised questions. The participants provided responses to the questions using a 5-point Likert scale, where the option of Strongly Disagree was assigned a value of 1 and the option of Strongly Agree was assigned a value of 5 (Likert, 2017).

3.4.1 Preparation of questionnaire

The collection of questions was produced based on existing literature, in the form of statements, with minor modifications made to suit the study's setting. Subsequently, six individuals with extensive expertise in multinational enterprises and scholars in international business were consulted to provide their insights on the enquiries. The questions were simplified based on the comments received to improve their clarity. This was implemented to ensure that the respondents had no obstacles in providing their responses. Following the pretest, the pilot test was carried out with a sample of 20 respondents who were chosen using purposive sampling. These participants were excluded from the primary survey. The examination of their reactions to the preliminary trial aided in further correcting the wording, structure, and format of some enquiries to improve their readability, comprehensibility, and inclusiveness. After undergoing a variety of corrective procedures, a total of 29 questions were ultimately determined.

3.4.2 Data collection

The survey study collected data from managers of Chinese multinational companies (MNEs) using purposive sampling, as outlined by Saunders (2015). The methodology included using data published by the Chinese Ministry of Commerce and the State-Owned Assets Supervision and Administrative Committee. These organisations are vital parts of the Chinese government's foremost legislative agencies that oversee and manage enterprises. The dataset can provide accurate information about the global prevalence and proportion of overseas sales for the purpose of classification. This research employs stratified sampling, as defined by Patton (1990).

Moreover, the data is gathered in two phases. Initially, the study proposes the act of dispatching an introductory request to participants by either Qualtrics survey software system or the WeChat application, accompanied by comprehensive information on the research. The electronic communication contains a participants-information-sheet eligibility requirement, and study surveys. The survey was sent to a minimum of 2000 stratified samples of Chinese multinational enterprises (MNEs) located in economically developed regions of China. In all, the study achieved a 15% response rate, which equals 296 responses, but a total of 58 respondents with incomplete data, mostly due to participants failing to complete the necessary questionnaires, with a remaining of 238 samples. To participate in the survey, the participants must meet specific criteria. The potential participants must agree to the screening requirements before proceeding to start the survey. They must possess substantial authority in shaping the firm's strategic growth; include managers or executives, such as Senior Manager, General Manager, Head of Marketing, Head of Human Resource, Department Head, Chief Technology Officer, Chief Executive Officer, Managing

Directors, Vice President, President, and any other high level executive positions. The chosen participant of the Chinese multinational enterprises (MNEs) must meet the criteria below:

i. working with a company must have global sales.
ii. working with a company must have global presence.
iii. The executives are required to have a position of influence inside the firm

3.4.3 Biases control

To address the possibility of common method bias, the study used several tactics throughout the survey development process. The questionnaire questions were created to conform with the guidelines proposed by Podsakoff et al. (2003). There were first composed in English and then translated into Simplified Chinese with clarity and conciseness. The translation was conducted by a proficient Chinese translator who is a native speaker. Subsequently, two Chinese PhD academics were enlisted to assist in revising the vocabulary of the items in the Simplified Chinese version. This was done to ensure the measures were suitable for the Chinese context and to reduce any potential understanding difficulties.

The survey was conducted in a random manner, with all main questionnaire items included. Separate questions were utilised to assess different constructs, which reduced the likelihood of items being embedded or connected and affecting respondents' evaluations (Podsakoff et al., 2003). Prior to commencing a pilot test, the author enlisted the assistance of two native Chinese managers to conduct a thorough accuracy assessment, particularly focusing on the expression of Chinese wordings. The questionnaire is subsequently revised and adjusted based on the recommendations of the two Chinese managers to better align with the characteristics of the target respondents. Subsequently, a pilot test was conducted again with two participants to evaluate the questionnaire. I revised the survey questions once again, considering the input received from the respondents. Subsequently, the I finalised the survey instruments for deployment.

Furthermore, rearranging questions of different magnitudes and concepts in a distinct order decreases the probability of common method variance (CMV). Respondents will have challenges in cognitively connecting relevant items and creating the required association to produce a biassed pattern of replies (Chang et al., 2010). Therefore, an alternative approach was used to reduce biases by using randomisation of question order with the help of Qualtrics survey software. This bias reduction approach was recommended by the editors of Journal of International Business Studies (JIBS) (Chang et al., 2010). It was used in the study by Barden, Steensma, and Lyles (2005) who performed temporal separation of measures, and deliberately adjusted the order of questionnaire

questions in their research. The methodological decisions were intended to minimise the possible effect of CMV on the connections among dependent, independent, and control variables (Chang et al., 2010). Furthermore, this research used an alternative research approach, as proposed by Chang et al. (2010), to mitigate the influence of common method variance (CMV) on the study design. This included meticulously developing and executing the questionnaire. Participants must be guaranteed the secrecy and privacy of the research, informed that there are no definitive correct or incorrect answers and encouraged to submit replies that are as truthful as possible. Furthermore, the researchers used more objective questionnaires thus, it reduced the likelihood to be correlated with CMV, as shown by Podsakoff et al. (2003).

T-test is performed on the data to assess non-response bias by comparing earlier and later replies. The groups' descriptive statistics are illustrated in Table 3.1. The findings of the independent sample t-test, as shown in Table 3.2, suggest that the null hypothesis, which posits that the group means are equal, cannot be rejected. The feedback between the early response group and the late response group is not statistically different, as shown by the non-significant t-statistics for dependent, independent, and moderating factors. Consequently, non-response bias is absent in the data, as shown by the negligible t-test findings, which assume that the late response group closely resembles the non-respondents (Armstrong & Overton, 1977).

Table 3.1 Group descriptive statistics for the early and late respondents (N=238)

Variables	Response	N	Mean	Standard Deviation	Standard Error Mean
International Performance	Early	103	3.47	0.781	0.076
	Late	135	3.51	0.845	0.072
Open Resources	Early	103	3.406	0.702	0.069
	Late	135	3.485	0.725	0.062
Linkage	Early	103	3.506	0.744	0.073
	Late	135	3.574	0.674	0.058
Integration	Early	103	3.485	0.707	0.069
	Late	135	3.441	0.805	0.069

Table 3.2 Non-response bias test results (earlier/later responses)

Variables	t	*df*	Sig. (2-tailed)
International Performance	-0.400	236	0.690
Open Resources	-0.838	236	0.403
Linkage	-0.737	236	0.462
Integration	0.440	236	0.661

Note: N=238

3.5. Modelling procedure

The research used hierarchical multiple regression analysis methods to examine the comparability and connection between variables (Lindner et al., 2021). In addition, this study uses a micro-level analysis to investigate the correlation between the variables. Therefore, I verify the assumptions by using the identified variables. In addition, this study uses a micro-level analysis to investigate the correlation between the variables. The findings of the study were examined via three essential stages. Initially, the descriptive statistics and reliabilities of the scale were calculated, and the value of Cronbach's alpha was provided. The Pearson Product moment correlation was used in the second phase to assess the association between open resource, linkage, integration, and international performance. The third phase included doing a hierarchical regression analysis to evaluate the relationship between open resource, linkage, integration, and international performance.

3.5.1 Measurement of open resource

The measurement of open resource was adapted from a previously validated measurement used by Cheng and Huizingh (2014) which measure open innovation. The activities scale has 12 items reflecting the three dimensions (five for outside-in activities, four for inside-out activities, and three for coupled activities). Literature review suggests that open innovation is part of the open approach; thus open innovation activities result from open resource initiatives (Chesbrough & Appleyard, 2007).

3.5.2 Measurement of linkages

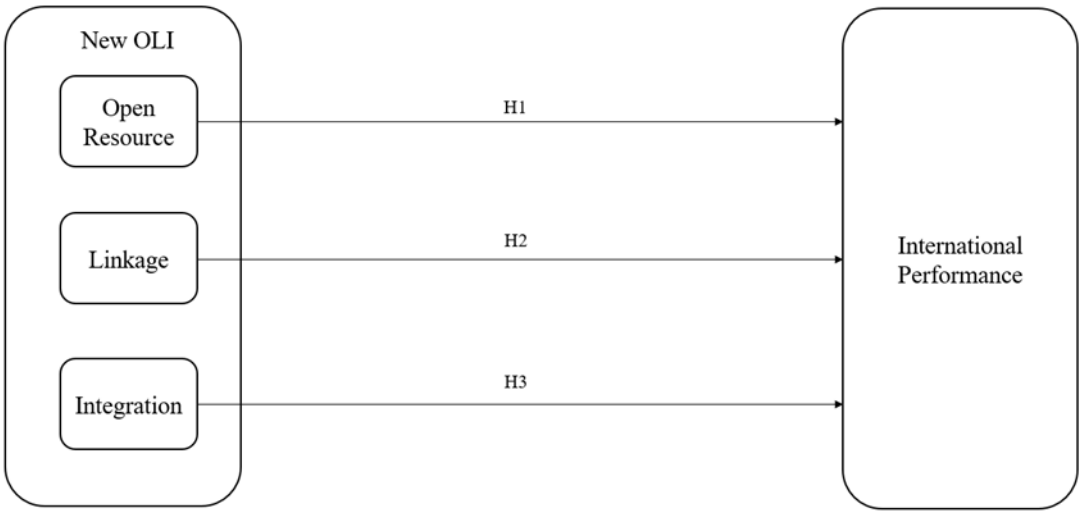
The research follows the study conducted by Mei et al. (2019), and it categorises the external linkages that an EMNE has with its partners in an innovation ecosystem into one of two categories: the linkages of an EMNE with its Prominent Organisations (LPO), and the linkages of the EMNE with its Service Intermediaries (LSI). There are four items in each construct, which sums up to eight items.

3.5.3 Measurement of integration

To determine the level of integration, the study uses a validated measurement of information-based mode derived from the work of Kim et al., (2003). Respondents were given a five-point Likert-type scale and asked to rate the extent to which each mode was utilised to facilitate global integration,

with 1 representing "not used at all" and 5 indicating "used extensively (Likert, 2017)." In all, the construct consists of five different items.

Figure 3.1 Conceptual Framework



3.5.4 Measurement of international performance

Following Riviere and Romero-Martínez (2021), Li and Atuahene-Gima (2001), and Ghauri et al. (2016), international performance is a subjective measure of performance in terms of management satisfaction with sales expansion and firms' financial performance. Respondents rate their level of satisfaction with the company's year-over-year revenue growth, profit growth, net income, and financial performance relative to rivals during the preceding three years on five-points Likert scales, 1 for “strongly disagree” to 5 for “strongly agree” (Likert, 2017). There are four items for reflecting the measurement of international performance.

3.5.5 Control variables

To minimise the influence of extraneous factors on the research enquiry, I included the variables of firm size and industry type into the study. These pertain to the extent of the new OLI variables comes from local stakeholders, firm size, and industry classification. Previous research has demonstrated that these variables can impact an internationalising firm's learning capacity and international performance (Barkema et al., 1996; Yeoh, 2004; Zahra et al., 2000). In addition, the study also controls the position titles, tenure, length of employment and education level of

executives. These measures ensure that the observed results cannot be attributed inadvertently to variables other than the independent variables.

Firm Size (total employee) – Given the challenges in accessing financial data from Chinese enterprises, the studies account for company size by considering the number of employees (Brouthers & Xu, 2002; Zhang et al., 2016). It helped to prevent problems with multicollinearity in hypothesis testing and to adjust for the initial amount of resources controlled by these Chinese MNEs. The firm size data comprises categorical variables, wherein the number of employees is classified on a scale of 1 to 4, denoting the range from less than 250 to more than 10,000 employees.

Percentage of foreign employees - The proportion of international employees in foreign branches is used to measure the multinational nature of EMNEs, particularly in terms of expanding their presence in other markets. This indicates that diversification may impact the same performance metrics as, or lessen the performance consequences, as stated by Kim, Hwang, and Burgers (Chan Kim et al., 1989). Furthermore, as stated by Kim et al., (1989) it specifically tackles the challenges related to the utilisation of strategic resources across different areas of operation and the effective management of transactions, whether they occur inside a single organisation or beyond national borders. The extent of engagement and reliance on multinational enterprises' (MNE) operations abroad is likely to influence their international performance. Increased engagement and reliance on foreign activities may be a reliable sign of improved international performance (Geringer et al., 1989).

Industry - The studies follow Zhang et al. (2016) in categorising the industries to four categories. Autio, Almeida, and Sapienza (2000) incorporated industry dummies into their study to address the potential variability in foreign market opportunities across different industries, which may affect firms' exposure to such opportunities. The research employed a 2-digit ISIC 4 for the purpose of coding all firms included in the sample. This approach yielded a total of 18 industry classifications, which are presented in Table 3.3. The study categorised the industries into ten groups, namely textiles and apparel, chemical, rubber, and plastics products, fabricated metal products, machinery, and equipment, computer, electronic, optical products, industries in food products, leather and related products, motor vehicles, trailers, and semi-trailers, other transport equipment, and paper products, printing, and reproduction of recorded media, coke and refined petroleum products, pharmaceutical products, and others (Zhang et al., 2016). As a result, ten dummy variables were generated to represent the industry.

Table 3.3 Industry categories [8]

Category	Industry		Percentage (%) N=238
1	Textiles and wearing apparel		15.0
2	Chemical, rubber, and plastics products		13.3
3	Non-metallic mineral products, fabricated metal products, except machinery and equipment		7.1
4	Computer, electronic and optical products, electrical equipment, machinery, and equipment		20.0
5	Leather and related product, coke, and refined petroleum products, and		11.3
6	Motor vehicle and transport equipment		13.8
7	Pharmaceutical products,		3.0
8	Printing and reproduction of recorded media, paper		9.1
9	Food products		5.3
10	Other categories		2.1

Position Title **-** The research control for the employee's position (Bernerth & Aguinis, 2016) within the businesses since this factor has the potential to impact resource utilisation and, therefore, international performance. Managers play a pivotal role as the primary decision-makers, and their position and degree of responsibility within the organisation are vital for the success of its operations.

Tenure and employment of executives **-** Years of position held was controlled by the relationship between executives' tenure and their dedication to organisational tasks and decision making, and how this relates to international performance (Siders et al., 2001). Research by Sider et al., (2001) reveals that tenure has a substantial impact on the majority of performance indicators. Overall, there was a favourable correlation between tenure and growth rate, market share, and business performance.

Education-level diversity **-** Following Smith et al. (1994) approach, the research controlled for education-level diversity by converting the responses on highest degree into years of formal education. The coefficient of variation was then calculated for each participant to determine the amount of education diversity.

[8] The industry categories are adopted from:
Zhang, X., Ma, X., Wang, Y., Li, X., & Huo, D. (2016). What drives the internationalisation of Chinese SMEs? The joint effects of international entrepreneurship characteristics, network ties, and firm ownership. International business review, 25(2), 522-534.

Speed of Internationalisation (SOI) – The study controls firms' international orientation by using the speed of internationalisation, where speed is calculated by the length of time the firm has been internationalised since its inception (Hilmersson & Johanson, 2016). The measurement of the speed of internationalisation, as per Reuber and Fischer (1997) and Zahra et al. (2003) was conducted by determining the duration (in years) between the year of establishment of the firm and the year of its initial international undertaking. The model is constructed by using the new OLI perspective constructs as predictors and international performance as the dependent variable.

3.6 Results

Table 3.4 illustrates the reliabilities of variables used for this study. The reliability of the open resource, linkage, integration, and international performance was in an acceptable range, as shown by the Cronbach Alpha's values of 0.82, 0.77, 0.72, and 0.70 respectively (Kaplan & Saccuzzo, 1982; Murphy & Davidshofer, 1988; Werner et al., 1996). To validate the accuracy of the data and establish the absence of outliers, it is necessary for the actual range to fall within the possible range.

Variance inflation factors (VIFs) were computed as part of the research to look for multicollinearity. There was no sign of multicollinearity since the greatest VIF score (3.7) was much below the widely accepted threshold value of 10 (Hair, 1998). Nonetheless, the inclusion quadratic effects in the regression models may result in multicollinearity. Therefore, the corresponding variables were mean-centred as suggested by Aiken and West (1991) before producing the quadratic and interaction terms. By using this method, exploratory variables and their quadratic terms experience less non-essential ill conditioning (2013).

Table 3.4 Descriptive statistics and reliabilities of study variables

					Ranges	
Variables	*K*	α	M	SD	Potential	Actual
Open Resource	10	0.82	34.51	11.36	10-50	19-49
Linkage	8	0.77	28.36	8.96	8-40	16-39
Integration	5	0.72	17.32	5.51	5-25	9-25
International Performance	4	0.70	14.01	4.533	4-20	6-20

Note. M=Mean; SD=Standard Deviation; k = No. of items*; α = Cronbach alpha; (N=238)*

Table 3.5 displays the factor loading, which is a statistical metric used in factor analysis to reflect the strength of the relationship between an observable variable in this research and a latent variable. The unidimensionality of each concept was assessed by analysing the composite reliability for measurement reliability, comparing the average variance extracted with the shared variances at the construct level for discriminant validity, and assessing the standardised loadings for convergent validity. The findings of the confirmatory factor analysis (CFA) indicate that majority of loadings were over 0.5 and statistically significant ($p<0.05$). Based on the findings of Fornell and Larcker (1981), if the average variance extracted is below 0.5, but the composite reliability is over 0.6, the concept still demonstrates sufficient convergent validity. This suggests a satisfactory degree of convergent validity.

Table 3.5 Factor loading

Item summary	Standardised Loadings	Cronbach's Alpha
Open Resource Advantage		0.82
1 - All our innovation initiatives include consumers, rivals, research institutions, consultants, suppliers, government, and universities	0.54	
2 - Our innovation programmes rely heavily on external partners including consumers, rivals, research institutions, consultants, suppliers, government, and universities.	0.74	
3 - Our company acquires R&D services from customers, rivals, research institutions, consultants, suppliers, government, and universities.	0.58	
4 - Our firm acquire patents, copyrights, and trademarks from external partners for our innovative initiatives.	0.78	
5 - Our firm often sells licenses, such as patents, copyrights, or trademarks, to other firms so as to better benefit from our innovation efforts.	0.62	
6 - Our firm often offers royalty agreements to other firms to better benefit from our innovation efforts.	0.72	
7 - Our firm strengthens every possible use of our own intellectual properties so as to better benefit our firm.	0.72	
8 - In innovation projects, our firm usually integrates all internal and external partners' information.	0.58	
9 - In innovation projects, our firm coordinates the activities of exchange of information among partners.	0.73	
10 - In innovation projects, our firm keeps internal and external partners updated about new information.	0.70	
Linkage Advantage		0.77
1 - Competitors	0.68	
2 - Suppliers for components	0.69	
3 - Primary users and customers	0.74	
4 - Complementors	0.78	

5 - Universities	0.69	
6 – Research institutes	0.65	
7 – Government agencies	0.76	
8 – Complementors	0.72	
Integration Advantage		0.72
1 - Internationally interconnected computer systems	0.60	
2 - Internationally electronic communications system	0.71	
3 - Internationally interconnected information system	0.76	
4 - Internationally integrated software applications – Application Programming Interface (API)	0.68	
5 - Informational databases to be shared internationally	0.78	
International Performance		0.70
1 - Our international market financial performance has been exceptional.	0.78	
2 - Our international financial performance has exceeded that of our competitors.	0.77	
3 - The growth of our international sales has been exceptional.	0.70	
4 - Our sales expansion in international markets has surpassed that of our competitors.	0.72	

Note. Factor loading >.54, a= Cronbach's alpha

Table 3.6 (Appendix 3) displays the correlation matrix and descriptive statistics using Pearson Product Moment correlation method. The percentage of foreign employees is positively correlated with both open resource advantage ($r = 0.13$; $p < 0.05$) and linkage advantage ($r = 0.14$; p-value < 0.05). Firms with a higher percentage of foreign workers, which indicates their international presence, tend to have higher open resource and integration advantages. This outcome implies that such companies must maintain their concentration and efficiently use international assets to generate advantages that are unique to their organisation (Verbeke & Hutzschenreuter, 2021). Also, there is a clear and strong positive relationship ($r = 0.64$, p-value < 0.001) between open resource and international performance. A strong positive correlation was seen between linkage ($r = 0.53$, p-value < 0.001) and integration advantages ($r = 0.51$, p-value < 0.001) with international performance. Regarding executive tenure, the analysis result revealed a significant positive association ($r = 0.74$; p-value < 0.001) between the duration of employment and the duration of the present position. This indicates the important impact of the executives' function on their duration. Despite the inclusion of these variables in various models, their correlations do not result in multicollinearity.

A hierarchical regression analysis was performed to investigate the proposed relationship shown in Figure 3.1. The analysis included independent and dependent variables. Data sources were gathered by employing questionnaire randomisation procedures to prevent potential common method variation (Barden et al., 2005). The analysis controlled for variables such as firm size,

percentage of foreign employees, industry type, position title, year of position held, year of employment, and education level. The study's results are shown in Table 3.7 (Appendix 3). The discussion covers the outcomes derived from all the models used to examine the hypotheses.

The variables included in Model 1 were the independent variables, dependent variables, and control variables. The first model accounted for 3.50% of the variation in international performance, with a F value (7, 230) = 1.17 and a p-value = 0.317. In this model, the proportion of foreign personnel was shown to be a significant positive predictor of international performance (b = 0.109, p-value = 0.047). Model 2 accounted for 44.5% of the variation in international performance, as shown by a F value (8, 229) = 22.98, and a p-value 0.001. Open resource had a significant impact on international performance; (b = 0.756, p-value < 0.001).

The Model 3 accounted for 45.9% of the variation in international performance, as shown by the F (9, 228) = 21.52, p-value < 0.001. Open resource advantage strongly predicted international performance (b = 0.623, p-value < 0.001). Linkage advantage had a significant impact on the international performance at b=.196, p-value < 0.05.

Model 4 accounted for 46.7% of the variation in international performance, as shown by a F (10, 227) = 19.87, resulting in a p-value < 0.001. All three predictors of international performance had significant predictions, with a regression coefficient of the followings: open resource = 0.56 and a p-value < 0.001, linkage = 0.145 and a p-value < 0.1 and integration = 0.131 and a p-value < 0.1.

Overall, based on the result of analysis of variance (ANOVA), all the regression models except Model 1 (in which only control variables are entered) are statistically significant and good fit for the data. Model 2, 3 and 4 examines the direct correlation between the predictors, demonstrates positive correlations between the variables and international performance, yielding a statistically significant outcome.

To summarise, the tests conducted using the dataset demonstrate a significant level of consistency with the conclusions outlined in Table 3.7 (Appendix 3). As part of a robustness examination, the research examines if there is a normal distribution of errors. The histogram in Figure 3.2 (Appendix 3) displays data that have a normal distribution, since the bars representing the frequency of errors typically conform to the shape of a normal curve. In addition, the residuals plotted on a P-P plot illustrates in Figure 3.3 (Appendix 3) conform to the 45-degree line. Both the histogram and the P-P plot show no evidence of a violation of the normality assumption (Sarstedt et al., 2019). Finally, the study shown a Durbin-Watson statistic of 2.0 which is a good sign in regression analysis, indicating that the residuals are not autocorrelated and that the regression model's assumptions about the independence of errors are likely met (Ali & Sharma, 1993). This enhances the reliability and validity of the model's statistical inferences.

3.7. Discussion

EMNEs have internationalised at a faster rate that contended by prior international business theories (Guillén & García-Canal, 2009; Madhok & Keyhani, 2012; Mathews, 2002). This EMNEs characteristic has challenged existing theories (Mathews, 2006) and inspired newer explanations that incorporate economic contexts (Ramamurti, 2012). In addition, with the rapid changes in the global environment, EMNEs have found numerous ways to reduce their liability (i.e., liability of foreignness) due to internationalisation (Lu et al., 2022; Zaheer, 1995). This may be accomplished by using firm-specific digital resources relevant to gain a competitive edge, thereby strengthening international performance (Verbeke & Hutzschenreuter, 2021). Nonetheless, globalisation comes at an increasing cost. For instance, as the number of foreign personnel increases, it increases the liabilities related to internationalisation, which may have a detrimental effect on the firm's ability to access and integrate open resources access and take advantage of integration benefits (Marano et al., 2020). However, firm-specific advantage (FSA) that support digital platforms has its benefit because the ecosystems are not limited to a certain region and may be deployed internationally. Thus, open resource access to digital platforms greatly mitigates the challenges associated with the cost of internationalisation and, thereby, promotes the global expansion of both the EMNEs and their ecosystem partners. (Verbeke & Hutzschenreuter, 2021). This research argues that the availability of open resources access via digital platform ecosystems enhances the classic theory of ownership, hence augmenting the international growth plans of EMNEs. The study's results also show that the speed of internationalisation, as a control variable, is not a major factor in EMNEs' internationalisation strategies. To confirm this claim, interactions using speed as a moderator to test the impact on all three predictors found no significant results. Thus, to improve international performance, the focus should be on using open resources more effectively, strengthening digital connections, and improving digital integration. The emphasis on employing these advantages, as well as considering their ownership and control, location selection, and implementation of an internalisation strategy, suggests that EMNEs could develop innovative methods or approaches for expanding internationally (Nambisan et al., 2019).

To learn more about linkage advantage as a predictor in this study, its function comes from better connections between and within firms, as well as better relationships with international stakeholders made possible by more advanced digital connectivity (Luo, 2021). Firms can translate enhanced resource selection and configuration into better firm performance via firm-level digitalisation, which is driven by the availability of digital network resources (Gulati, 1999). Thus, this nexus to the concept of integration advantage which suggests that increased connectedness or digitisation-enabled linkages, resulting from digitisation-enabled forces and international digital connections, promotes efficiency in international operations (Carnes et al., 2022). In addition, the

duration of relationships and the number of linkages with trusted partners might strengthen firms' global value chain networks (Verbeke, 2020). Nevertheless, the speed at which EMNEs expand internationally does not have any significant effect on the relationship between the digitisation-enabled linkages advantage and the firms' international performance. This indicates that firms that are using digitisation-enabled linkages to enhance their interconnections will likely establish their global value chain without considering locales as a criterion. Therefore, this research argues that this new strategy complements the conventional eclectic paradigm theory of location, which asserts that EMNEs should evaluate if there is a relative benefit in carrying out certain operations in a given country.

The key argument here is that the evolving nature of the business environment compels modern firms to include digitisation-enabled technology into their operations. While the classic OLI framework asserts that relative location advantages are a key factor in a firm's choices to engage in foreign direct investment (FDI), this study contends that enterprises are utilising their resources to bolster the digitisation-enabled ecosystem in order to boost their competitive advantage. As the study finds that speed of internationalisation is not a matter of significance, firms can expand greatly by increase their global clients and end-users spending on the specific digital resource. Digitisation-enabled platforms provide a significant pre-existing customer base and effective means to directly market to them and launch new products (Luo, 2021). Therefore, the benefit of digitisation-enabled linking supports firms'' strategy of FDI, resulting in an influence on the choices of entry modes for EMNEs.

Moreover, according to Teece (2014) and Luo (2021), digitised-enabled integration has the potential to enhance the speed of business transactions, particularly in terms of information sharing. This can lead to improved compatibility in business operations and mitigate the risk of stakeholders resisting change (Bailom et al., 2007). Underpinning to the claims, this study shown that digitisation-enabled integration has positive significance relationships with international performance. Thus, digitally enabled integration may improve business interactions, though, its effects from internationalisation speed are negligible. These results suggest that EMNEs should reassess their strategy for entering international markets, especially in terms of resource allocation and addressing internalisation concerns. Furthermore, the importance of the speed of internationalisation has decreased, resulting in it being less of a central emphasis. As a result, EMNEs are encouraged to heighten their dynamic capability within technologically advanced digital ecosystems. Finally, the integration of digital technology is a global occurrence. As a result, emerging market MNEs can take advantage of this phenomena to establish a global value chain by collaborating with stakeholders from different geographical locations.

This study diverges from previous research on speed, since most studies have shown rapid internationalisation leads to increased performance growth (Luo & Tung, 2007; Mathews, 2006). Whereas in other studies, the link between internationalisation speed and firm performance is non-linear and situational (Bhandari et al., 2023; Chang & Rhee, 2011; Hilmersson & Johanson, 2016). Besides, previous research did not adequately include the dynamic transformations of the digitisation-enabled technology ecosystem, which significantly alter the playing field of internationalisation strategy. Therefore, when considering the new OLI perspective, this study offers a way to address differing opinions on the connection between conventional internationalisation strategies and the firms' international performance.

3.8. Conclusion

Through this investigation, the literature evaluation of this study has discovered that previous research has shown a favourable relationship between the usage of digital platform ecosystem and international performance. The research also discovered that there are certain aspects in the environment that may affect the relationship between open resource access, digitisation-enabled systems, and performance. Additionally, the shape of the digitisation-enabled function itself is an area that shows potential for additional investigation. Perhaps several moderators might give insights on the links, and it is possible that a quadratic or cubic model may provide a more accurate explanation for the relationship (Chetty et al., 2014).

Access to open resources greatly boosts international performance, in addition, the benefits of digitisation-enabled linkages and integration strengthening the models with significance results. The outcome from the study indicates that open access to resources, digital enabled linkage and integration are adding advantageous in magnifying the beneficial impact of EMNEs' international performance. The result shows that open resource access is perhaps the most significant factor among the three predictors. These variables influence enterprises' decision-making on resource allocation and how they use their capabilities. Furthermore, these practical contributions made by the firms may also be used to assess their internationalisation strategies.

Differing from the digital age, EMNEs expand their operations internationally in alignment with the eclectic paradigm theory. The primary objective is to enhance the dynamic potential and effectively use all existing resources via creative composition. However, the advent of the digital era has brought about digital access to many platforms, which encourages new methods of creating resources that are publicly accessible, as opposed to seeking external resources, market seeking, and efficiency seeking. This novel approach has transformed the capacity of companies to adapt and respond to changing circumstances. Instead of prioritising infrastructure, skilled labour, and market

prospects, the emphasis is now on acquiring access to open resources and boost up the digitisation-enabled systems. The question is: are EMNEs reconsidering their internationalisation strategies in this digital era? This research conclusively demonstrates that each OLI variable has a substantial influence in the context under study. Moreover, the inclusion of other predictor variables in the regression analysis do not enhance their effect on international performance. Future study should explore context factors such as industry-specific emphasis, location-specific focus, and firm-level dynamic capacity focus. Like many other surveys study, low response rates are one of the limitations, that might diminish the representativeness and reliability of the sample. Additionally, since this research collects data from participants online, it is subject to some limitations. Drawbacks include the lack of assurance over the accuracy of the data and challenges related to sampling, as well as possible problems regarding the design and execution. The inadequate sample data may result in biassed selection and hence lead to drawing inaccurate conclusions.

Finally, while this analysis primarily examines Chinese enterprises, it is crucial to recognise that there are substantial variations in the institutional context across developing economies. Hence, future studies need to investigate alternative developing market environments, such as India, Brazil, and Korea, in order to ascertain the consistency of the results across diverse emerging market situations. Given the extensive evidence of differences within developing markets (Estrin et al., 2017; Hoskisson et al., 2013), doing more study in other emerging countries is expected to provide fresh perspectives on proactive internationalisation.

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Appendix 3

Table 3.6 Descriptive statistics and correlations of control variables and study variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12
1.Total Employees	2.72	0.82	-											
2.Percentage of Foreign Employees	2.92	0.82	0.55****	-										
3.Industry Type	9.33	5.44	0.06****	0.45****	-									
4.Position Title	2.63	1.08	-0.25****	-0.28****	-0.04	-								
5.Year in Position Held	7.77	5.97	0.51****	0.41****	0.01	-0.36****	-							
6.Year of Employment	9.27	6.48	0.46****	0.40***	-0.01	-0.47****	0.74****	-						
7.Education Level	5.61	0.92	0.315****	0.273****	-0.02	-0.28****	0.02****	0.314****	-					
8.Speed of Internationalisation	11.05	8.47	0.02	-0.084*	0.15***	0.05***	-0.12***	-0.09*	-0.12**	-				
9.Open Resource Advantage	34.51	11.36	0.88*	-0.13***	0.06	-0.10**	0.21****	0.21	-0.08****	-0.12*	-			
10.Linkage Advantage	28.36	8.96	0.11**	0.14***	0.02	-0.10***	0.22****	0.24****	0.12*	-0.13**	0.70****	-		
11. Integration Advantage	17.32	5.51	-0.02	-0.07*	-0.09*	0.12**	-0.02	-0.006	0.14	-0.37****	0.28****	0.29****	-	
12.International Performance	14.01	4.53	-0.02	0.10**	-0.01	0.01	-0.04	-0.04	0.07	-0.08*	0.64****	0.58****	0.51****	-

Note. *. p < 0.1; **. p < 0.05; ***. p< 0.01; ****. p< 0.001, N=Sample, M=Mean, SD=Standard Deviation; (N=238)

Table 3.7 Hierarchical regression to show the predictors of international performance

DV: International Performance (N=238)	Model 1	Model 2	Model 3	Model 4
Control Variables				
Total Employees	-0.156*	-0.110*	-0.109*	-0.116*
Percentage of Foreign Employees	0.162**	0.124**	0.121**	0.119**
Industries Type	0.00	-0.007	-0.007	-0.006
Position Title	0.056	0.050	0.048	0.044
Years Position Held	0.005	-0.006	-0.006	-0.006
Years of Employment	0.004	-0.007	-0.009	-0.009
Education Level	0.067	0.062	0.055	0.064
Speed of Internationalisation	-0.005	0.002	0.002	0.003
Independent Variables				
Open Resource Advantage		0.758***	0.621***	0.566***
Linkage Advantage			0.198**	0.145*
Integration Advantage				0.135*

Model fit				
N	238	238	238	238
R^2	0.035	0.446	0.460	0.468
Adjusted R^2	0.004	0.424	0.436	0.442
F Value	1.11	20.35^{***}	19.32^{***}	18.05^{***}

Note. *. $p < 0.1$; **. $p < 0.05$; ***. $p < 0.01$; ****. $p < 0.001$, N=Sample, M=Mean, SD=Standard Deviation

Figure 3.2 The histogram of errors of a standardised residual distribution

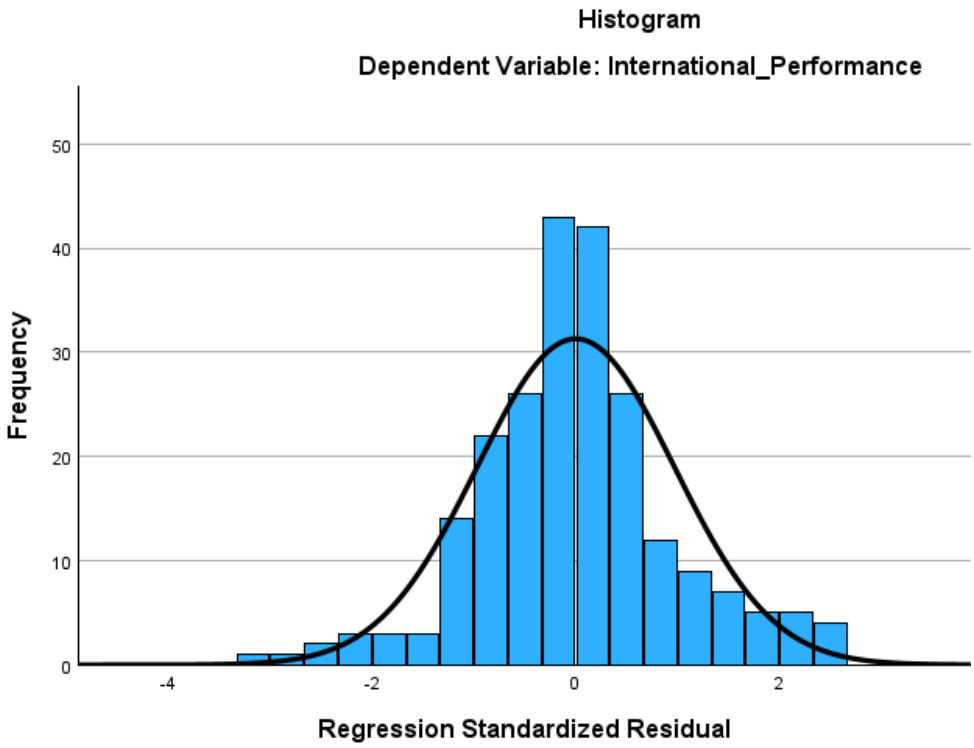
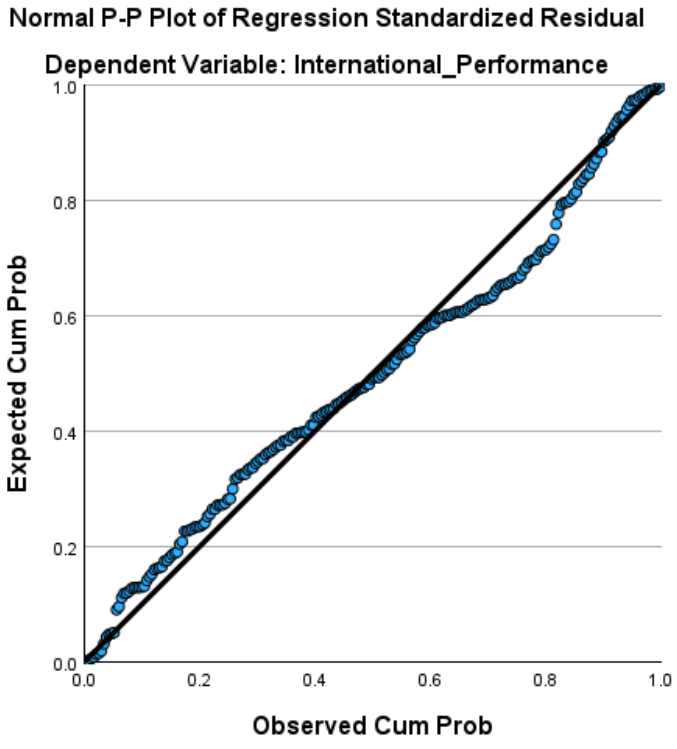


Figure 3.3 P-P Plot illustrates plot of regression standardised residual distribution



Chapter 4. Digital Pathways to Globalisation: Technology Adoption and the Internationalisation of Emerging Multinational Enterprises [9]

Study 2

Abstract

EMNEs use digital connections to improve the speed of their interfirm and intrafirm activities while incorporating novel technology. However, their extent of which the technologies were adopted by the recipient are unknown. Thus, the relationships between the determinants of digital technology adoption (DTA) and their response are crucial to be investigated. To understand their current internationalisation trend, I use firms' speed of internationalisation to investigate the interactions effects on the relationship between the new OLI factors; open resource access, digitisation-enabled linkage, digitisation-enabled integration and their global DTA. The findings of this research indicate that speed has significant impact on the relationship between open resource access, digitisation-enabled linkage, digitisation-enabled integration and global DTA. It complements to the existing body of internationalisation viewpoints, highlighting that speed is a crucial factor in the context of the current digital age. The results strengthen understanding of the elements of the springboard phenomenon in the developing economy, as firms are actively searching for strategic assets, hence placing more emphasis on intangible assets that provide open access to resources.

[9] Parts of the section in Chapter 4 have been submitted as my PhD Thesis Proposal Defence.

4.1 Introduction

In the rapidly evolving digital age, emerging multinational enterprises (EMNEs) are leveraging digital technologies to expand internationally at an unprecedented pace (Fleury et al., 2024; Strange et al., 2022). These technologies facilitate efficient and effective connections with stakeholders across countries, enabling EMNEs to enhance their global operations (Strange et al., 2022; Zhou et al., 2024). Despite the widespread diffusion of digital technologies through global and local networks, the advantages they provide remain unclear (Skare & Riberio Soriano, 2021). For example, Bandari et al. (2023) found that high-level internationalisation boosts the performance improvements resulting from high-level digitalisation. However, it did not specify what aspects of digital technologies influenced the outcomes. In another study by Menz et al. (2021) propose three overarching domains of corporate strategy phenomena influenced by digital technologies: competitiveness, firm scale and scope, and internal structure and design; however, the study neglects to address the undertakings that affect digitalisation. This ambiguity arises from varying levels of access to digital-enabler technologies and adaptability among firms.

Research on digitalisation grows as globalisation is increasingly driven by intangible flows of data and information (Li et al., 2024). Scholars have researched the influence of digital technology on leading technologies transformation (Fleury et al., 2024; Liu et al., 2024; Zhang et al., 2024), change of production factors (Capestro et al., 2024; Zeng et al., 2019), change of production innovations (Elia et al., 2020; He et al., 2019; Luo et al., 2024; Wang et al., 2024), strategic changes in EMNEs (Buckley et al., 2023; Hanelt et al., 2021; Sun et al., 2025) and future directions (Skare & Riberio Soriano, 2021; Strange et al., 2022; Verbeke & Hutzschenreuter, 2021). The existing literature provides a macro perspective on the impact of digitalisation; however, there is a lack of nuanced explanations regarding the impact speed of internationalisation (SOI) on the relationship between digital connectivity for firms and digital technology adoption (DTA). The DTA initiative acknowledges that digital forces, such as intangible data and knowledge flows and better access to information, influence digital global connection (Bhandari et al., 2023). Especially with the dynamic business changes in each phase, some firms may thrive, while others may struggle to fully leverage their potential benefits from digital technologies. This gap calls for a thorough study of the determinants and factors that affect DTA and how they interplay, especially as EMNEs make important choices about their technology infrastructure and long-term goals (Menz et al., 2021; Strange et al., 2022; Van Zeebroeck et al., 2021).

This study view DTA as either the acceptance of a technology or the degree of its use (Blichfeldt & Faullant, 2021; Van Zeebroeck et al., 2021). Additionally, the study makes a distinction between local and global DTA because technologies can diffuse through either local or

global networks. Mainly, organisations that prioritise a strategic approach to integrating these technologies are more likely to realise significant gains in efficiency and competitiveness (Blichfeldt & Faullant, 2021; Elfaki & Ahmed, 2024). For instance, firm like Amazon and Alibaba empower small-medium sized enterprises (SMEs) globally to surmount conventional export obstacles by facilitating direct connections with international consumers via online marketplaces. SMEs can leveraged rapid SOI effectively due to strong digital integration availabilities and capabilities, amplifying their new OLI advantages and maximising digital adoption outcomes.

Moreover, contemporary firms are increasingly embedding digital technologies into their organisational frameworks and strategies to enhance their competitive edge (Feliciano-Cestero et al., 2023; Strange et al., 2022; Volberda et al., 2021). Digital dynamics and global connectivity undermine conventional ownership, location, and internalisation (OLI) benefits while amplifying new OLI advantages (open resources, linkages and integration) (Luo, 2021). Hence, the new OLI advantages serve as an appropriate lens for this study. The primary research question is: **What is the relationship between the New OLI factors and DTA and what is the role of the SOI in this relationship?**

Comprehending the possible influence of SOI on the adoption of digital technologies is essential for EMNEs to adeptly navigate their internationalisation processes and sustain competitiveness in the global market (Feliciano-Cestero et al., 2023). Furthermore, as digital technologies continue to evolve, firms must adapt quickly to maintain their competitive advantage, making the SOI a critical factor. As EMNEs intensify their internationalisation efforts to alleviate domestic market restraints (Luo & Tung, 2007), their resource utilisation escalates. Thus, EMNEs are expected to use external open resources, global connections, and digital integration to facilitate fast scaling and enhance competitiveness. Therefore, SOI is expected to affect the interaction between the new OLI factors and DTA, as EMNEs pursue essential digital resources and solutions for their ventures.

To address this research question, I employ a comprehensive empirical investigation. Chinese managers are particularly suitable for the study due to their propensity to execute transfers perceived as possessing significant strategic value, such as the introduction of new products or technologies, especially in contexts characterised by considerable uncertainty regarding the product (Calantone et al., 2006; Poppo, 2003). The methodology includes a survey distributed to a stratified sample of EMNEs in China, ensuring a diverse representation of firms across different industries and sizes. The research focused on Chinese EMNEs due to China's rapid digital transformation, characterised by significant investments in digital infrastructure, mobile payment systems, e-commerce, and social media (Guo et al., 2023; Jiang & Murmann, 2022). This setting provides a distinct framework to analyse how DTA might improve international competitiveness.

Relevant literature that underpins the methodology includes studies on composition-based view (CBV) and springboarding perspective, DTA and firm performance (Li et al., 2022; Luo & Child, 2015; Shen et al., 2022; Strange et al., 2022) and the role of strategic decision-making in the adoption of digital innovations (Nambisan, 2022; Nambisan & Luo, 2021; Nambisan et al., 2019; Strange et al., 2022).

The key findings of my study indicate a significant positive correlation between the new OLI factors and global DTA. Additionally, the result indicates that SOI positively moderates these relationships, highlighting its crucial role in amplifying the effectiveness of DTA. These findings contribute to the existing body of literature by emphasising the importance of speed in internationalisation and the strategic use of digital technologies to improve international performance. This also aligns with recent research on the dynamic capabilities of firms in the digital era (Ning et al., 2024; Shen et al., 2022; Teece, 2018).

This study makes several key contributions. Firstly, it extends the new OLI framework by integrating the concept of SOI, providing a more nuanced understanding internationalisation and DTA. Secondly, it offers practical insights for EMNEs on how to strategically manage their DTA to enhance their global operations. Lastly, it underscores the critical role of SOI, suggesting that SOI and DTA could complement each other in speed where faster adoption and integration of digital technologies may significantly boost EMNEs' competitive advantage in the global market (Gripsrud et al., 2023). This study sheds light on the intricate dynamics between digital technology adoption, internationalisation speed, and resources utilisation; offering valuable guidance for EMNEs seeking to thrive in the digital era. By addressing the critical question of how digital technologies and internationalisation speed interact, this research provides a foundation for future studies and practical applications in the realm of international business and digital strategy.

4.2 Theoretical Background

Strategic Mechanisms of Digital Technology Adoption in EMNEs

This study employs the new OLI advantages perspective; open resource access, digitisation-enabled linkage, and digitisation-enabled integration advantages (Luo, 2021) to investigate this dynamic advancement. The new OLI paradigm complements the classic (OLI) framework; ownership, location, and internalisation to include the impacts of digital globalisation. It acknowledges that digital dynamics, including the accelerated dissemination of information and data, have diminished conventional OLI advantages while generating new ones (Luo, 2021).

Research indicates that the association between SOI and business performance has been shown in two distinct manners: directly (Abdi & Aulakh, 2018) and indirectly (Cho & Kim, 2017). Jain et al. (2019) assert that certain resources and competencies are likely to impact the association between SOI and firm performance. On the other hand, Hilmersson and Johanson's (2016) research found that SOI positively influences its overall performance; however, this correlation is not simple linear. The extant research findings were in relation to firms' performance and did not clarify how SOI may impact the relationship between utilisations of digital resources and DTA. Consequently, considering advancement in digital technology, this paper is keen to finding out the impacts of SOI on the relationship of OLI factors on DTA.

Firstly, EMNEs that internationalise rapidly may gain advantages by promptly accessing global digital resources (e.g., cloud services, open-source software), facilitating fast scalability and competitive edge (Stallkamp et al., 2022). However, an accelerated SOI may compel inadequate or unsuitable utilisation of available resources owing to constrained time (Bolívar et al., 2022) for strategic consideration or information assimilation, resulting in diminished DTA results.

Secondly, EMNEs that are rapidly expanding may efficiently use digital platforms and ecosystems (e.g., Temu, Alibaba, digital marketplaces) to swiftly establish globally linkages, therefore substantially augmenting their market presence and competencies (Wang et al., 2014). Yet, rapid internationalisation may undermine the quality of digital linkages, leading to shallow partnerships or inadequate integration with the firm's long-term strategic goals (Puthusserry et al., 2020), so adversely impacting the effectiveness of DTA results.

Thirdly, EMNEs with established internal digital infrastructure may greatly benefit from rapid internal digital infrastructure, improving responsiveness, agility, and cross-border coordination via digital integration (e.g., enterprise resource planning and customer relationship management systems) (Stallkamp et al., 2022). On the other hand, rapid internationalisation may significantly burden organisational resources and management focus, undermining the firm's capacity to integrate and efficiently use digital technology internally, hence diminishing overall efficiency and effectiveness of DTA results (Shaheer et al., 2022).

This complexity of utilisation of digital resources by EMNEs can be understood better through the lens of the new OLI perspective (Luo, 2021) coupled with CBV (Luo & Child, 2015). Moreover, it can enhances the explanation of resource utilisation beyond the limitations of existing theories, especially taking SOI into consideration (Shaver, 2013). Given that production modes and operational changes inside enterprises may correlate to the extent of DTA, understanding the mechanisms and rationale behind this might be advantageous for EMNEs. In addition, research indicates that EMNEs utilise open resource access, digitisation-enabled linkage, and digitisation-enabled integration as pivotal strategic mechanisms and organisational platforms to enhance their

internationalisation undertakings and international performance (Bhandari et al., 2023; Luo, 2021). By leveraging digital architecture, these multinational firms can effectively access global open resources, collaborate with international partners, engage with global customers, and manage internal organisational operations. Since digital technologies are transferred across providers and recipients, it is critical for understanding their adoption and integration practices and their implications. (Strange et al., 2022).

Furthermore, global DTA is particularly significant for EMNEs as firms seek to overcome their latecomer disadvantages and gain competitive advantages. In their efforts to adopt external competencies, EMNEs often seek foreign assets (i.e., knowledge and know-how) unavailable locally in advanced countries. (Luo & Tung, 2007, 2018). The emergence of new digital technologies, such as blockchain and AI which can regulate collaboration and participation; the utilisation of digital platforms have led many scholars to speculate that firm boundaries and corporate hierarchies will undergo significant change (Foss & Klein, 2022). It will disturb the business ecosystem and cause significant impacts on the way EMNEs operate (Nambisan et al., 2019). To remain competitive, these firms leverage their existing capabilities by adopting new technologies from their global networks, such as foreign subsidiaries, alliances, industry, or global partners (James et al., 2013; Luo & Tung, 2007). Therefore, while seeking for external resources, global DTA has become an essential practice for EMNEs.

Global DTA denotes the amalgamation of digital technologies resulting from the diffusion of global technologies across international network partners. The utilisation of digital technologies may enhance the probability of knowledge transfer contingent upon cooperation of the providers and the recipients of the technology (Forman & van Zeebroeck, 2019). This study hypothesises that firms that adopt these technologies are more likely to achieve improvements in their firms' innovation performance (Blichfeldt & Faullant, 2021; Elfaki & Ahmed, 2024; Usai et al., 2021). The study posits that SOI is a crucial component of EMNEs' global expansion strategy, as it should strike a balance between utilising internal resources and internationalisation advantages (Chetty et al., 2014). Undoubtedly, enterprises with substantial capital investments will demand a more responsive, consistent, and rapid internationalisation strategy. Besides, according to a few studies, SOI has a potential correlation with firm performance (Hilmersson & Johanson, 2016; Vermeulen & Barkema, 2002; Wagner, 2004).

As there are varieties type of digital technologies, the study follows Van Zeebroeck et al. (2021) classification of digital technologies into types and four categories which are digital services, digital shadow, digital twin, and digital model (Jones et al., 2020; Kritzinger et al., 2018) (see Table 1). Nevertheless, the scope of these analyses does not include all the technologies that fall under this broad category. For instance, Brock and von Wangenheim (2019) only consider AI out of many

digital technologies in their study of digital transformation. Also, Hannibal and Knight (2018) and Laplume et al. (2016), for instance, only consider 3D printing in their study of international supply chains.

Table 4.1 Type of digital technologies

Types of Digital Technologies	Functions	Categories of Digital Technologies by Function
Traditional Web	Websites that adapt to dynamic and interactive web technologies which offer greater functionality and user engagement.	**Digital Services** (Cloud-Web Technology)
Cloud-based Services	The utilisation of third-party providers to host and deliver software applications, storage, and other computing resources over the internet, as opposed to accessing and storing them locally on a user's device.	
Mobile Internet	The mobile internet has facilitated the ability of users to remain connected and obtain information and services while on the move, rendering it an indispensable component of contemporary communication and commerce.	**Digital Shadow** (Internet Technology-enablers)
Big Data	Big data is of paramount importance in the process of digitalisation as it facilitates data-centric decision-making, operational optimisation, and enhancement of customer satisfaction for organisations.	
Internet of Thing (IoT)	Technology-enabler of network of physical devices that allows users to collect and analyse data from a wide range of sources.	
Artificial Intelligence (AI)	AI facilitates the automation of tasks, customisation of experiences, enhancement of predictive capabilities, optimisation of operations, and stimulation of innovation within organisations.	**Digital Twin** (AI Technology)
Deep Learning	The capacity to autonomously acquire knowledge and adjust to novel information, thereby enabling the system to progressively enhance its precision and efficacy with the passage of time.	

Augmented Reality/Virtual Reality (AR/VR)	This technology facilitates the creation of immersive and interactive experiences for various stakeholders, including customers, employees, and other interested parties.	**Digital Model** (High-Value Tasks Technology)
Robotic and Robotic Process Automation (RPA)	Technology-enabler that allows users to create machines that can be programmed to perform a wide range of tasks to improve efficiency.	
Additive Manufacturing	Technology that can create physical objects by prototyping, tooling, and production of final parts for industries.	

Adopted from: (Jones et al., 2020; Kritzinger et al., 2018; Van Zeebroeck et al., 2021) [10]

4.3 Hypotheses Development

The upcoming sections demonstrate the evolution of the hypotheses, showcasing their formulation based on preliminary research findings. I will examine each hypothesis in detail, along with the rationale behind its development and the anticipated implications of the results.

4.3.1 The new OLI advantages

Building on the idea that EMNEs are leveraging their strategic network partners to form strategic alliances, exchange business ideas, and compensate for their deficiencies in capabilities (Juasrikul et al., 2018; Lopez-Vega & Lakemond, 2022), this study advances the notion that EMNEs are using open resource access and digitisation-enabled technologies with the aim of strengthening operational efficiency and accelerating internationalisation. As EMNEs become more competitive, they seek ways to improve their operation through their value chains and build firm-specific advantage (FSA).

Moreover, the arrival of the digital age has made it easier for many new corporate strategy abnormalities to appear. These include the introduction of new types of resources, such as data and information, which corporate strategies can leverage. Additionally, there have been advancements in strategy processes, such as open strategizing, and innovative approaches to organising, such as integrated organisation designs and virtual headquarters. Murthy and Madhok (2021) is formulating

The type of digital technologies is adopted from two sources:
1) Jones, D., Snider, C., Nassehi, A., Yon, J., & Hicks, B. (2020). Characterising the Digital Twin: A systematic literature review. CIRP Journal of Manufacturing Science and Technology, 29, 36-52.
2) Van Zeebroeck, N., Kretschmer, T., & Bughin, J. (2021). Digital "is" strategy: The role of digital technology adoption in strategy renewal. IEEE Transactions on Engineering Management, 70(9), 3183-3197.

new ideas regarding the effective development of innovation, open-source, and information digital platform ecosystems. This is accomplished via a research study that examines the progression of digital platform ecosystems from their early stage, when value co-creation entails recruiting contributors with complementary skills, to the stage where platform sponsors, who are not acquainted with each other, are engaged (Volberda et al., 2021). The researchers showed that when a platform sponsor chooses the scope of their platform, it sends a signal about the potential for value co-creation possibilities. This, in turn, draws both complementors and consumers, which bring significant impact on transaction costs for enterprises, hence, improve performance (Luo & Zahra, 2023; Menz et al., 2021).

According to Sánchez et al. (2020) there are three factors for technology adoption consideration. First is the technical characteristic of the products, second relates to the organisational aspect and human resources of the institution that adopt a product. and third is the economics aspect used to procure, sell, or lease items and services that satisfy organisational requirements (Sánchez et al., 2020). The parameters outlined in Sánchez et al.'s research include various dimensions, and the data extraction, synthesis, and classification were comprehensive and meticulously conducted; nonetheless, open resources access and digitisation-enabled (as technical features) were not identified as technical characteristics of technology adoption. Thus, this study will fill this voids.

Moreover, the relationships between open resource access, digitisation-enabled linkage, and digitisation-enabled integration with DTA are significant predictors and should be used for further examination. The role of SOI is especially pertinent for EMNEs aiming to utilise internationalisation to overcome their resource and capacity limitations. Furthermore, it is argued that globalisation enhances technological adoption by facilitating the transfer of foreign knowledge, thus, boosting international rivalry and improved performance (Skare & Riberio Soriano, 2021). This study posited that the favourable association between global DTA and advantages derived from open resource access, digitisation-enabled linkage, and digitisation-enabled integration.

Open resource access

The emergence of digital technology and innovative business models is causing a profound transformation in the structure and function of the global economy. The increasing availability of open resource access and the flow of intangible data and information are becoming characteristics of contemporary global business operations (Nambisan & Luo, 2021). Open resource access becomes the hallmark of modern disruptive business model. Barnard (2021) contested that any digital firms primarily operate within their own country, despite having an international stakeholder, usually having a location in higher income countries due to the low cost of expanding. Those corporations were employing a niche filling technique to restrict the use of human resources overseas

by utilising a digitised-enabled platform. However, the technological characteristics of open resource access for adoption considerations was not investigated, and this work aims to explore the link between open resource access and global DTA.

Those platforms can create co-creation sharing of knowledge and technologies to support the firms' operations. The implementation of suitable routines, organisational structures, and cognitive models at both the company and ecosystem levels further supports their success (Khanagha et al., 2022). Open resource access is the preferred strategy for firms, and digital technologies are prevalent within organisations, making it impossible for them to ignore them. Therefore, this study posits a significant positive relationship between open resource access and DTA. Hence, the study hypothesises:

Hypothesis 1 (H1): *Open resource access is positively associated with firms' global DTA.*

Digitisation-enabled linkage

The new potential for cross-border trade has presented unique problems for both nations and firms, as EMNEs have strengthened the linkages and interdependencies between the innovation systems in developing economies and established market economies (Anand et al., 2021). Within the confines of the innovation systems in which these firms are situated, businesses must reorganise their resources and create new internal strengths rather than merely replicating technology or organisational frameworks. It is now commonly acknowledged that the relationships that EMNEs build with businesses and organisations serve as the most effective conduit for the dissemination of skills, information, and technology. Clearly, linkage facilitates effective coordination and collaboration inside the EMNEs, enabling the efficient management of global tasks carried out by different foreign units (Luo, 2021). Thus, the study argues that the extent of digitisation-enabled linkage will advance global DTA. Therefore, linkages are an important strength for EMNEs to increase their global DTA. Hence, the study hypothesises:

Hypothesis 2 (H2): *Digitisation-enabled linkage is positively associated with firms' global-DTA.*

Digitisation-enabled integration

In the digital economy, corporations are now using digitalisation strategies to internationalise, instead of relying on traditional factors such as site selection, entry mode choice, global integration, and foreign direct investment (FDI) reasons. The correlation between these actions and the state of the country's digital economy highlights the significant impact on transaction costs for enterprises

(Menz et al., 2021). The point brought forward in this study is that EMNEs' digitisation-enabled integration is a crucial transaction cost factor in determining their international performance. Hence, given the rapid advancement of digital technologies and its significant positive impact on saving in transaction costs, this study proposes that digitisation-enabled integration has a positive relationship with global DTA.

Hypothesis 3 (H3): *Integration advantage is positively associated with firms' global DTA.*

4.3.2 Speed of Internationalisation (SOI)

SOI is a crucial component of EMNEs' global expansion strategy, where it should strike a balance between utilising internal resources and internationalisation advantages (Chetty et al., 2014). In the this study, I use the framework established by Oviatt and McDougall (2005) The concept of speed denotes the speed at which a business penetrates new markets, the establishment of the firm, and the date of its first international export. Undoubtedly, stakeholders with substantial capital investments will demand a more responsive, consistent, and rapid internationalisation strategy. Besides, according to a few studies, SOI has a potential correlation with firm performance (Hilmersson & Johanson, 2016; Vermeulen & Barkema, 2002; Wagner, 2004).

Moreover, an increasingly valuable competitive edge for contemporary MNEs is the capacity of the managers to manage and use the knowledge acquired by its subsidiaries in different geographies (Lee et al., 2021; Verbeke, 2009). However, not all resources are suitable for used; hence, managers must select and decide on appropriate and suitable knowledge that may bring complementary effects or efficiency to the firms' international performance. The strategic decision of adopting new information and integrating it with current knowledge in their home countries facilitates indirect learning and accelerates their internationalisation (Gammeltoft & Cuervo-Cazurra, 2021). Hence, the complexity of international growth does not end when a firm goes global (Vermeulen & Barkema, 2002). Instead, it continues throughout the internationalisation process, when information and expertise are shared between geographically separate strategic partners. For this reason, the study intends to investigate the strategic decisions of how EMNE employs open resource, linkage and integration advantages and its effect on the relationship of global DTA. Thus, the study hypothesises that SOI may positively affect the relationships of new OLI factors and firms' global DTA.

Open resource access – Global DTA – SOI as Moderator

As companies seek to improve their competitive advantage, they are increasingly using external open resources access to complement their internal assets (Chesbrough, 2003; Chesbrough & Appleyard, 2007). In a larger context, MNEs are using open resources to maintain competitiveness on their distinctive activities via cross-licensing, alliances, and acquisitions (Luo, 2021). According to Luo and Childs (2015), creative utilisation of these resources combined with the firm's current resource endowment leads in firm-specific proprietary knowledge, thus becoming FSA. Firms are utilising external open resources to complement firms' own assets to boost their comparative advantage (Chesbrough, 2003; Chesbrough & Appleyard, 2007). Furthermore, the modularity of technologies and the standardisation of technological standards across countries has accelerated the exploitation of global open resources. While according to Schlagwein et al. (2017), open resources refer to accessible resources such as open APIs (application programming interface), open content, open data, and open source code; open resources harness new ways for MNEs to improve their existing resources and increase their competitive advantage through information technology. The study hypothesises that SOI may influence the firms open resource access – global DTA's relationship. First, the firm's DOI competence is determined by its SOI. A firm with a greater level of SOI is likely to have bigger global networks, which in turn leads to improved open resources with global stakeholders and a higher degree of DTA. Second, by expanding rapidly, companies can achieve economies of scale in production, distribution, and marketing, which can lower costs and increase profitability. For the reason, firms with higher SOI are more likely to have access to open resources access that are integrated into their global networks. This, in turn, influence their open resource – DTA's relationship. Third, faster internationalisation provides quicker access to a broader range of resources, such as raw materials, talent, and technology, which can enhance innovation and efficiency. Hence, this study posits that SOI will make a positive impact on open resource – DTA's relationship.

> **Hypothesis 1a (H1a):** *The relationship between open resource access and global DTA is positively moderated by SOI.*

Digitisation-enabled linkage – Global DTA – SOI as moderator

The digitisation-enabled linkage advantage suggests that MNEs gain from enhanced digital globalisation in the quality of their interfirm and intrafirm links, as well as their links to global consumers (Luo, 2021). Thus, differing from the traditional eclectic paradigm, EMNEs growth depends upon managerial agility in leveraging their linkages rather than focusing on transaction costs saved (Chen & Kamal, 2016) as hold-up risks decreased. In addition, the digitised-enabled linkage allows interfirm (internalisation) and intrafirm (externalisation) knowledge and resource sharing much easier, causing the rise in transaction values (Luo, 2021). Furthermore, as suggested by Luo,

digitisation-enabled linkage comes in a global customer impact, which describes how digital globalisation significantly increases the number of customers based and potentially end-users over the world. At the same time, the motivations, and locations of FDI may undergo changes such that the benefits of digital linkage or connectivity outweigh traditional cost-saving factors (Luo & Zahra, 2023). Consequently, EMNEs put greater emphasis on cross-border connectivity, which enables faster, larger, and more efficient global value chain connections. This research argues that the propensity for SOI offers a digitisation-enabled linkage advantage, thereby expanding their global strength DTA. Hence, this study hypothesises that:

> **Hypothesis 2b (H2b):** *The relationship between digitisation-enabled linkage and global DTA is positively moderated by SOI.*

Digitisation-enabled integration – Global DTA – SOI as moderator

Particularly, in recent development of digital technology, it can be argued that digital architectures reinforce integration between the multinational enterprise and its partners, suppliers, distributors, and logistics providers. Furthermore, through integration, digitisation increases management effectiveness and enhances businesses' capacities and efficacy in planning, managing, and monitoring internationally dispersed operations and activities. Digital platforms enable users to research goods, services, pricing, and other options; this capability eliminates specific information asymmetries, resulting in more efficient markets but at the expense of conventional middlemen (Luo, 2021). It can be reasoned that digitised-enabled integration could have the potential to improve swiftness in business transactions especially when it comes to information sharing, thus improve in business compatibility, and offset the latent risk of resistance to change by stakeholders (Bailom et al., 2007). This study argues that EMNEs' propensity for SOI will provide a digitisation-enabled integration prospect, as firms will use digital technologies overall to ensure global connectivity efficiency. Hence, it is imperative to examine the role of SOI, specifically the impact on the relationship between digitisation-enabled integration and DTA. This study hypothesises that:

> **Hypothesis 3c (H3c):** *The relationship between digitisation-enabled integration and global DTA is positively moderated by SOI.*

4.4 Methods

An empirical investigation was undertaken to examine the hypotheses and substantiate the model. The survey consisted of a predetermined set of organised and standardised questions. The participants provided responses to the questions using a 5-point Likert scale, where the option of

Strongly Disagree was assigned a value of 1 and the option of Strongly Agree was assigned a value of 5 (Likert, 2017).

4.4.1 Preparation of questionnaire

The questionnaire was simplified based on the comments six individuals with extensive expertise in multinational enterprises and scholars in international business. Following the pretest, the pilot test was carried out with a sample of 30 respondents who were chosen using purposive sampling. These participants were excluded from the primary survey. The examination of their reactions to the preliminary trial aided in further correcting the wording, structure, and format of some enquiries to improve their readability, comprehensibility, and inclusiveness. After undergoing a variety of corrective procedures, a total of 29 questions were ultimately determined.

4.4.2 Data collection

The methodology included using data published by the Chinese Ministry of Commerce and the State-Owned Assets Supervision and Administrative Committee. These organisations are vital parts of the Chinese government's foremost legislative agencies that oversee and manage enterprises. The dataset can provide accurate information about the global prevalence and proportion of overseas sales for the purpose of classification. This research employs stratified sampling, as defined by Patton (1990).

Initially, I propose the act of dispatching an introductory request to participants by online application, accompanied by comprehensive information on the research. I sent to a minimum of 2000 stratified samples of Chinese multinational enterprises (MNEs) located in economically developed regions of China. The survey was sent to a minimum of 2000 stratified samples of Chinese multinational enterprises (MNEs) located in economically developed regions of China. In all, the study achieved a 15% response rate, which equals 296 responses, but a total of 58 respondents with incomplete data, mostly due to participants failing to complete the necessary questionnaires, with a remaining of 238 samples. To participate in the survey, the participants must meet specific criteria. The potential participants must agree to the screening requirements before proceeding to start the survey. They must possess substantial authority in shaping the firm's strategic growth; include managers or executives of high-level executive positions. The chosen participant of the Chinese multinational enterprises (MNEs) must meet the criteria below:

i. working with a company must have global sales.

ii. working with a company must have global presence.

iii. The executives are required to have a position of influence inside the firm

4.4.3 Biases control

To reduce common method variances (CMV), there are three ex-ante measures proposed by Chang et al. (2010) to minimise the impact. Firstly, the survey was launched using randomisation of question order technique. It was used in the study by Barden, Steensma, and Lyles (2005) who performed temporal separation of measures, and deliberately adjusted the order of questionnaire questions in their research. Additionally, the questionnaires were set in a random block design, which researchers found the random block design produced higher reliability of measures (Podsakoff et al., 2024). The methodological decisions were intended to minimise the possible effect of CMV on the connections among dependent, independent, and control variables (Chang et al., 2010). Secondly, the respondents were assured of anonymity and secrecy to reduce the influence of social desirability, and it was made clear that there were no right or incorrect answers for all questions. As suggested by Chang et al. (2010), data collecting processes may reduce bias by encouraging survey respondents to answer questions honestly. Finally, the researchers used more objective questionnaires that are less likely to be correlated with CMV, as suggested by Podsakoff et al. (2003).

T-test is performed on the data to assess non-response bias by comparing earlier and later replies. The groups' descriptive statistics are illustrated in Table 4.2. The findings of the independent sample t-test, as shown in Table 4.3, suggest that the null hypothesis, which posits that the group means are equal, cannot be rejected. The feedback between the early response group and the late response group is not statistically different, as shown by the non-significant t-statistics for dependent, independent, and moderating factors. Consequently, non-response bias is absent in the data, as shown by the negligible t-test findings, which assume that the late response group closely resembles the non-respondents (Armstrong & Overton, 1977).

Finally, Harman's single factor test to assess common method bias, the cumulative variance explained by the first factor was 25.89%. Since this value is well below the 50% threshold, it indicates that common method bias is unlikely to be a significant issue in this dataset (Podsakoff et al., 2003).

Table 4.2 Group descriptive statistics for the early and late respondents (N=238)

Variables	Response	N	Mean	Standard Deviation	Standard Error Mean
Speed	Early	103	9.710	7.678	0.757
	Late	135	12.070	8.958	0.771
Open Resources	Early	103	3.406	0.702	0.069
	Late	135	3.485	0.725	0.062
Linkage	Early	103	3.506	0.744	0.073

	Late	135	3.574	0.674	0.058
Integration	Early	103	3.485	0.707	0.069
	Late	135	3.441	0.805	0.069
Global DTA	Early	103	3.366	0.753	0.074
	Late	135	3.509	0.674	0.058

Table 4.3 Non-response bias test results (earlier/later responses)

Variables	t	*df*	Sig. (2-tailed)
Speed	-2.145	236	0.330
Open Resources	-8.838	236	0.403
Linkage	-0.737	236	0.462
Integration	0.440	236	0.661
Global DTA	-1.547	236	0.123

Note: N=238

4.5 Modelling Procedure

The research used hierarchical multiple regression analysis methods to examine the comparability and connection between variables (Lindner et al., 2021). In addition, this study uses a micro-level analysis to investigate the correlation between the variables. The findings of the study were examined via three essential stages. Initially, the descriptive statistics and reliabilities of the scale were calculated, and the value of Cronbach's alpha was provided. The Pearson Product moment correlation was used in the second phase to assess the association between open resource, linkage, integration, and DTA. The third phase included doing a hierarchical regression analysis to evaluate the relationship between open resource, linkage, integration, and DTA. DTA is anticipated to become apparent immediately after enterprises assimilate digital resources through network relationship, integration and linkage mechanisms; hence, a cross-sectional methodology design offers a reasonable approach particularly for this study. This research methodology is supported by the assumption that the present rapid speed of technology adoption, where technology is shared and transferred seamlessly (Tsaramirsis et al., 2022).

4.5.1 Measurement of open resource

The measurement of open resource was adapted from a previously validated measurement used by Cheng and Huizingh (2014) which measure open innovation. The activities scale has 12 items reflecting the three dimensions (five for outside-in activities, four for inside-out activities, and three for coupled activities). Literature review suggests that open innovation is part of the open

approach; thus open innovation activities result from open resource initiatives (Chesbrough & Appleyard, 2007).

4.5.2 Measurement of linkages

The research follows the study conducted by Mei et al. (2019), and it categorises the external linkages that an EMNE has with its partners in an innovation ecosystem into one of two categories: the linkages of an EMNE with its Prominent Organisations (LPO), and the linkages of the EMNE with its Service Intermediaries (LSI). There are four items in each construct, which sums up to eight items.

4.5.3 Measurement of integration

To determine the level of integration, the study uses a validated measurement of information-based mode derived from the work of Kim et al., (2003). Respondents were given a five-point Likert-type scale and asked to rate the extent to which each mode was utilised to facilitate global integration, with 1 representing "not used at all" and 5 indicating "used extensively." (Likert, 2017) In all, the construct consists of five different items.

4.5.4 Measurement of SOI

The measurement of the SOI, as per Reuber and Fischer (1997) and Zahra et al. (2003) was conducted by determining the duration (in years) between the year of establishment of the firm and the year of its initial international undertaking.

4.5.5 Measurement of DTA

Following Van Zeebroeck et al. (2021), global DTA measurement, Jones et al. (2020) and Kritzinger et al. (2018) to identify the types of digital technologies into four categories by functions. The purpose of the questions is to ascertain the degree of commitment on digital technology that has been tested, adopted in at least one functional area, or widely implemented throughout the organisation.

4.5.6 Control variables

To minimise the influence of extraneous factors on the research enquiry, I included the variables of firm size and industry type into the study. These pertain to the extent of the new OLI variables comes from local stakeholders, firm size, and industry classification. Previous research has demonstrated that these variables can impact an internationalising firm's learning capacity and their international performance (Barkema et al., 1996; Yeoh, 2004; Zahra et al., 2000). In addition, the study also controls the local DTA, position titles, tenure, length of employment and education level of executives.

DTA Local network partners

Research control for the adoption of technologies is provided by local network partners. It is via these partners that digital technologies are disseminated to the operations of EMNEs in the local area. According to Nielsen and Raswant (2018), when I account for indigenous operations, I reduce the impact of extraneous variables that have an effect on the response variable.

Firm Size (total employee)

Given the challenges in accessing financial data from Chinese enterprises, the studies account for company size by considering the number of employees (Brouthers & Xu, 2002; Zhang et al., 2016). The firm size data comprises categorical variables, wherein the number of employees is classified on a scale of 1 to 4, denoting the range from less than 250 to more than 10,000 employees.

Percentage of foreign employees

Diversification of employees may impact the same performance metrics as, or lessen the performance consequences, as stated by Kim, Hwang, and Burgers (1989). Furthermore, as stated by Kim et al., (1989) it specifically tackles the challenges related to the utilisation of strategic resources across different areas of operation and the effective management of transactions, whether they occur inside a single organisation or beyond national borders.

Degree of Internationalisation (DOI)

I controlled DOI in term of scope of the foreign operations, that it breadth of subsidiaries can also affect its DTA (Andersson et al., 2005). The study follows previous studies (Goerzen & Beamish, 2003; Hitt et al., 1997; Tallman & Li, 1996) to measure DOI in terms of the country scope by counting the firm’s number of countries with operational subsidiaries in an indicated year.

Industry

The study follow Zhang et al. (2016) in categorising the industries to four categories. Autio, Almeida, and Sapienza (2000) incorporated industry dummies into their study to address the

potential variability in foreign market opportunities across different industries, which may affect firms' exposure to such opportunities. The research employed a 2-digit ISIC 4 for the purpose of coding all firms included in the sample (see Table 4.4).

Table 4.4 Industry categories

Category	Industry	Percentage (%) (N=238)
1	Textiles and wearing apparel	15.0
2	Chemical, rubber, and plastics products	13.3
3	Non-metallic mineral products, fabricated metal products, except machinery and equipment	7.1
4	Computer, electronic and optical products, electrical equipment, machinery, and equipment	20.0
5	Leather and related product, coke, and refined petroleum products, and	11.3
6	Motor vehicle and transport equipment	13.8
7	Pharmaceutical products	3.0
8	Printing and reproduction of recorded media, paper	9.1
9	Food products	5.3
10	Other categories	2.1

Industry categories adopted from Zhang et al. (2016) [11]

Position Title

The study control for the employee's position (Bernerth & Aguinis, 2016) within the businesses since this factor has the potential to impact resource utilisation. Managers play a pivotal role as the primary decision-makers, and their position and degree of responsibility within the organisation are vital for the performance of its operations.

Tenure and employment of executives

Years of position held was controlled by the relationship between executives' tenure and their dedication to organisational tasks and decision making, and how this relates to international

[11] The industry categories are adopted from:
Zhang, X., Ma, X., Wang, Y., Li, X., & Huo, D. (2016). What drives the internationalisation of Chinese SMEs? The joint effects of international entrepreneurship characteristics, network ties, and firm ownership. International business review, 25(2), 522-534.

performance (Siders et al., 2001). Research by Sider et al., (2001) reveals that tenure has a substantial impact on the majority of performance indicators.

Education-level diversity

Following Smith et al. (1994) approach, the study controlled for education-level diversity by converting the responses on highest degree into years of formal education. The coefficient of variation was then calculated for each participant to determine the amount of education diversity.

4.6 Results

Table 4.5 illustrates the reliabilities of variables used for this study. The reliability of the open resource, linkage, integration, and DTA was in an acceptable range (Kaplan & Saccuzzo, 1982; Murphy & Davidshofer, 1988; Werner et al., 1996). Variance inflation factors (VIFs) were computed as part of the research to look for multicollinearity. There was no sign of multicollinearity since the greatest VIF score (3.7) was much below the widely accepted threshold value of 10 (Hair, 1998). Nonetheless, the inclusion quadratic effects in the regression models may result in multicollinearity. Therefore, the corresponding variables were mean-centred as suggested by Aiken and West (1991) before producing the quadratic and interaction terms. By using this method, exploratory variables and their quadratic terms experience less non-essential ill conditioning (2013).

Table 4.6 displays the factor loading, which is a statistical metric used in factor analysis to reflect the strength of the relationship between an observable variable in this research and a latent variable. The unidimensionality of each concept was assessed by analysing the composite reliability for measurement reliability, comparing the average variance extracted with the shared variances at the construct level for discriminant validity, and assessing the standardised loadings for convergent validity. The findings of the confirmatory factor analysis (CFA) indicate that cumulative loadings of each factor were over 0.5 and statistically significant ($p<0.05$). Based on the findings of Fornell and Larcker (1981), if the average variance extracted is below 0.5, but the composite reliability is over 0.6, the concept still demonstrates sufficient convergent validity. This suggests a satisfactory degree of convergent validity.

Table 4.7 (Appendix 4) displays the correlation matrix and descriptive statistics using Pearson Product Moment correlation method. The percentage of foreign employees is positively correlated with both open resource advantage ($r = 0.88$; $p < 0.1$) and linkage advantage ($r = 0.11$; $p < 0.05$). Firms with a higher percentage of foreign workers, which indicates their international presence, tend to have higher open resource and integration advantages. This outcome implies that such companies must maintain their concentration and efficiently use international assets to generate advantages that

are unique to their organisation (Verbeke & Hutzschenreuter, 2021). Also, there is a clear and strong negative correlation (r= - 0.13, p<0.05) between open resource and percentage of foreign employee. A strong positive correlation was seen between linkage (r=0.14, p< 0.05) with percentage of foreign employees.

Table 4.5 Descriptive statistics and reliabilities of study variables

					Ranges	
Variables	*K*	α	M	SD	Potential	Actual
Open Resource	10	0.82	34.51	11.36	10-50	19-49
Linkage	8	0.77	28.36	8.96	8-40	16-39
Integration	5	0.72	17.32	5.51	5-25	9-25
Global DTA	10	0.80	34.42	7.10	10-50	19-49
SOI	1	-	11.05	8.47	-	0-83

Note. M=Mean; SD=Standard Deviation; k = No. of items*; α = Cronbach alpha; N=238*

Table 4.6 Factor loading

Item summary	Standardised Loadings	Cronbach's Alpha
Open Resource Advantage		0.82
1 - All our innovation initiatives include consumers, rivals, research institutions, consultants, suppliers, government, and universities	0.63	
2 - Our innovation programmes rely heavily on external partners including consumers, rivals, research institutions, consultants, suppliers, government, and universities.	0.47	
3 - Our company acquires R&D services from customers, rivals, research institutions, consultants, suppliers, government, and universities.	0.57	
4 - Our firm acquire patents, copyrights, and trademarks from external partners for our innovative initiatives.	0.45	
5 - Our firm often sells licenses, such as patents, copyrights, or trademarks, to other firms so as to better benefit from our innovation efforts.	0.49	

6 - Our firm often offers royalty agreements to other firms to better benefit from our innovation efforts.	0.53	
7 - Our firm strengthens every possible use of our own intellectual properties so as to better benefit our firm.	0.48	
8 - In innovation projects, our firm usually integrates all internal and external partners' information.	0.52	
9 - In innovation projects, our firm coordinates the activities of exchange of information among partners.	0.48	
10 - In innovation projects, our firm keeps internal and external partners updated about new information.	0.32	
Linkage Advantage		0.77
1 - Competitors	0.39	
2 - Suppliers for components	0.44	
3 - Primary users and customers	0.37	
4 - Complementors	0.35	
5 - Universities	0.36	
6 – Research institutes	0.49	
7 – Government agencies	0.36	
8 – Complementors	0.40	
Integration Advantage		0.72
1 - Internationally interconnected computer systems	0.58	
2 - Internationally electronic communications system	0.48	
3 - Internationally interconnected information system	0.46	
4 - Internationally integrated software applications – Application Programming Interface (API)	0.50	
5 - Informational databases to be shared internationally	0.39	
Global Digital Technology Adoption (DTA)		0.80
Please specify how much your firm has adopted in at least one functional area or scaled up the specified		

digital technologies distributed through **global network partners**:	
1 - Traditional web	0.64
2 - Cloud-based services	0.44
3 - Mobile internet	0.66
4 - Big data	0.51
5 - IoT (Internet of Things)	0.54
6 - AI (Artificial Intelligence)	0.51
7 - Robotics and RPA	0.58
8 - Deep Learning	0.66
9 - AR/VR	0.65
10 - Additive Manufacturing	0.71

Note. Cumulative factor loading >0.50, a= Cronbach's alpha

Regarding executive tenure, the analysis result revealed a significant positive association ($r = 0.74$; $p < 0.001$) between the duration of employment and the duration of the present position. This indicates the important impact of the executives' function on their duration. Despite the inclusion of these variables in various models, their correlations do not result in multicollinearity.

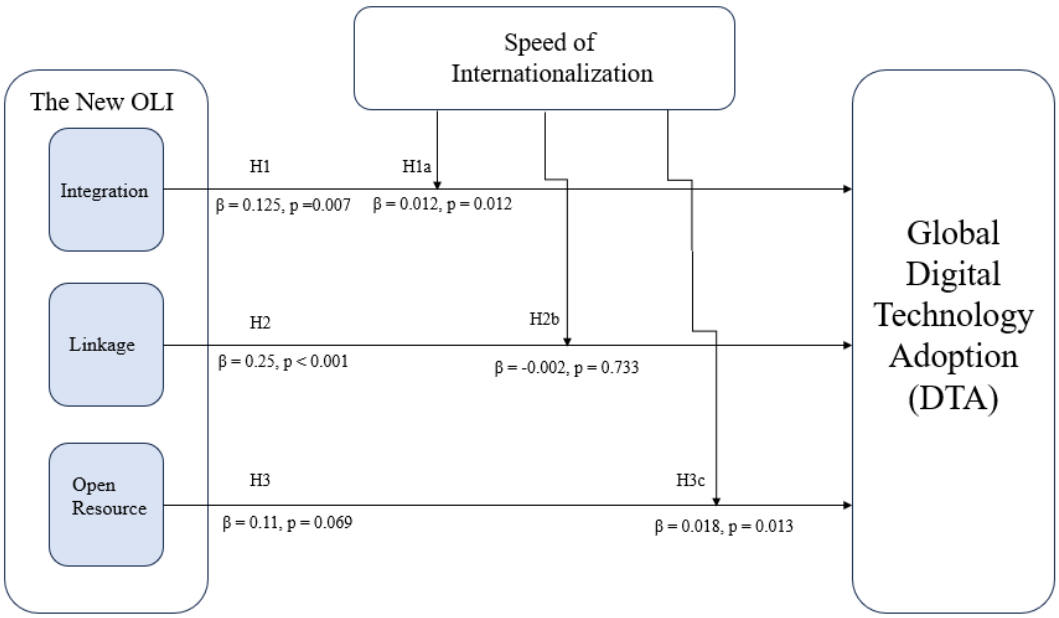
A hierarchical regression analysis was performed to investigate the proposed relationship shown in Figure 4.1. The analysis included independent and dependent variables. The study's results are shown in Table 4.8. (Appendix 4) The discussion covers the outcomes derived from all the models used to examine the hypotheses. Table

In Model 1, all control variables are entered. This model accounted for 62% of the variation in DTA, with a F value (10, 227) = 37.10 and a p-value = 0.001. The education level of executives was shown to be a significant positive predictor of DTA ($\beta = 0.069$, $p = 0.047$).

Model 2 accounted for 61.4% of the variation in DTA, as shown by a F value (11, 226) = 35.33, and a p-value = 0.001. Digitisation-enabled integration had a significant impact on DTA; ($\beta = 0.125$, $p = 0.007$), thus Hypothesis 1 is supported.

The Model 3 accounted for 64.6% of the variation in DTA, as shown by the F (12, 225) = 37.05, $p = 0.001$. Digitisation-enabled linkages strongly predicted DTA ($\beta = 0.25$, $p < 0.001$), thus Hypothesis 2 is supported. However, digitisation-enabled integration does not carry significant prediction after entering linkage as predictor.

Figure 4.1 Conceptual framework



Model 4 accounted for 65% of the variation in DTA, as shown by a F (13, 224) = 34.81, resulting in a p-value = 0.001. Two predictors of DTA had significant predictions, with a regression coefficient of the followings: open resource β = 0.11 and p-value = 0.069, linkage β = 0.206 and a p-value < 0.001. Thus, Hypothesis 3 is supported. However, digitisation-enabled integration has a β = -0.012 does not carry a significant result.

Model 5 accounted for 65.8% of the variation in DTA, as shown by the F (14, 223) = 33.55, resulting in a p-value of <0.001. This model illustrated the first SOI interaction with digitisation-enabled integration. Though the adjusted R squared change was little, however, the change carries a β = 0.012 with a significant F change p-value of 0.012. Thus, Hypothesis H1a is supported.

Model 6 accounted for 65.7% of variation in DTA with Hypothesis 2b produced an insignificant result. Model 7 achieved the highest variation in DTA at 66.6% with a significant F change at p-value 0.013. This model consisted of all interactions, however, only the interaction of SOI with open resource access carries a significant result at p-value = 0.013 with β = 0.018. Thus, Hypothesis 3c is supported. To check the magnitude of this model's effect size, I use Cohen f effect size to calculate the magnitude, derived a value of 1.2279 which indicates a large effect size (Cohen et al., 2013).

$$Cohen\ f = \sqrt{\frac{R^2}{(1 - R^2)}}$$

Overall, based on the result of analysis of variance (ANOVA), all the regression models carry statistically significant and good fit for the data. All models examine the direct correlation between the predictors, demonstrates positive correlations between the variables and DTA, yielding a statistically significant outcome.

As part of a robustness examination, the research examines if there is a normal distribution of errors. The histogram in Figure 4.2 (Appendix 4) displays data that have a normal distribution, since the bars representing the frequency of errors typically conform to the shape of a normal curve. In addition, the residuals plotted on a P-P plot illustrates in Figure 4.3 (Appendix 4) conform to the 45-degree line. Both the histogram and the P-P plot show no evidence of a violation of the normality assumption (Sarstedt et al., 2019). Finally, the study shown a Durbin-Watson statistic of 2.036 which is a good sign in regression analysis, indicating that the residuals are not autocorrelated and that the regression model's assumptions about the independence of errors are likely met (Ali & Sharma, 1993). This enhances the reliability and validity of the model's statistical inferences.

Using G*Power statistical tool, the study produced a power of 1.000, signifying highest likelihood of accurately rejecting a false null hypothesis. This indicates that the test was sufficiently powered to identify the observed effect size. An effect size of 1.2279 indicates a very big impact, much beyond established standards (Cohen et al., 2013), and implies a robust link between the examined variables. The noncentrality parameter of 292.24 enhances the test's robustness, while the crucial F-value of 3.881 indicates the lowest F-statistic necessary for statistical significance at the 5% level. Overall, the combination of substantial sample size and a considerable effect size yielded an extraordinarily high statistical power, hence reducing the likelihood of Type II error (false negatives). The data strongly validate the identified impact.

4.7. Discussion

Globalisation comes at an increasing cost. For instance, as the number of foreign personnel increases, it increases the liabilities related to internationalisation, which may have a detrimental effect on the firm's ability to access and integrate open resources access and take advantage of integration benefits (Marano et al., 2020). However, FSA that support digital platforms has its advantage because the ecosystems are not limited to a certain region and may be deployed internationally. Thus, open resource access to digital platforms greatly mitigates the challenges associated with the cost of internationalisation and, thereby, promotes the global expansion of both the EMNEs and their ecosystem partners (Verbeke & Hutzschenreuter, 2021). This finding of this research argues that the availability of open resources access via digital platform ecosystems enhances the traditional theory of ownership, hence augmenting the international growth plans of

EMNEs. It shown that open resources access accounted to a significant variability to DTA. It also shows that the DOI as a control variable, is a major factor influencing EMNEs' internationalisation strategies. To confirm this claim, DOI accounted for 40.8% (p-value < 0.05) variation in DTA for Model 5. Despite all these, the interactions using SOI as a moderator to test the impact on digitisation-enabled integration produced a variation of 1.2% with p-value < 0.05. Further, a better interaction results shown in Model 6 for digitisation-enabled integration with variation in DTA of 1.4% with p-value < 0.05. Thus, to improve DTA, the focus should be on using open resources access more effectively with combination of digitisation-enabled linkage and digitisation-enabled integration. This is illustrated in Model 7, the interaction of open resource and SOI resulted 1.8% variation in DTA. The emphasis on employing these advantages, as well as considering their ownership and control, location selection, and implementation of an internalisation strategy, suggests that EMNEs could develop innovative methods or approaches for expanding internationally (Nambisan et al., 2019).

To learn more about linkage advantage as a predictor in this study, its function comes from better connections between and within firms, as well as better relationships with international stakeholders made possible by more advanced digital connectivity (Luo, 2021). Thus, this nexus to the concept of integration advantage which suggests that increased connectedness or digitisation-enabled linkage, resulting from digitisation-enabled forces and international digital connections, promotes efficiency in international operations (Carnes et al., 2022). Indeed, the analysis results show a significant effect on the relationship between the digitisation-enabled linkage and the firms' DTA. This suggests that firms utilising digitisation-enabled linkages to strengthen their interconnections will establish their global value chain, disregarding location as a criterion. However, the lack of significance in the SOI interaction regarding the connection between digitally enabled links and DTA could be attributed to the lack of active engagement from stakeholders in the digital transformation process. This implies that a firm may not fully realise the potential benefits of digital linkages in strengthening its dynamic technological advantage without broader engagement from key stakeholders.

Moreover, this research argues that this new strategy complements the conventional eclectic paradigm theory of location, which asserts that EMNEs should evaluate their internationalisation strategies if there is a relative benefit in carrying out certain operations in a given country. The key argument here is that the evolving nature of the business environment compels modern firms to include digitisation-enabled technologies into their operations. While the electric paradigm theory asserts that relative location advantages are a key factor in a firm's choices to engage in FDI, this study argues that enterprises are utilising their digitisation-enabled resources to enhance their ecosystem. As the study finds that SOI is a matter of significance moderation variable accounted for

DTA, firms can expand greatly by improving their FSA; for example, focusing on digitisation-enabled integration and open resource access.

Digitisation-enabled integration may improve DTA, though, its effects from internationalisation speed are negligible. These results suggest that EMNEs should reassess their strategy for entering international markets, especially in terms of resource allocation and addressing internalisation concerns. As a result, EMNEs are encouraged to heighten their dynamic capability within technologically advanced digital ecosystems. Finally, the integration of digital technology is a global occurrence. As a result, EMNEs can take advantage of this phenomena to establish a global value chain by collaborating with stakeholders from different geographical locations with the ambition of building FSA.

The findings of this study indicate that SOI has significant impact on the relationship between open resource access, digitisation-enabled linkage, digitisation-enabled integration and global DTA. The findings complement to the existing body of internationalisation viewpoints, highlighting that SOI is a crucial factor in the context of the current digital age (Hilmersson et al., 2022; Stallkamp et al., 2022; Yang et al., 2017). However, while springboard perspective provides a more detailed understanding of how internationalising EMNEs navigate different environments of their home and host markets, it has not thoroughly examined the home-market context of emerging markets, despite their significant importance in international expansion via digitisation-enabled technology ecosystems.

The findings suggest that the advantageous of the new OLI extend beyond a specific area and have a broad influence on multiple predictors. This result strengthens understanding of the elements of the springboard phenomenon in the developing economy, as companies are actively searching for strategic assets, thus placing more emphasis on intangible assets that provide open access to resources. Hence, this study claims that it contributes to the knowledge of capabilities of springboard firms, amalgamation, ambidexterity, and adaptability (Li et al., 2022; Luo & Tung, 2018).

In addition, this research contributes to the new OLI perspective, thus illustrating the crucial relationship of SOI and DTA. It also gives theoretical insights which are about how EMNEs can effectively use resources to improves the FSA. Since the new OLI factors have shown a positive contribution to firms' DTA, there will be a high potential for resource compositional opportunities to enhance firms' dynamic capability. Thus, it supports the CBV, which explains how firms with average or generic resources may thrive and expand by using a compositional skill that allows them to compete with more well-equipped competitors, particularly in their own markets (Li et al., 2022; Luo & Child, 2015). Further, this study may contribute to the understanding of the behaviour of compositional springboarding firms by adding nuanced understanding to the proposed "*3A*

Springboarding capabilities with compositional view" synthesised stages of compositional springboarding capability application (Li et al., 2022, p.757).

4.8. Conclusion

Through this investigation, the literature evaluation of this study has discovered that previous research has shown a favourable relationship between the usage of digital platform ecosystem and DTA. Digitisation-enabled linkages greatly boost DTA, in addition, the advantages of open resource access and digitisation-enabled integration strengthening the models with significance results. The outcome from the study indicates that open access to resources, digital enabled linkage and integration are adding advantageous in intensifying the beneficial impact of EMNEs' FSA. These variables influence enterprises' decision-making on resource allocation and how they leverage their capabilities. Furthermore, these practical contributions made by the firms may also be used to assess their internationalisation strategies. This novel approach has transformed the capacity of companies to adapt and respond to changing circumstances. Firms are now focusing on gaining digitisation-enabled linkages and expanding linkage, rather than choosing important locations. The question is: ***"Are EMNEs reconsidering their internationalisation strategies in this digital era?"*** This research conclusively demonstrates that the new OLI variables have a substantial influence in the context under study boosting firms' opportunity in seeking capturing digital technology by creating FSA. Future study should explore context factors such as industry-specific emphasis, location-specific focus, and firm-level dynamic capacity focus. Drawbacks include the lack of assurance over the accuracy of the data and challenges related to sampling, as well as possible problems regarding the design and execution. Finally, while this analysis primarily examines Chinese enterprises, it is crucial to recognise that there are substantial variations in the institutional context across developing economies.

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Appendix 4

Figure 4.2 The histogram of errors of a standardised residual distribution

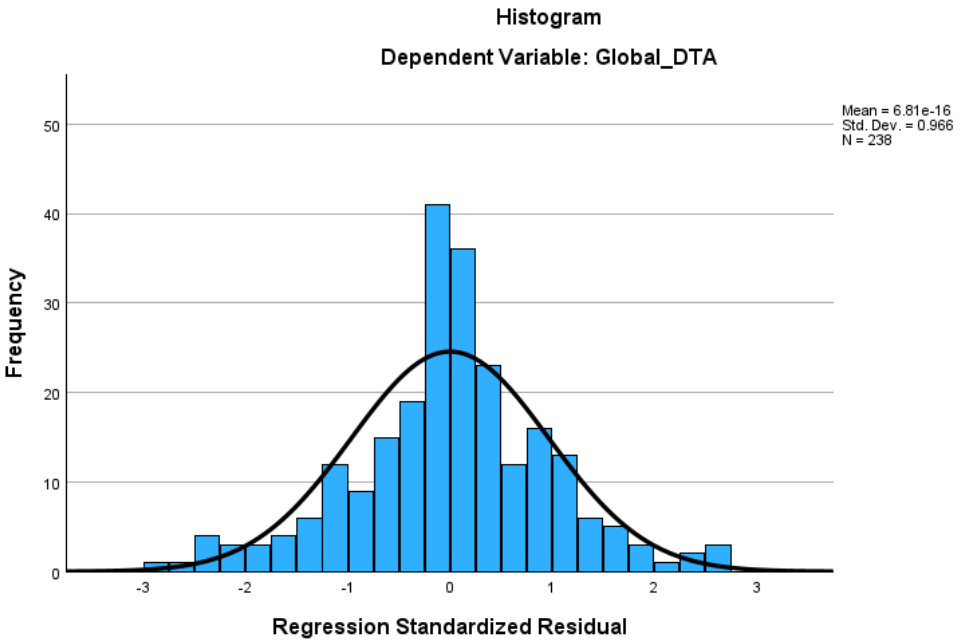


Figure 4.3 P-P Plot illustrates plot of regression standardised residual distribution

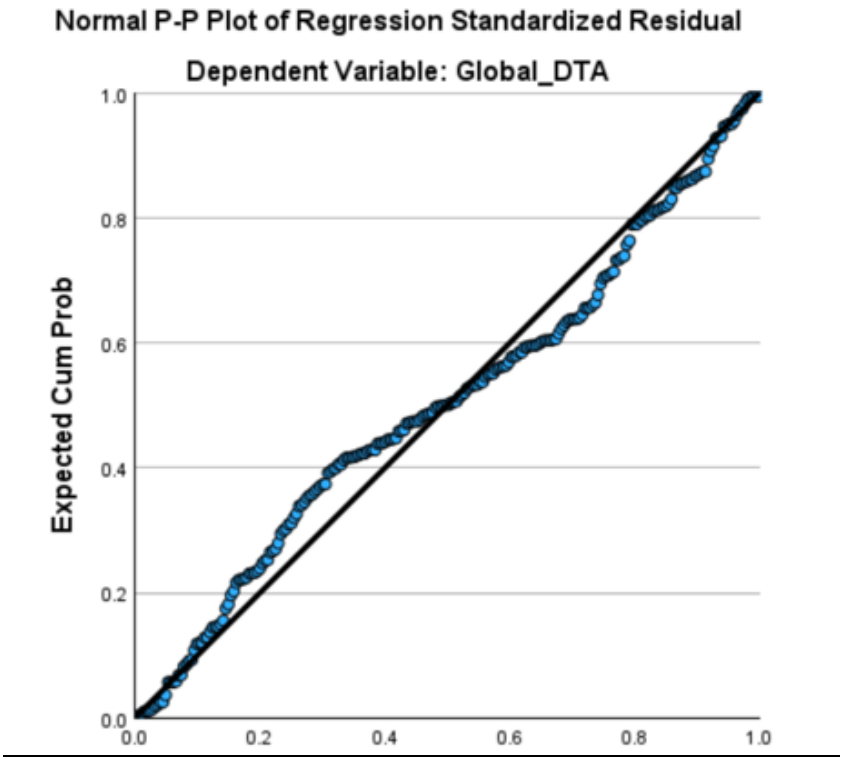


Table 4.7 Descriptive statistics and correlations of control variables and study variables

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1.Total Employees	2.72	0.82	-													
2.Percentage of Foreign Employees	2.92	0.82	0.55****	-												
3.Industry Type	9.33	5.44	0.06****	0.45****	-											
4.Position Title	2.63	1.08	-0.25****	-0.28****	-0.04	-										
5.Year in Position Held	7.77	5.97	0.51****	0.41****	0.01	-0.36****	-									
6.Year of Employment	9.27	6.48	0.46****	0.40***	-0.01	-0.47****	0.74****	-								
7. Local DTA	3.44	0.72	0.21****	0.22****	0.09*	-0.12**	0.25****	0.28****	-							
8. Degree of Internationalisation	.46	0.13	0.12*	0.06	0.01	0.00	0.01	0.09*	-0.02	-						
9.Open Resource Advantage	34.51	11.36	0.88*	-0.13***	0.06	-0.10**	0.21****	0.21	-0.08****	-0.12*	-					
10.Linkage Advantage	28.36	8.96	0.11**	0.14***	0.02	-.010***	0.22****	0.24****	0.12*	-.013**	0.70****	-				
11. Integration Advantage	17.32	5.51	-0.02	-0.07*	-0.09*	0.12**	-0.02	-0.006	0.14	-0.37****	0.28****	0.29****	-			
12. Global DTA	3.44	0.71	0.13**	0.20****	0.11**	-0·16***	0.18***	0.22****	0.77****	-0.02	0.62****	0.60****	0.51****	-		
13. Speed of Internationalisation	11.05	8.47	0.02	-0.08**	0.15***	0.05	-0.12**	-0.09*	-0.10*	-0.02**	-0.12**	-0.17****	-0.51****	-0.10**	-	
14. Education Level	5.61	0.92	0.31****	0.27****	-0.02	-0.28****	0.27****	0.31****	0.02	0.00	0.08*	0.12**	-0.02	0.10**	-0.12**	-

Note. *. p < 0.1; **. p < 0.05; ***. p< 0.01; ****. p< 0.001, N=Sample, M=Mean, SD=Standard Deviation; N=238

Table 4.8 Moderated hierarchical regression to show the predictors of DTA

DV: Digital Technology Adoption (DTA)	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
Control Variables							
Total Employees	-0.083*	-0.077*	-0.066	-0.060	-0.072	-0.071	-0.062
Percentage of Foreign Employees	0.051	0.051	0.052	0.052	0.066	0.065	0.056
Industries Type	0.07	0.07	.007	.007	.007	.007	.007
Position Title	-0.043	-0.047	-0.046	-0.045	-0.056**	-0.056*	-0.056**
Years Position Held	-0.003	-0.002	-0.005	-0.006	-0.003	-0.003	-0.003
Years of Employment	-0.003	-0.003	-0.004	-0.004	-0.005	-0.005	-0.005
Education Level	0.069**	0.070**	0.05	0.047	0.049	0.048	0.042
Degree of Internationalisation	0.314	0.338	0.364*	0.360*	0.408**	0.407**	0.392*
Local DTA	0.762****	0.688****	0.642****	0.593****	0.587****	0.587****	0.579****
Independent Variables							
Digitisation-enabled integration		0.125***	0.015	-0.012	-0.005	0.00	-0.010
Digitisation-enabled linkages			0.250****	0.206****	0.178***	0.176***	0.165***
Open resource access				0.113*	0.100*	0.104*	0.098*

Moderator - SOI							
Digitisation-enabled integration X Speed					0.012**	0.014**	0.011
Digitisation-enabled linkages X Speed						-0.003	-0.011
Open resource access X Speed							0.018***
Model fit							
N	238	238	238	238	238	238	238
R^2	0.620	0.632	0.664	0.669	0.678	0.678	0.687
Adjusted R^2	0.604	0.614	0.646	0.650	0.658	0.657	0.665
F Value	37.10****	35.33****	37.05****	34.81****	33.55****	31.22****	30.36****

Note. *. p < 0.1; **. p < 0.05; ***. p< 0.01; ****. p< 0.001, N=Sample, M=Mean, SD=Standard Deviation; N=238

Chapter 5. The Impacts of Managerial Cognitions on Digital Technology Adoption and EMNEs' International Performance [12]

Study 3

This paper has been accepted for paper development workshop at the Academy of International Business Oceania in 2024 (Sydney, Australia), with the title: *"The Impacts of Managerial Cognitions on Digital Technology Adoption and Firm's Performance"*

This paper has also been presented at *Academy of International Business Asia Pacific* in 2024 (Guangzhou, China), with the title *"Managerial Cognitions in the Digital Era"*

Abstract

The impact of digitisation on globalisation has been apparent, leading to a faster and more pervasive internationalisation process. Therefore, for emerging market multinational enterprises (EMNEs) to attain global competitiveness, managers must possess significance managerial cognitions capabilities. This research utilises the upper echelons viewpoint to investigate the cognitive skills and conduct of managers, which affect the link between global digital technology adoption (DTA) and international performance. The study's result shown significant interplay between global mindset, perceived psychic distance (PPD) and global DTA, in which strengthens the study's assertion that managerial cognition and DTA must correspond with both global and local elements for enduring international performance. While DTA is the significant determinant of international performance, the study seeks to expand and enhance the concept of competitive advantage in the international business environment by illustrating how managers use a composition-based view (CBV) to create unique advantages for their firms or reduce competitive disadvantages. This research offers management implications for how businesses might set themselves apart from resource-rich firms, especially in borderless sectors.

[12] Parts of the section in Chapter 5 have been submitted as my PhD Thesis Proposal Defence

5.1 Introduction

The effect of digitalisation on globalisation has been evident, and the process of internationalisation has become more rapid and prevalent (Ghauri et al., 2021; Meyer et al., 2023; Strange et al., 2022). The recent introduction of Chinese company DeepSeek's latest Artificial Intelligence (AI) models are 20 to 50 times more cost-effective than OpenAI's o1 model, presenting a competitive threat to the current digital technology environment (Reuters, 2025). President Donald Trump said that the abrupt emergence of the Chinese artificial intelligence application DeepSeek "should serve as a wake-up call" for American technology firms (Ingram, 2025). Thus, with the rapid advancement of digital technology, emerging multinational enterprises (EMNEs) are keen to discover the prerequisites of managerial cognitive capabilities, particularly to compete in this global emerging trend (Neumeyer & Liu, 2021).

This research seeks to exemplify the significance of managerial cognitions, as shown by the incapability of managers from incumbent organisations (e.g., Blockbuster, Motorola, Nokia, and Kodak) to recognise rising trends that ultimately disrupted their industries (Vecchiato, 2017). In essence, managers' capabilities in their home countries play a significant role in their firms' digital transformation, as they are the central organisational units of a multi-business enterprise (Collis et al., 2007; Menz et al., 2021). In addition, digital technologies seem to facilitate the creation of increasingly disaggregated and geographically distributed corporate headquarters, resulting in organisations that are now less clearly defined (Kunisch et al., 2020). Especially in the digital age, the assumptions of bounded rationality (Menz et al., 2021; Nambisan, 2017), problemistic search (Dong et al., 2021; Surdu et al., 2021), and satisficing behaviours (Menz et al., 2021), which are fundamental to the behavioural theory of the firm, may possibly complicate the decision-making process at the home countries of EMNEs (Cyert & March, 1963; Menz et al., 2021). Conceivably, digital technologies such as artificial intelligence (AI) embedded platforms may not need bounded rationality, considering the limitations of human information processing; thus, extensive knowledge is beneficial for enhancing AI's function in decision-making (Menz et al., 2021). Chen et al. (2022) investigate the technology recombination effect of learning process on industrial catch-up performance in China; nevertheless, it overlooked the substantial influence of management cognitive talents in the process. This suggests the necessity of a more comprehensive understanding of the cognitive capabilities of managers in the digital era, which can be derived from both traditional company theories and concepts from digital technologies. Furthermore, a study indicated that managerial attention is a significant factor influencing digitalisation, with findings showing that younger leadership teams tend to devote more attention to digital transformation, while older teams may have a detrimental impact (Luo et al., 2024). However, the study does not address the underlying capabilities of managers that may drive these differences. Consequently, it is crucial to investigate

how managerial cognitive capabilities could augment EMNEs' relationship between global digital technology adoption (DTA) and international performance.

Global DTA refers to the integration of digital technologies resulting from the diffusion of global technologies across global network partners. Comprehending these mechanisms is essential for EMNEs to proficiently navigate their internationalisation processes and sustain competitiveness by leveraging digital technologies in the global market. This presupposes that the decisions made by managers of EMNEs in their home countries especially regarding global DTA have a significant impact on the international performance of these organisations (Kumbure et al., 2020). Furthermore, firms must have dynamic managerial skills to increase their likelihood of success in the digital transformation space (Javidan & Bowen, 2013; Meyer et al., 2023; Volberda et al., 2021). Solberg et al. (2020) assert that a successful digital transformation necessitates the use of diverse digital mindsets inside an organisation. Despite much research on the impact of management competencies on company performance, there is a paucity of empirical studies connecting managerial traits to digital technology and organisational performance (Neumeyer & Liu, 2021). Thus, this research elucidates the contemporary problem by delineating and examining the global mindset and perceived psychic distance (PPD) of managers at EMNEs in China.

Several studies suggest that managerial trait such as global mindset may correlate with a firm's international performance (Javidan & Bowen, 2013; Knight, 1997; Nummela et al., 2004). Gupta and Govindarajan (2002) contend that global mindset is an aspect of organisational cognition essential for seeing and pursuing possibilities, even in varied and distant regions. Andersson and Evers (2015) found that managers of EMNEs that possess global mindset are better able to see opportunities in international markets and capitalise on them. Furthermore, Baden-Fuller and Teece (2020) argued that the development of a global identity increases EMNE managers' awareness. The authors argued that the trait enhances a cognitive mechanism through individuals and improves the micro-foundation processes of perceiving, seizing, and transforming capabilities in the international marketplace. Yet, little is known about the impact of global mindset between DTA and firm international performance. Therefore, global mindset is a suitable moderator for this study, as harnessing global digital technologies requires managers with distinct capabilities of perceiving, seizing, and transforming opportunities in diverse cultural contexts. This ability not only allows organisations to navigate complex international environments but also fosters innovation and competitive advantage in an increasingly interconnected world.

PPD refers to the psychological distance between a firm's home market and a foreign market, arising from perceived cultural, languages, and business disparities (Evans & Mavondo, 2002; Evans et al., 2008). This paper view that managers are more likely to regard digital technology as a means of reducing those psychological barriers (Ambos et al., 2019). In essence, Stallkamp and Schotter

(2021) stated that digitalisation has facilitated the emergence of enterprises using platform business models across all economic sectors, irrespective of geographical distances between nations. Consequently, the advent of digital technology has reduced entrance barriers to international markets and transformed company strategies to promote more global integration (Gefen & Carmel, 2008; Nachum & Zaheer, 2005; Pisani et al., 2020; Yamin & Sinkovics, 2006). Thus, Bouncken et al. (2023) advocate for more study to enhance the knowledge of cultural differences, specifically on the idea of PPD and its impact on the adoption of digital technology.

While for global mindset, it is often regarded as a critical managerial trait for managing digital transformation and internationalisation (Chang & Huang, 2022). This mindset enables leaders to navigate diverse markets effectively, fostering innovation and adaptability within their organisations. Similarly, PPD is recognised for fostering firms' innovation propensities while mitigating the performance gap induced by uncertainty (Azar & Drogendijk, 2014; MacCormack & Verganti, 2003; Özsomer et al., 1997). By embracing various cultural perspectives, managers can better align strategies with local needs while driving digital growth, improving firms' innovation and transformation (Feliciano-Cestero et al., 2023).

Although Johanson and Vahlne (2006, 2009) stated that greater PPD incurs greater liability of foreignness, this paper argues that PPD and global mindset are suitable moderators for further firms' behavioural study for the following reasons. First, both moderators, especially PPD provides a comprehensive framework for understanding how cultural differences impact business strategies (Azar & Drogendijk, 2014; Yamin & Sinkovics, 2006). The study could contribute by examining how cultural intelligence can enhance the understanding and management of global mindsets and psychic distance in international business. Second, they underscore the necessity for organisations to develop tailored strategies that account for varying levels of global mindset and psychic distance, ultimately strengthening their global performance. This approach is novel, as complementary the level of global mindset and psychic distance requires understanding of local knowledge while minimising risks associated with foreign operations (Vătămănescu et al., 2020). Finally, exploring these moderators can reveal insights into the adaptive strategies that organisations can implement to mitigate challenges stemming from psychic distance, thus strengthening overall performance in global markets (Azar & Drogendijk, 2014). By systematically analysing the interplay between these factors, EMNEs can better navigate the complexities of international expansion, thus optimising liabilities of foreignness and improving international performance.

I employ the composition-based view (CBV) (Luo & Child, 2015) of firm development to analyse the links among factors. The concept of the CBV emphasises that enterprises with similar resources may achieve remarkable results by effectively using their existing resources and unique integration talents (Luo & Child, 2015). I seek to expand and enhance CBV within the international

business (IB) framework by illustrating how managers use a composition strategy to create firm-specific advantages or alleviate competitive disadvantages during post-entry internationalisation efforts. This approach emphasises the strategic choices made by managers to leverage unique resources and capabilities, enabling firms to thrive in global markets. Apart from that, I aim to provide insights into effective management practices that can lead to sustainable competitive positioning in international contexts. Primarily, I investigate the following research question: **How does global DTA influence firms' international performance, and what role do PPD, and global mindset play in moderating this relationship through the lens of the CBV?**

The research question aims to elucidate the intricate internationalisation patterns and strategies of EMNEs in the digital economy by employing the resource-constrained view, potentially undermining some conventional competitive advantages of these enterprises.

5.2 Theoretical Background

This study builds on the behavioural theory of the firm (Cyert & March, 1963), employs the upper echelons perspective by Hambrick and Hambrick et al. (2007; 1984) to examine managers' cognitive capabilities and behaviour impacting the relationship of DTA and international performance. The theory posits that the attributes of senior managers significantly influence and forecast strategic choices and organisational performance. This body of study mostly posits that decision-makers affect the outcomes of their organisations. On the other hand, firm-level factors such as resource constrains, might alter the cognitive and emotional reactions of decision-makers (Ozgen et al., 2021). This disparity in perspective, particularly regarding digital technology as resources, has been empirically underexplored within the study domain of upper echelon theory and international business.

Particularly, with the emergence of digital era, management experiences and resources alone cannot adequately elucidate the theory without considering the effects of PPD, global mindset, and examining it from the perspective of the resource-constrained view of CBV. Furthermore, it involves evaluating how the thoughts and perceptions of managers affect the implementation of digital technologies that are diffused by strategic partners from both the home and host countries (Kano et al., 2020; Luo & Child, 2015; Luo & Tung, 2018; Van Zeebroeck et al., 2021). Through the lens of CBV, the study also views digital technologies as constrained-resources and managers of EMNEs utilising similar resources may achieve remarkable results by effectively employing their unique talents in leveraging those digital technologies.

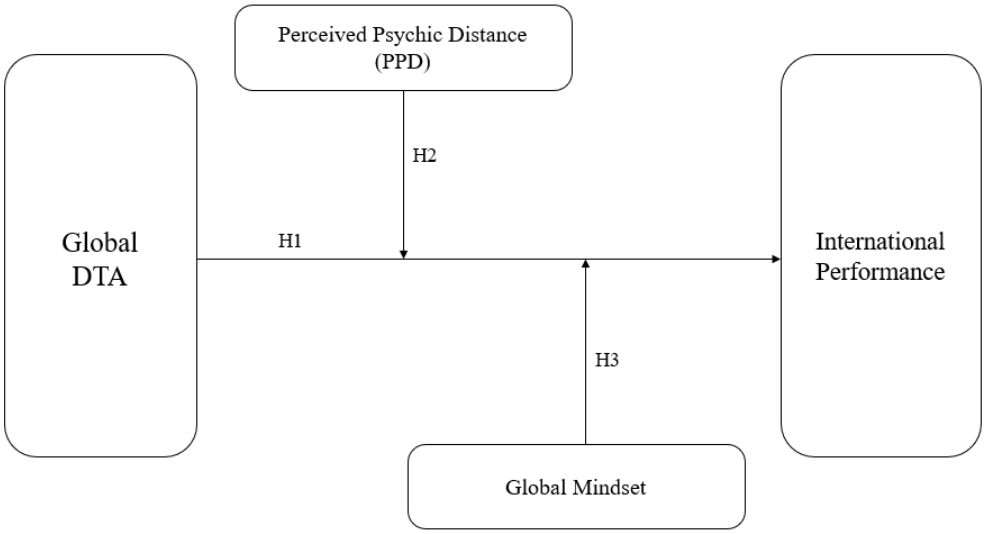
Furthermore, Johanson and Vahlne (1977) define the original Uppsala psychic distance notion as the aggregate of variables that hinder the exchange of information to and from the market, including disparities in language, education, business procedures, culture, and industrial progress. According to Griffith and Dimitrova (2014), there are two unique components that make up psychic distance: cultural distance and commercial distance. Business distance pertains to views of dissimilarity about the economic climate, legal and political factors, business practices, market structure, and language, while cultural distance relates to perceived variances in cultural values, which may influence DTA decisions (Dikova, 2009). Also, PPD refers to a certain set of cultural and cognitive traits that may either hinder or facilitate a company's expansion into international markets (Ambos et al., 2019; Azar & Drogendijk, 2014). This illustrates the managers' inclination towards a gradual focus of certain markets with less cognitive distance, believing that this approach mitigates risk (Nordman & Tolstoy, 2014). However, Evans and Mavondo (2002) and O'Grady and Lane (1996) stated that the psychic distance paradox arose when some findings indicating a positive relationship effect of psychic distance on the performance of firms and in contrast, some studies obtained a negative relationship (Stöttinger & Schlegelmilch, 1998). The existence of a psychic distance paradox makes this study essential, particularly with the advent of digital technology; the investigation of PPD may provide significant contributions to the field of behavioural research.

Based on the upper-echelons approach, the cognitive processes of senior managers can be considered as the origin of firm behaviour (Hambrick & Mason, 1984). Therefore, comprehending the mental models of senior managers is essential for a complete explanation of firm behaviour in relation to the adoption of technologies (Cannella et al., 2009). The complexity of decisions regarding internationalisation may exceed the predictions made by current models due to the dynamic and diverse nature of firm behaviour (Puig et al., 2019; Santangelo & Meyer, 2017). This behaviour is influenced by the diverse experiences, goals, and expectations of decision-makers (Surdu et al., 2021). Besides, Luo (2021b) argues that the underlying behaviour, culture, structure, and routines that promote connection and transform digital architecture to capabilities need additional exploration.

Moreover, I employ composition-based view (CBV) (Luo & Child, 2015) of firm growth to examine the variables' relationships. Using global DTA as predictor and international performance as outcome variable, the study could provide how and why emerging market firms can thrive in heightened global competition over time while missing generally identified monopolistic advantages like international market dominance, brand images, organisational reputation, customer loyalty, and proprietary technology (Luo & Bu, 2018). In addition, Zhou et al. (2020) contend that compositional expertise is often shown via gradual or economical innovation rather than radical innovation. This allows businesses with little resources to differentiate themselves from organisations with abundant

resources, particularly in industries with unclear borders. Figure 1 illustrates the conceptual framework of the study.

Figure 5.1 Conceptual framework



5.3 Hypotheses Development

The upcoming sections demonstrate the evolution of the hypotheses, showcasing their formulation based on preliminary research findings. I will examine each hypothesis in detail, along with the rationale behind its development and the anticipated implications of the results.

5.3.1. Global DTA and International Performance

The use of digital technology improves firms' performance through a complex array of causal factors functioning at both strategic and operational levels (Bhandari et al., 2023; Blichfeldt & Faullant, 2021; Usai et al., 2021). These practices not only mitigate internal organisational limitations such as bounded rationality and resource constraints, but also provide more flexible and informed responses to the complexity of international marketplaces (Menz et al., 2021). To develop a solid basis for this investigation, it is crucial to clarify these processes, especially with later hypotheses that include moderating variables such as PPD and global mindset.

Digital technologies are known to empower firms to overcome informational constraints by facilitating the rapid collecting, processing, and analysis of extensive market data (Fitzgerald et al., 2014). Instruments like big data analytics and AI-generated insights substantially diminish

informational asymmetries, enabling managers to identify market trends, customer behaviours, and emerging threats with enhanced precision (Nambisan et al., 2019). This improved data capacity facilitates more informed decision-making about resource allocation, market entrance tactics, and product localisation (Nambisan, 2022). With access to real-time information, organisations may rapidly modify their strategy, thereby alleviating the uncertainties often linked to international operations (Bharadwaj et al., 2013).

How can human cognitive capabilities manage massive amounts of intricate data without overlooking critical insights? According to the behaviours theory of the firm, managers often face limitations due to finite cognitive resources, hindering their capacity to analyse intricate information (King, 2007; Kunc & Morecroft, 2010). Digital technologies mitigate constrained rationality by automating regular analytical activities and offering advanced decision support tools (Ferràs-Hernández, 2018; Loebbecke & Picot, 2015). This automation liberates managerial cognitive capacities and ensures that decisions are informed by thorough and current information. As a result, firms are more adept at navigating the intrinsic uncertainties of global markets, facilitating more efficient and prompt strategic decisions (Nambisan, 2017).

The CBV asserts that firms, especially EMNEs, depend on the integration and recombination of their current resources to compete on a global scale (Luo & Child, 2015). Digital technologies act as essential facilitators in this process by optimising internal processes and intensifying cross-functional collaboration. Digital platforms can optimise supply chain management, synchronise production schedules across geographically distributed divisions, and improve customer relationship management systems. Enhancements in operational efficiency reduce expenses and enhance responsiveness, hence immediately facilitating enhanced international performance.

In the swiftly evolving global business landscape, adaptability is a crucial factor in establishing competitive advantage. Firm with escalated DTA provides them with the agility to adjust to changing market circumstances and customer preferences. For example, real-time collaboration platforms and automated monitoring systems enable organisations to swiftly address competitive threats or regulatory alterations. This adaptability is especially crucial in international circumstances, where the dynamic of market change may significantly vary from the local environment. Digital technologies enhance enterprises' competitive advantage on the global arena by minimising the delay between market signal recognition and strategy response(Gao et al., 2023; Shahadat et al., 2023).

Digital technologies facilitate the alignment of a company's strategic goals with its operational capabilities, ensuring coherence across various international marketplaces. By using integrated digital platforms, firms may maintain a cohesive global strategy while simultaneously accommodating local market peculiarities. The capacity to integrate globally while being responsive locally is crucial for maintaining competitive advantage. The digital infrastructure facilitates

centralised decision-making and ensures the dissemination of optimal procedures and innovations across international units, ultimately integrating the firm's overall performance.

Digital technologies facilitate organisations in functioning more efficiently and effectively across international boundaries. They assist firms in optimising communication, coordinating international supply chains, analysing market data, and localising products (Zhang et al., 2024). These competencies enable organisations to adjust to foreign markets, minimise expenses, refine decision-making, and augment consumer involvement, all of which promote international performance (Luo & Tung, 2007).

Firstly, regarding operational efficiency, digital solutions may automate procedures, optimise resource management, and improve productivity (Topic & Biedermann, 2020). For EMNEs, these efficiencies help mitigate the challenges of operating in many markets. Secondly, digital technology enhances market responsiveness; for instance, technologies like CRM systems, big data analytics, and AI enable firms to comprehend and react to local market needs more swiftly (Sundu et al., 2022). This enhanced responsiveness may lead to improved customer satisfaction, more revenue, and a more robust competitive position in international markets. Furthermore digital technologies provide enhanced coordination and integration of foreign operations, optimising collaboration across geographically dispersed teams, subsidiaries, and partners (Nambisan, 2022). This results in better alignment of objectives and resources, hence strengthening overall international performance. Thus, I hypothesise the following:

Hypothesis 1: Global DTA has a direct positive relationship with international performance, such that higher levels of global DTA led to improved firms' international performance.

5.3.2 Global DTA and International Performance – moderated by PPD

Johanson and Vahlne (2009) highlight that firms often adopt digital technologies to mitigate the perceived challenges of operating in psychically distant markets, thus facilitating smoother international operations. When managers recognise significant psychic distance between home and host countries, characterised by disparities in language, culture, and business practices they are inclined to see digital technology to mitigate these differences (Ambos et al., 2019). Thus, it can be assumed that higher PPD may compel companies to use digital solutions for more effective administration of cross-border activities, especially in communication, data management, and customer interaction. Technologies include cloud platforms, collaboration tools and data analytics provide real-time coordination across several locations, hence diminishing the PPD among firms (Ambos et al., 2019). Additionally, robotic process automation, augmented or virtual reality and AI could facilitate the automation of tasks, customisation of experiences, enhancement of predictive

capabilities, optimisation of operations, and stimulation of innovation within organisations (Azar & Drogendijk, 2014). Besides, research by Maitland and Sammartino (2015) supports the view that PPD increases the perceived risk in international ventures, which often triggers the adoption of risk-mitigating technologies.

Blomkvist et al. (2020) indicate that digital technologies play a critical role in managing knowledge transfer, especially in firms operating in culturally distant markets. PPD may serve as a catalyst for the use of digital technologies that enhance knowledge transfer and organisational learning. When managers recognise the disparities between home and host nations, they may use technology to improve the exchange of market intelligence, cultural understanding, and operational methodologies across borders (Kedia & Mukherji, 1999). Technologies such as AI-driven decision support systems and knowledge management platforms enable organisations to assimilate and use pertinent information from remote marketplaces, resulting in enhanced decision-making (Rezaei et al., 2024).

The research by Evans et al. (2008) indicates that when PPD increases, firms are more likely to modify their strategies significantly. In essence, PPD may serve as a catalyst for global DTA by motivating managers to embrace digital solutions that alleviate the perceived risks, obstacles, and uncertainties associated with operating in psychologically distant foreign markets. Technologies bridge communication and operational barriers, enhance knowledge exchange, and provide strategic benefits, resulting in more successful internationalisation initiatives. Therefore, firms in markets with high PPD are likely to adopt technologies, resulting in adding benefit from adopting digital technologies, which can explain the positive interaction between DTA and PPD.

Hypothesis 2: The relationship between firm's global DTA and international performance is positively moderated by managers' PPD, such that higher level of PPD strengthen the positive impact of DTA on international performance.

5.3.3 Global DTA and International Performance – moderated by global mindset

The study examines the role of managerial global mindset, which represents top-level managers' openness to diverse and international markets and their ability to operate successfully across borders. The question is, how might managerial global mindset influence their willingness or ability to adopt digital technology in multinational settings, which may lead to improved firms' international performance?

Global mindset is widely seen as a crucial management trait for managing digital transformation and internationalisation (Meyer et al., 2023). Leaders with global mindset are more

adept at assimilating various knowledge, hence improving organisational performance (Eriksson et al., 2014; Nummela et al., 2004). This argument supports by a research which indicate that firms need to build dynamic managerial capabilities to enhance their likelihood of success in digital transformation (Meyer et al., 2023). The point brought forward is that firms managed by managers with high global mindset may likely to excel compared to their counterparts, especially in sectors experiencing digital disruption. The current digitalisation business environment demand managers in organisations to make critical decisions, such as the deciding on the type of digital technologies for integration, to enhance their operation efficiency. Therefore, managers who possess an enhanced global mindset become critical traits that can manage global DTA, as top-level managers from different cultures and countries have distinct tolerance thresholds for uncertainty and ambiguity (Barkema & Vermeulen, 1997; Carpenter et al., 2001).

Moreover, global DTA, in this context, serves as an essential instrument for mitigating uncertainty, augmenting communication, and bolstering market response. Consequently, PPD is anticipated to influence the relationships between global DTA and international performance, with increased PPD leading to a heightened dependence on digital technology, lead to likelihood of an improved international performance results. In addition, global mindset and global DTA in relation to international performance suggests that while both variables may individually contribute to improved performance, and their combined effect may create a greater variation in international performance. This study argues that managers with a strong global mindset possess strong capacity to navigate intricate international marketplaces using digital technology (Beechler & Javidan, 2007). This may lead to a stronger decision-making capability, particularly for managers with a higher global mindset, potentially strengthening their global DTA level. Consequently, they possess technology resources and global mindset, enabling them to navigate cultural nuances effectively. As a result, this study made the following hypotheses:

> **Hypothesis 3**: The relationship between firm's global DTA and international performance is positively moderated by managers' global mindset, such that higher level of global mindset strengthening the positive impact of DTA on international performance.

5.4 Methods

5.4.1 Preparation of questionnaire

To investigate the theories and support the model, an empirical study was conducted. The questionnaire was composed of a predefined list of structured and ordered questions. The participants

were asked to respond to the questions using a 5-point Likert scale, with 1 representing “strongly disagree” and 5 representing “strongly agree” (Likert, 2017).

Based on the feedback from six experts in multinational corporations and scholars in international business, the questionnaire was streamlined. After the pretest, a sample of thirty respondents was selected using purposive selection for the pilot test. The main survey omitted these people. Analysing their responses to the first trial helped refine the language, organisation, and structure of some questions to enhance their clarity, understandability, and diversity. Following a range of remedial protocols, a final count of 29 questions was established.

5.4.2 Data Collection

The process included using data released by the Chinese Ministry of Commerce and the State-Owned Assets Supervision and Administration Commission. These organisations are essential components of the Chinese government's primary legislative bodies that supervise and regulate companies. The dataset offers precise information on the global frequency and percentage of international sales for classification purposes. This study use stratified sampling, as delineated by Patton (1990).

A minimum of two thousand stratified multinational companies (MNEs) situated in economically developed areas of China were the targets of the study. The study suggests sending an initial request to volunteers using the WeChat application, along with detailed information about the research. The email correspondence includes a demand for participants to complete a participants-information-sheet eligibility form, as well as research questionnaires. Overall, the study obtained a response rate of 15%, equivalent to 296 replies. However, 58 respondents provided missing data, largely because they did not complete the required questionnaires. The remaining 238 samples were completed. Participants must satisfy some conditions in order to take part in the survey. Prior to commencing the survey, the prospective participants are required to consent to the screening criteria. They must have significant influence in determining the strategic development of the company. This includes managers or executives holding high-level executive roles. Selection of participants from multinational enterprises (MNEs) must adhere to the following criteria:

i. working with a company must have global sales.

ii. working with a company must have global presence.

iii. the executives must hold a position of influence within the organisation

5.4.3 Biases control

Utilising the randomisation of question order strategy, the survey was implemented using Qualtrics survey software in an effort to decrease common method variances (CMV). The editors of the Journal of International Business Studies (JIBS) (Chang et al., 2010) suggested this method for reducing bias. A temporal separation of measurements was implemented in the study conducted by Barden, Steensma, and Lyles (2005), wherein the researchers intentionally modified the sequence of questionnaire items. The rationale for the methodological choices was to reduce the potential impact of CMV on the relationships between dependent, independent, and control variables (Chang et al., 2010). Additionally, as shown by Podsakoff et al. (2003), I used a greater number of objective questionnaires that had a lower likelihood of being associated with CMV.

To assess non-response bias, I conduct a t-test on our data by comparing earlier and later replies. The descriptive statistics of the categories are presented in Table 5.1. The null hypothesis, which states that the group means are equivalent, cannot be rejected, as indicated by the results of the independent sample t-test, as illustrated in Table 5.2. According to the non-significant t-statistics for dependent, independent, and moderating factors, the feedback between the early response group and the late response group is not statistically different. As a result, our data is absent from non-response bias, as evidenced by the insignificant t-test results, which implicitly imply that the late response group closely resembles the non-respondents (Armstrong & Overton, 1977).

Moreover, in applying Harman's single factor test to assess common method bias in the data, the cumulative variance explained by the single factor was found to be 21.78%. This result indicates that the one factor accounts for less than 50% of the total variance, suggesting that common method bias is not a significant issue in the data (Podsakoff et al., 2003).

Table 5.1 Group descriptive statistics for the early and late respondents (N=238)

Variables	Response		N	Mean	Standard Deviation	Standard Error Mean
Global DTA	Early		103	3.366	0.753	0.074
	Late		135	3.509	0.674	0.058
Global Mindset	Early		103	3.633	0.562	0.055
	Late		135	3.747	0.602	0.051
Psychic Distance	Early		103	3.582	0.663	0.065
	Late		135	3.660	0.664	0.057
International Performance	Early		103	3.475	0.780	0.076
	Late		135	3.518	0.845	0.072

Table 5.2 Non-response bias test results (earlier/later responses)

Variables	t	*df*	Sig. (2-tailed)
Global DTA	-1.547	236	0.123
Global Mindset	-1.496	236	0.136
Psychic Distance	-0.892	236	0.373
International Performance	0.400	236	0.690

Note: N=238

5.5 Modelling procedure

This study used hierarchical multiple regression techniques to investigate the comparability and relationship among variables (Lindner et al., 2021). Furthermore, this research employs a micro-level analysis to examine the association among the variables. An analysis of the study's results was conducted via three crucial phases. Firstly, the scale's descriptive statistics and reliabilities were computed, and the Cronbach's alpha value was reported. The second part of the study employed the Pearson Product moment correlation to evaluate the relationship between DTA parameters, PPD, global mindset and international performance. The final stage included doing a moderated hierarchical regression analysis to assess the correlation among DTA, PPD, global mindset, and international performance.

5.5.1 Measurement of DTA

Building upon Van Zeebroeck et al. (2021) global DTA measurement, Jones et al. (2020) and Kritzinger et al. (2018) have classified digital technologies into four distinct groups based on their purposes: digital services, digital shadow, digital twin, and digital model (Jones et al., 2020; Kritzinger et al., 2018) (refer to Table 5.3). The objective of the questions is to determine the level of dedication towards digital technology that has undergone testing, adoption in at least one functional domain, or extensive implementation throughout the business.

Table 5.3 Type of digital technologies

Types of Digital Technologies	Functions	Categories of Digital Technologies by Function
Traditional Web	Websites that adapt to dynamic and interactive web technologies which offer greater functionality and user engagement.	**Digital Services** (Cloud-Web Technology)
Cloud-based Services	The utilisation of third-party providers to host and deliver software applications, storage, and other computing resources over the internet,	

	as opposed to accessing and storing them locally on a user's device.	
Mobile Internet	The mobile internet has facilitated the ability of users to remain connected and obtain information and services while on the move, rendering it an indispensable component of contemporary communication and commerce.	**Digital Shadow** (Internet Technology-enablers)
Big Data	Big data is of paramount importance in the process of digitalisation as it facilitates data-centric decision-making, operational optimisation, and enhancement of customer satisfaction for organisations.	
Internet of Thing (IoT)	Technology-enabler of network of physical devices that allows users to collect and analyse data from a wide range of sources.	
Artificial Intelligence (AI)	AI facilitates the automation of tasks, customisation of experiences, enhancement of predictive capabilities, optimisation of operations, and stimulation of innovation within organisations.	**Digital Twin** (AI Technology)
Deep Learning	The capacity to autonomously acquire knowledge and adjust to novel information, thereby enabling the system to progressively enhance its precision and efficacy with the passage of time.	
Augmented Reality/Virtual Reality (AR/VR)	This technology facilitates the creation of immersive and interactive experiences for various stakeholders, including customers, employees, and other interested parties.	**Digital Model** (High-Value Tasks Technology)
Robotic and Robotic Process Automation (RPA)	Technology-enabler that allows users to create machines that can be programmed to perform a wide range of tasks to improve efficiency.	
Additive Manufacturing	Technology that can create physical objects by prototyping, tooling, and production of final parts for industries.	

Adopted from:(Jones et al., 2020; Kritzinger et al., 2018; Van Zeebroeck et al., 2021) [13]

[13] The type of digital technologies is adopted from two sources:
1) Jones, D., Snider, C., Nassehi, A., Yon, J., & Hicks, B. (2020). Characterising the Digital Twin: A systematic literature review. CIRP Journal of Manufacturing Science and Technology, 29, 36-52.
2) Van Zeebroeck, N., Kretschmer, T., & Bughin, J. (2021). Digital "is" strategy: The role of digital technology adoption in strategy renewal. IEEE Transactions on Engineering Management, 70(9), 3183-3197.

5.5.2 Measurements of PPD

PPD data are collected using survey-based perceptual assessments as described by Evans and Mavondo (2002). Survey-based perceptual measurements are seen as more accurate than archival index measures for three specific reasons (Ellis, 2008; Evans & Mavondo, 2002). Firstly, an individual or managerial level should be used to measure psychic distance rather than a national or country level since it captures the person's perceived level of uncertainty about the foreign market due to cultural and business differences (O'grady & Lane, 1996; Sousa & Bradley, 2006). The psychic distance that managers experience at the sub-national level is not captured by most archival indices because they compute it on a national scale, which ignores individual differences and experiences, as well as regional and industrial differences between the host and home countries (O'grady & Lane, 1996). Second, while the utility of archive index measures is limited by their infrequent updating (Cui & Jiang, 2012) there is also evidence to show that archival index usability is negatively impacted by missing data and inaccurate index definitions (Meyer et al., 2009). Finally, survey-based perceptual measures may give researchers insight into decision makers' perspectives on the environment in which they operate, even though they lack the objectivity of archive indices and may result in common method variance (Santangelo & Meyer, 2011).

5.5.3 Measurement of global mindset

A total of forty perceptual measuring items, derived from Arora et al (2004), were used to assess global mindset. The participants were instructed to designate the two evident elements, namely the level of conceptualisation and contextualisation of global mindset in their professional and personal life, using a numerical scale ranging from one to five.

5.5.4 Measurement of international performance

International performance, as defined by Riviere and Romero-Martínez (2021), Li and Atuahene-Gima (2001), and Ghauri et al. (2016), is a subjective indicator of corporate performance based on management satisfaction with sales growth and financial performance. Respondents assess their satisfaction level with the company's year-over-year sales growth, profit growth, nett income, and financial performance compared to competitors over the most recent three years. The assessment of international performance consists of four components.

5.5.5 Control variables

I included the variables of company size, industry type, degree of internationalisation, local DTA into the study to reduce the impact of unrelated factors on the research question. These concern the degree to which local stakeholders, company size, and industry categorisation contribute to the local DTA. Prior studies have shown that these factors may influence the learning ability and international performance of a company that is undertaking internationalisation (Barkema et al., 1996; Yeoh, 2004; Zahra et al., 2000). Furthermore, the analysis additionally accounts for job titles, tenure, duration of employment, and educational attainment of executives.

Table 5.4 Industry categories

Category	**Industry**	**Percentage (%) (N=238)**
1	Textiles and wearing apparel	15.0
2	Chemical, rubber, and plastics products	13.3
3	Non-metallic mineral products, fabricated metal products, except machinery and equipment	7.1
4	Computer, electronic and optical products, electrical equipment, machinery, and equipment	20.0
5	Leather and related product, coke, and refined petroleum products, and	11.3
6	Motor vehicle and transport equipment	13.8
7	Pharmaceutical products,	3.0
8	Printing and reproduction of recorded media, paper	9.1
9	Food products	5.3
10	Other categories	2.1

Sources: Adopted from (Zhang et al., 2016) [14]

DTA - Local network partners

Research control for the adoption of technologies is provided by local network partners. It is via these partners that digital technologies are disseminated to the operations of EMNEs in the local area. According to Nielsen and Raswant (2018), when I account for indigenous operations, I reduce the impact of extraneous variables that have an effect on the response variable.

[14] The industry categories are adopted from:
Zhang, X., Ma, X., Wang, Y., Li, X., & Huo, D. (2016). What drives the internationalisation of Chinese SMEs? The joint effects of international entrepreneurship characteristics, network ties, and firm ownership. International business review, 25(2), 522-534.

Firm Size (total employees)

The studies consider staff count when accounting for firm size as it might be difficult to get financial data from Chinese companies (Brouthers & Xu, 2002; Zhang et al., 2016). The data on business size is composed of categorical variables. Specifically, the number of workers is categorised on a scale from 1 to 4, indicating a range of fewer than 250 to over 10,000 employees.

Percentage of foreign employees

According to Kim, Hwang, and Burgers (1989), employees diversification may have an effect on the same performance measures as, or minimise, the performance consequences. Moreover, Kim et al. (1989) claim that it explicitly addresses the difficulties associated with efficient transaction administration, whether they occur inside a single organisation or across national boundaries, and the use of strategic resources across several operational domains.

Degree of Internationalisation (DOI)

I managed DOI by considering the extent of its overseas activities and the fact that the number of its subsidiaries may have an impact on its DTA (Andersson et al., 2005). Following prior research (Goerzen & Beamish, 2003; Hitt et al., 1997; Tallman & Li, 1996), this study quantifies DOI by calculating the number of countries where a company has operating subsidiaries in a specific year.

Industry

In accordance with Zhang et al. (2016), the research classify the industries into four distinct groups. In their analysis, Autio, Almeida, and Sapienza (2000) included industry dummies to account for the prospective differences in international market prospects across various sectors, which might impact the level of businesses' exposure to these possibilities. Every company in the sample was coded using a 2-digit ISIC 4 by the research team (see Table 5.2).

Position Title

The study controls the influence of the employee's position (Bernerth & Aguinis, 2016) on resource utilisation in enterprise settings. Managers assume a crucial role as the principal decision-makers, and their authority and level of accountability inside the organisation are essential for the achievement of its operations.

Tenure and employment of executives

The correlation between executives' tenure and their commitment to organisational duties and decision-making, as well as how this connects to global performance, governed the number of years in a job (Siders et al., 2001). Research conducted by Sider et al. (2001) demonstrates that tenure significantly influences most performance metrics.

Education-level diversity

Building on the methodology of Smith et al. (1994), the study accounted for variations in education levels by converting the answers on highest degree into years of formal schooling. To quantify the level of educational diversity, the coefficient of variation was computed for each participant.

Overseas Qualifications

Carpenter et al. (2001) found that executives with international education or overseas experience tend to have a broader strategic outlook and a stronger global mindset, which impacts their firm's international performance. In addition, Gupta and Govindarajan (2002) explain that international education fosters global mindset, enabling managers to better understand and integrate operations across borders. This supports the hypothesis regarding the moderating role of the global mindset. The underlying role of overseas education could reduce the aggregate bias for the relevant variables in this study, making it a suitable control variable to use (Nielsen & Raswant, 2018).

Living Overseas

When managers live abroad, they are personally exposed to a new culture via things like seeing how foreigners behave and picking up on cultural norms and customs (Bandura, 1997). Such experiences may foster the formation of cognitive frameworks in managers, hence improving their adaptation to novel contexts (Takeuchi et al., 2005). Consequently, residing abroad may promote management comprehension of the international company landscape and operations, contributing to the accumulation of experience and subsequently augmenting managers' global perspective (Sambharya, 1996). This may enhance decision-making capabilities, particularly since managers with enhanced global DTA will possess both global mindset and the technological acumen to deal with cultural nuances.

5.6 Results

Table 5.7 displays the reliabilities of the study's variables. The PPD's dependability, global mindset, international performance, and global DTA were all within an acceptable range (Kaplan & Saccuzzo, 1982; Murphy & Davidshofer, 1988; Werner et al., 1996). Variance inflation factors (VIFs) were calculated in the study to assess multicollinearity. No evidence of multicollinearity was seen, since the highest VIF score (3.11) remained below the commonly recognised threshold of 10 (Hair, 1998). However, multicollinearity might arise from the regression models' inclusion of quadratic effects. Consequently, the relevant variables were mean-centred as recommended by Aiken and West (1991) prior to generating the quadratic and interactions. This strategy reduces non-

essential negative conditioning in exploratory variables and their quadratic terms (Cohen et al., 2013).

Table 5.6 displays factor loading, a statistical measure in factor analysis that indicates the degree of correlation between an observable variable and a latent variable in this study. To check if each variable was one-dimensional, the composite reliability of the measurements was looked at, along with the discriminant validity of the standardised loadings and the convergent validity, which was found by comparing the average variance extracted with the shared variances at the construct level. The results of the confirmatory factor analysis (CFA) demonstrate that the cumulative of each factor were above 0.5 and were statistically significant (p-value < 0.05). According to Fornell and Larcker (1981), a concept exhibits adequate convergent validity if the average variance extracted is below 0.5 and the composite reliability above 0.6. This indicates an adequate level of convergent validity.

Table 5.7 illustrates the use of the Pearson Product Moment correlation technique to generate the correlation matrix and descriptive statistics. The variable global mindset has a favourable correlation with both local DTA (r = 0.67; p-value < 0.001) and global DTA (r = 0.67; p-value < 0.001). It may be inferred that companies having more global mindset among employees would possess higher global and local DTA. This result indicates that these organisations must sustain their focus and effectively use their employees as assets to create distinctive benefits for their company (Verbeke & Hutzschenreuter, 2021). Furthermore, a significant positive connection (r = 0.59, p-value < 0.001) exists between PPD and both local and global DTA. Both local and global DTA acknowledge the strategic significance of embracing sophisticated digital technology to maintain competitiveness in various around the world markets.

Additionally, the findings indicated that both local DTA and global DTA (r = 0.49 and r = 0.53; p-value < 0.001) have favourable correlations with international performance. Also, global mindset and PPD have significant correlations with international performance (r = 0.57 and p-value = 0.51; p-value < 0.001). Apart from that, the results also show that the control variable of overseas working experience has a significant relationship with global mindset (r = 0.215; p-value < 0.001) and PPD (r = 0.182; p-value < 0.01). And employees with foreign qualifications have a substantial correlation (r = 0.411; p-value < 0.001) with employment overseas.

Table 5.5 Descriptive statistics and reliabilities of study variables

					Ranges	
Variables	*K*	α	M	SD	Potential	Actual
Perceived Psychic Distance	10	0.79	36.27	6.62	10-50	19-49

Global Mindset	40	0.91	140.75	22.47	40-200	79-199
International Performance	4	0.68	14.00	3.26	4-20	9-19
Global DTA	10	0.80	34.49	7.10	10-50	19-49

Note. M=Mean; SD=Standard Deviation; k = No. of items*; α = Cronbach alpha; N=238*

Table 5.6 Factor loading

Item summary	Standardised Loadings	Cronbach's Alpha
Perceived Psychic Distance		0.79
Please indicate the level of perception of **Business Distance** between China and the Host Country:		
1 - Legal and political system	0.66	
2 - Market structure	0.66	
3 - Economic environment	0.51	
4 - Business practices	0.41	
5 - Languages	0.61	
Please indicate the level of perception of **Cultural Distance** between China and the Host Country:		
6 - Power distance	0.63	
7 – Uncertainty Avoidance	0.40	
8 - Individualism	0.52	
9 - Masculinity	0.66	
10 – Long-term orientation	0.58	
Global Mindset		0.91
Conceptualisation		
1 - In my job, the best one can do is to plan ahead for at the most one year.	0.65	
2 - Doing business with former enemies is not patriotic.	0..43	
3 - I think it is necessary today to develop strategic alliances with organisations around the globe.	0.58	

4 - Projects that involve international dealings are long term.	0.43
5 - I take pride in belonging to an international organisation.	0.47
6 – I believe that in the next 10 years the world will be the same as it is today.	0.69
7 – In this interlinked world of ours, national boundaries are meaningless.	0.57
8 – Almost everybody agrees that international projects must have a shorter payback period than domestic ones.	0.44
9 - We really live in a global village.	0.60
10 - In discussions, I always drive for bigger, broader picture.	0.42
11 - I believe life is a balance of contradictory forces that are to be appreciated, pondered, and managed.	0.58
12 - I consider it to be a disgrace when foreigners buy our land and buildings.	0.49
13 - I really believe that 5 – 10 years is the best planning horizon in our line of business.	0.47
14 - I find it easy to rethink boundaries, and change direction and behaviour.	0.44
15 - I feel comfortable with change, surprise, and ambiguity.	0.58
16 - I get frustrated when someone is constantly looking for context.	0.50
17 - Contradictors are time wasters that must be eliminated.	0.51
18 - I have no time for somebody trying to paint a broader, bigger picture.	0.58
19 - I believe I can live a fulfilling life in another culture.	0.49
20 - Five years is too long a planning horizon.	0.46
Contextualisation	

1 - I enjoy trying food from other countries.	0.59	
2 - I find people from other countries to be boring.	0.65	
3 - I enjoy working on world community projects.	0.51	
4 - I get anxious around people from other cultures.	0.51	
5 - I mostly watch and/or read the local news.	0.56	
6 - Most of my social affiliations are local.	0.54	
7 - I am at my best when I travel to worlds that I do not understand.	0.48	
8 - I am at my best when I travel to worlds that I do not understand.	0.54	
9 - I enjoy reading foreign books or watching foreign movies.	0.52	
10 - I find the idea of working with a person from another culture unappealing	0.53	
11 - When I meet someone from another culture, I get very nervous.	0.65	
12 - Travelling in lands where I can't read the street names gives me anxiety.	0.64	
13 - Most of my professional affiliations are international.	0.54	
14 - I get irritated when we don't accomplish on time what we set out to do.	0.53	
15 - I become impatient when people from other cultures seem to take a long time to do something.	0.53	
16 - I have a lot of empathy for people who struggle to speak my own language.	0.61	
17 - I prefer to act in my local environment (community or organisation).	0.50	
18 - When something unexpected happens, it is easier to change the process than the structure.	0.38	
19 - In trying to accomplish my objectives, I find, diversity, multicultural teams play valuable role.	0.37	
20 - I have close friends from other cultural backgrounds.	0.58	
International Performance		0.68

Please indicate managerial satisfaction with company's financial performance for the past three years.		
1 - Our international market financial performance has been exceptional.	0.46	
2 - Our international financial performance has exceeded that of our competitors.	0.49	
3 - The growth of our international sales has been exceptional.	0.57	
4 - Our sales expansion in international markets has surpassed that of our competitors.	0.53	
Global Digital Technology Adoption (DTA)		0.80
Please specify how much your firm has adopted in at least one functional area or scaled up the specified digital technologies distributed through **global network partners**:		
1 - Traditional web	0.64	
2 - Cloud-based services	0.43	
3 - Mobile internet	0.66	
4 - Big data	0.51	
5 - IoT (Internet of Things)	0.54	
6 - AI (Artificial Intelligence)	0.51	
7 - Robotics and RPA	0.58	
8 - Deep Learning	0.66	
9 - AR/VR	0.65	
10 - Additive Manufacturing	0.71	

Note. Cumulative factor loading >0.50, a= Cronbach's alpha; N=238

The results signify the significant influence of executives' roles on their role as managers. Although these variables are included into many models, their correlations do not lead to multicollinearity. The suggested association shown in Figure 5.1 was examined using a moderated hierarchical regression analysis. The findings of the investigation are shown in Table 5.8. The discourse encompasses the results obtained from all models used to investigate the hypotheses.

All control variables are entered in Model 1. This model explained 25.7% of the variance in international performance, with a F value of (12, 225) = 7.821 and a p-value < 0.001. The educational attainment of executives was shown as a significant positive predictor of international performance (β = 0.153, p-value = 0.024). Local DTA accounted for 53.5% of variation in international performance (β = 0.536, p-value < 0.001). Nonetheless, the total number of workers in the firm serves as a significant negative predictor of international performance (β = -0.180, p-value = .019).

Model 2 explained 30.8% of the variance in international performance, as evidenced by a F value of (13, 224) = 9.102 and a p-value < 0.001. Local DTA accounted for 24.7% (β = 0.247, p-value = 0.007) of the variation in international performance, indicating a significant reduction compared to Model 1. The reduction was due to present of global DTA in Model 2. Thus, global DTA significantly influenced international performance (β = .370, p-value < 0.001), hence supporting Hypothesis 1.

Model 3 explained 34.4% of the variance in international performance, shown by F (14, 223) = 9.874, with a p-value < 0.001. The level of education continues to be a significant predictor of international performance (β = 0.108, p-value = 0.091). Global DTA explained 32.8% of the variance in international performance, yielding significant findings (β = 0.328, p-value < 0.001). The interaction effect of PPD with global DTA yielded a significant finding (β = 0.235, p-value < 0.001). Thus, Hypothesis 3 is supported in Model 3.

Model 4 explained 37.4% of the variance in international performance, shown by F (15, 222) = 10.421, with a p-value of < 0.001. Global DTA independently accounted for 27.2% of the variation in international performance, producing significant results (β = 0.272, p = 0.002). This model demonstrated both interaction terms with significant results: PPD and global mindset with global DTA. The adjusted R-squared change for Model 4 was 37.4% variation in international performance accompanied by significant p-value values (p-value < 0.001). The interplay between global DTA and PPD accounts for a 12.9% variation in international performance. Furthermore, the interaction term of global DTA and global mindset accounts for 27.1% (p-value < 0.001) of the variation in international performance. It is an improved of 8.72% variation in international performance as compared to previous model. Consequently, Hypothesis 4 is supported. To assess the magnitude of this model's effect size, I used Cohen's f, resulting in a value of 0.7729, which indicates a substantial effect size (Cohen et al., 2013).

$$Cohen\ f = \sqrt{\frac{R^2}{(1 - R^2)}}$$

Based on the analysis of variance (ANOVA) results, all the regression models had a good and statistically significant fit to the data overall. Every model looks at the direct association between

the predictors and shows that the variables and DTA have positive correlations, which produces statistically significant results. As part of the robustness analysis, the study investigates if the result produces a normal distribution of errors. The histogram in Figure 5.2 (Appendix 5) illustrates data exhibiting a normal distribution, since the bars denoting error frequency generally align with the contours of a normal curve. Furthermore, the residuals shown in the P-P plot shown in Figure 5.3 (Appendix 5) align with the 45-degree line. The histogram and the P-P plot provide no indication of a breach of the normality assumption (Sarstedt et al., 2019). The investigation revealed a Durbin-Watson value of 1.988, which is favourable in regression analysis, suggesting that the residuals are not autocorrelated and that the regression model's assumptions about the independence of mistakes are likely satisfied (Ali & Sharma, 1993). This improves the reliability and validity of the model's statistical findings.

Additionally, employing G*Power statistical tool, the result attained power of 1.000, signifying highest possibility of accurately rejecting a false null hypothesis, therefore identifying a real effect of the given magnitude. The substantial power indicates that the sample size was enough to identify the observed effect size ($f^2 = 0.7729$), deemed a big impact by Cohen's (2013) standards. The noncentrality parameter of 183.95 reinforces the test's robust ability to identify significant differences, while the crucial F-value of 3.881 denotes the threshold at which the observed F-statistic is deemed statistically significant at the 5% level. The investigation was adequately powered, rendering the probability of a Type II error (false negative) minimal based on the specified model assumptions.

5.7 Discussion

The notion of CBV underscores that firms with similar resources might get extraordinary results by adeptly using their current assets and distinctive integration capabilities (Luo & Child, 2015). Based on the analysis of the study, the final model's result was significantly illustrated for both interaction terms, PPD and global mindset. Analysing results using the lens of CBV, EMNEs could periodically assess their current resources to achieve remarkable performance. For example, human resource competence is a critical resource that organisations must evaluate (Lengnick-Hall et al., 2011). EMNEs' managerial traits could be one of the determinants of firms' international growth. In this study, I am looking into PPD and global mindset as Chinese managers' critical traits.

PPD signifies the recognition of cultural, institutional, and business disparities between the home and host countries. In this study, Chinese managers that recognise significant PPD are often more cognisant of the obstacles associated with cross-border operations, including language hurdles,

divergent business practices, and cultural differences (Vătămănescu et al., 2020). This increased awareness fosters the cultivation of global mindset, a cognitive disposition marked by receptiveness and flexibility towards varied marketplaces (Gupta & Govindarajan, 2002). To alleviate the adverse impacts of PPD, Chinese managers must adopt a more comprehensive viewpoint, improving their capacity to perceive global operations integrative and formulate plans that correspond with both local and international requirements (Levy et al., 2007). Thus, global DTA may help to alleviate PPD, however, recognising enhanced PPD may promote Chinese managers to increase use of technologies and neglecting the needs for managerial global mindset. It is essential to balance these traits with an adequate degree of DTA, which may provide optimal variation in international performance.

Functioning in high-PPD situations exposes Chinese managers to many cultural and institutional contexts, offering them learning opportunities that foster the cultivation of managerial global mindset. This study contends that Chinese managers must cultivate an appreciation for the integration of diverse marketplace nuances, enhancing cognitive flexibility and a comprehensive perception of international business dynamics (Javidan & Teagarden, 2011). This exposure fosters a more comprehensive perspective, allowing managers to respond more adeptly to EMNEs' challenges especially in this digital age. However, the scholarly comprehension of the effects of digitalisation on international business has not progressed correspondingly. Thus, this study offers contributions to the literature that may help scholars to enhance their understanding.

This paper contends that while digital technology may not be the ultimate solution for addressing the cultural complexities encountered by EMNEs, it is an essential tool for operation efficiency. By incorporating digital technologies into their resource's portfolios, organisations may more effectively tackle cross-border challenges. As EMNEs expand, communication obstacles may increase across various subsidiaries and divisions, diminishing the effectiveness of these digital technologies. The growth of business size presents structural issues that may adversely affect communication flows (Kraus et al., 2023).

Furthermore, an increase in employees PPD may obstruct efficient communication and cooperation. However, cultivating a robust global mindset in workers helps alleviate these obstacles by facilitating a more profound comprehension of many cultural, political, and economic systems (Jiang et al., 2021). Global mindset facilitates the connection between diverse subsidiaries and regions by promoting awareness of local settings, crucial for managing regional subsidiaries in a global marketplace (Levy et al., 2007). Consequently, whereas digital technology may serve as an initial foundation, cultivating global mindset which is essential for transcending the constraints of PPD and improving cross-cultural communication and performance. Apart from cultivating the requisite attributes, decision-makers could adjust their recruiting approach by employing individuals with international qualifications or experience, since this is closely associated with global mindset.

While a strong global mindset can offer advantages, this study argues that it may also pose potential drawbacks. Chinese managers with a highly developed global mindset may overestimate their ability to navigate complex international markets using digital technologies, leading to overconfidence in global DTA. This overconfidence can result in suboptimal decisions, as managers may focus excessively on the global aspects of digital technology without giving due attention to the specific cultural, institutional, and market needs of local environments. For instance, global DTA strategies that are not tailored to the unique requirements of particular regions may fail to resonate with local consumers or may not comply with local regulations (Rugman & Verbeke, 2003; Verbeke & Hutzschenreuter, 2021).

Under such circumstances, a uniform approach to DTA may restrict the beneficial effects of these technologies on global performance. Digital tools designed with global mindset might overlook key local nuances, such as cultural preferences, legal constraints, or market conditions, thereby reducing the effectiveness of global DTA initiatives. Therefore, firms must balance their global managerial mindset and local market intelligence to adapt digital technologies for each market.

Moreover, over-reliance on global DTA without considering local factors may lead to inefficiencies and missed opportunities in international performance. It is crucial for managers to combine their dynamic capabilities with a deep understanding of local contexts and to apply digital technologies in a way that enhances both global and local performance (Teece, 2018). Firms must strategically balance their resources, digital technologies, and managerial dynamic capabilities to optimise their international operations (Luo, 2021a).

CBV enhances the dynamic capability perspective by highlighting that businesses may achieve competitive advantage not only via resource adaptation or renewal but also by innovatively combining their current resources (Luo, 2021a; Luo & Child, 2015). The dynamic capability approach emphasises resource renewal in response to external changes, such as shifting markets or technological progress, while the compositional view posits that efficiently using existing resources may provide remarkable results (Luo & Child, 2015; Teece, 2018). The study highlighted the new OLI factors, which examined Chinese managers' global mindset and PPD in influencing the outcome of DTA and used existing resources to enhance international performance. Rather than just replacing resources, managers may innovatively combine digital technologies with their local expertise, cultural sensitivity, and current competencies to address difficulties arising from PPD.

Through the implementation of a compositional approach, companies may use their existing digital technology and management expertise across multiple industries to generate additional value and efficiency (Guo et al., 2023). This innovative methodology embodies the CBV, whereby innovation arises not from unique resources but from the astute recombination of existing ones to address global challenges. The interplay between global mindset, PPD, and global DTA strengthens

the study's assertion that managerial cognition and digital transformation adoption must correspond with both global and local elements for enduring international performance.

Furthermore, the interaction between PPD and global mindset facilitates the alignment of a firm's global strategy with local market realities, resulting in enhanced international performance. Chinese managers with robust global mindset can navigate the intricacies of several markets, strengthening the synchronisation of digital technology implementation. The moderating function of managerial cognition emphasises the Upper Echelon Theory perspective that the psychological and cognitive characteristics of top managers significantly affect organisational results. This research enhances Upper Echelon Theory by highlighting the significance of cognitive views in influencing managers' strategic decisions, especially regarding digital transformation and international performance. By expanding the theory beyond demographic variables to include cognitive traits like PPD and global mindset, the research provides a more nuanced understanding of how top management influences firm behaviour in a globalised, digitally enhanced economy.

The study's results underscore the crucial influence of global mindset and PPD on the digital internationalisation strategies of Chinese enterprises. These management cognitions affect how Chinese managers perceive and react to challenges of overseas markets, especially in addressing institutional and cultural disparities. Consistent with Barney and Zhang’s (2009)differentiation, the findings indicate a shift beyond just contextualising established international business theories to the formulation of a separate Chinese theory of internationalisation. This nascent theory encapsulates China's unique institutional framework, advancements in digital capabilities, and the cognitive flexibility of its globalising managers. This study enhances the expanding corpus of Chinese management research by anchoring theoretical insights in indigenous characteristics, aiming to elucidate internationalisation processes based on China's socio-cultural and strategic setting.

5.8 Conclusion

This study offers new insights into how EMNEs’ managers navigate foreign markets by evaluating the moderating effects. The results underscore the need of a balanced strategy, whereby digital technologies provide a basis for addressing cross-border complications but must be integrated with a sophisticated comprehension of local contexts and cultural variances. Although higher global DTA might enhance international performance, overconfidence arising from a robust global mindset may result in oversights and require further research, particularly when local market subtleties are disregarded. Consequently, companies must intentionally synchronise their digital resources, managerial global mindset, and adaptive competencies to optimise international performance. This research enhances the behavioural theory of the firm and CBV, highlighting that successfully

managing psychic distance and employing digital technology as resource, necessitates a flexible and locally informed management strategy.

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Appendix 5

Figure 5.2 The histogram of errors of a standardised residual distribution

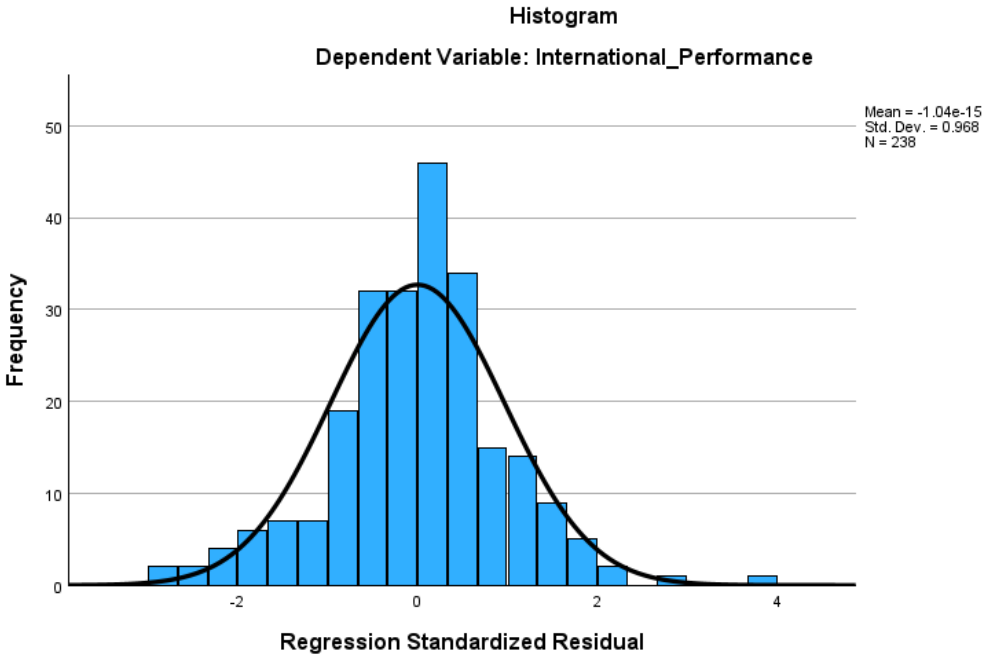

Figure 5.3 P-P Plot illustrates plot of regression standardised residual distribution

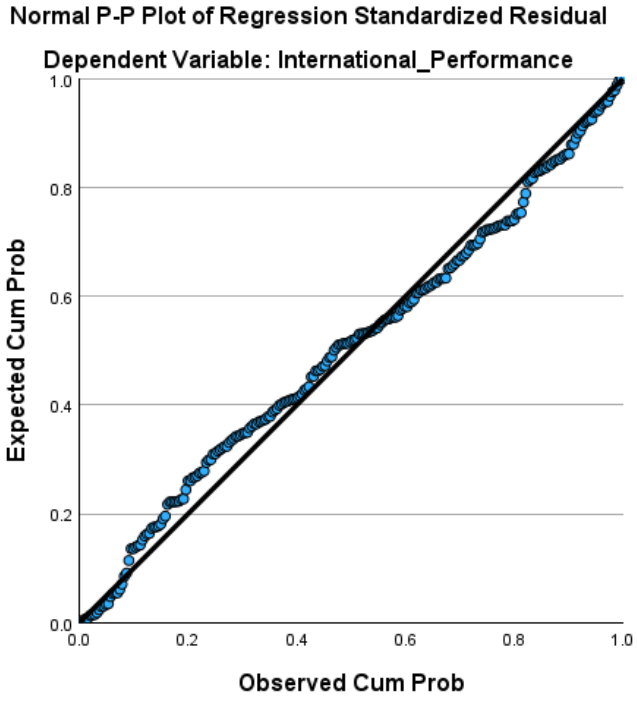

Table 5.7 Descriptive statistics and correlations of control variables and study variables (N=238)

Variables	M	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1.Total Employees	2.72	0.82	-															
2. Percent of Foreign Employees	2.92	0.82	0.55****	-														
3.Industry Type	9.33	5.44	0.06****	0.45****	-													
4.Position Title	2.63	1.08	-0.25****	-0.28****	-0.04	-												
5.Year in Position Held	7.77	5.97	0.51****	0.41****	0.01	0.36****	-											
6.Year of Employment	9.27	6.48	0.46****	0.40***	-0.01	0.47****	0.74****	-										
7. Local DTA	3.44	0.72	0.21****	0.22****	0.09*	-0.12**	0.25****	0.28****	-									
8. Degree of Internationalisation	0.46	0.13	0.12*	0.06	0.01	0.00	0.01	0.09*	-0.02	-								
9.Perceived Psychic Distance	3.62	0.66	0.04	0.14**	0.03	-0.09*	0.16***	0.17***	0.59****	-0.04	-							
10.Global Mindset	3.69	0.58	0.16	0.23	0.07	0.22****	0.29****	0.33****	0.67****	0.57**	0.68****	-						
11. Overseas Qualifications	0.53	0.50	0.37****	0.32****	-0.01	0.24****	0.33****	0.27****	0.12***	0.00*	0.09*	0.13**	-					
12. Global DTA	3.44	0.71	0.13***	0.20****	0.07	-0·16***	0.18****	0.22****	0.77****	-0.02	0.57****	0.67**	0.12**	-				
13. International Performance	3.50	0.81	-0.02	0.10	-0.01	0.01	0.04	0.04	0.49****	-0.05	0.51****	0.57****	0.02	0.53****	-			
14. Education Level	5.61	0.92	0.31****	0.27****	-0.02	0.28****	0.27****	0.31****	0.02****	0.00	0.03	0.08*	0.48****	0.10*	0.07	-		
15. Live Overseas	0.70	0.46	0.30****	0.23****	-0.2	-.30****	0.22****	0.25****	0.10**	0.60	0.85*	0.12***	0.49****	0.50	0.31****	0.35****	-	
16. Work Overseas	0.78	0.416	0.269	0.281****	-0.044	0.267****	0.215****	0.241****	0.196***	0.134**	0.182***	0.215****	0.411****	0.159***	0.092*	0.295****	0.68****	-

Note. *. p < 0.1; **. p < 0.05; ***. p< 0.01; ****. p< 0.001, n=Sample, M=Mean, SD=Standard Deviation

Table 5.8 Moderated hierarchical regression to show the predictors of International Performance (N=238)

DV: International Performance	Model 1	Model 2	Model 3	Model 4
Control Variables				
Total Employees	-0.181**	-0.147**	-0.113	-0.109
Percentage of Foreign Employees	0.111	0.088	0.082	0.081
Industries Type	-0.049	-0.066	-0.058	-0.062
Position Title	0.067	0.093	0.088	0.110**
Years Position Held	0.016	0.025	0.013	0.005
Years of Employment	-0.078	-0.070	-0.076	-0.104
Education Level	0.151**	0.117*	0.125**	0.121**
Degree of Internationalisation	-0.026	-0.049	-0.040	-0.066
Local DTA	0.536****	0.247***	0.146*	0.070
Overseas Qualification	-0.065	-0.069	-0.076	-0.047
Live Overseas	-0.016	0.015	0.018	0.019

Work Overseas	0.022	0.033	0.010	-0.007
Independent Variables				
Global DTA		0.370****	0.323****	0.272***
Moderator – PPD and Global Mindset				
Global DTA X PPD			0.235****	0.129*
Global DTA X Global Mindset				0.271****
Model fit				
N	238	238	238	238
R^2	0.294	0.346	0.383	0.413
Adjusted R^2	0.257	0.308	0.344	0.374
F Value	7.821****	9.102****	9.874****	10.421****

Note. *. p < 0.1; **. p < 0.05; ***. p< 0.01; ****. p< 0.001, N=Sample, M=Mean, SD=Standard Deviation

Chapter 6: Contributions, Limitations, Future Research and Conclusion

6.1 Introduction

The primary objective of this dissertation is to enhance comprehension of the correlation between digital technology adoption, managerial cognition, and firms' international performance. I collected data with a quantitative approach based on a logical framework and survey techniques. The primary justification for using a deductive approach is to clarify causal relationships between variables via quantitative methodologies (Saunders et al., 2015). Ultimately, I aimed to analyse data gathered from management of Chinese multinational enterprises. I employed the new OLI perspective as the overarching theoretical framework to analyse the data. The studies also employed Springboard perspective, the upper echelon theory, Behavioural theory of firm, and CBV to explain the results. The chapter continues to cover theoretical, and managerial contributions. Lastly, it discusses the limitations, future of the research and conclusion.

6.1.1 Theoretical contributions

Prior investigations on speed have mostly relied on theoretical models and a considerable amount of empirical evidence (Chetty et al., 2014). Recent research in the IB field promote further exploration of the correlation between speed and its related liabilities (Sahoo et al., 2024). In this research, the findings demonstrate that speed has a significantly impact on the relationship between two of the three new OLI variables and DTA; open resource access and digitisation-enabled integration variables. The results augment the existing corpus of internationalisation perspectives, emphasising that speed is a critical component in the context of the contemporary digital era. The findings add major theoretical contributions to the IB research stream. It supports the notion that that future research should explore the creation of novel ideas that is in line with the digital age, given that previous studies that have concentrated on the Uppsala model for internationalisation theories suggest (Coviello et al., 2017). While Springboard perspective provides a more detailed understanding of how internationalising EMNEs navigate different environments of their home and host markets, it has not thoroughly examined the home-market context of emerging markets, despite their significant importance in international expansion via digitisation-enabled technology ecosystems. This study offers a modest addition to the Springboard viewpoint of how EMNEs clarify their distinct goals, methods, and behaviours in international growth, particularly in the digital age

Moreover, the research question is addressed by the findings of *Study 1*. *"What are the relationships between the new OLI variables (open resource access, digitisation-enabled linkages,*

and digitisation-enabled integration) and international performance?" I employed the new OLI perspective with the objective to improvise the previous conceptual research by Chesbrough (2003) and Chesbrough & Appleyard (2007) that were conceptualised before the strong momentum of digitalisation took place. Their study supports the concept of open innovation by examining the determinants of firms' international performance from the new OLI perspectives including composition-based view, springboard perspective, upper echelon theory and the behavioural theory of firm, whereby the new OLI is effectively offered, suggesting that it contributes to favourable international performance. My research suggests that the advantages of the three new OLI variables extend beyond a specific area and have a broad influence on multiple predictors. The positive hypothesised direction of the study further supports the assertions of the other hypotheses. This indicates that my research findings not only confirm existing theories but also highlights the interconnected advantages of open resource access, digitised-enabled linkage, and digitised-enabled integration across different dimensions of international performance. Thus, the empirical evidence strengthens the overall understanding of how these variables interact to drive performance in various contexts. Hence, my research findings contribute to the foundational understanding of the new OLI perspective in which it complements and reinforce the classic OLI framework, thus its application to the digital age context.

Since the data of this research is derived from a diverse variety of sectors in China, the effectiveness of open resource access is not limited to certain industries or geographic locations (Chesbrough, 2011). Therefore, my study expands the theoretical understanding of internationalisation by examining how and when EMNEs excel in using global open resources access to gain competitive advantages, thus boost international performance as international springboard firms. It also supports the statement made by Cano-Kollmann et al. (2016) who argued that IB research should transition from "location analysis" to "spatial analysis," since location pertains only to physical space, while space may also include technical, social, cognitive, or institutional dimensions. This result strengthens understanding of the elements of the springboard phenomenon in the developing economy, as companies are actively searching for strategic assets, hence placing more emphasis on intangible assets that provide open access to resources such as digital assets.

As for *Study 2*, the research question is *"What is the relationship between the New OLI factors and DTA and what is the role of the SOI in this relationship?"* Indeed, the analysis results of *Study 2* shown a significant effect on the relationship between the digitisation-enabled linkage and the firms' DTA. This suggests that firms using digitisation-enabled linkages to improve their interconnections are likely to develop their global value chain without regard to geographical locations as a criterion. Therefore, I argue that this new strategy complements the conventional eclectic paradigm theory of location, which asserts that EMNEs should evaluate if there is a relative advantage in carrying out certain operations in a given country. The key argument here is that the

evolving nature of the business environment compels modern firms to include digitisation-enabled technologies into their operations. While the eclectic paradigm theory asserts that relative location advantages are a key factor in a firm's choices to engage in foreign direct investment (FDI), this study contends that enterprises are utilising their digitisation-enabled resources to enhance their ecosystem. As the study finds that SOI is a significant moderation variable accounted for by DTA, firms can expand at a faster rate by improving their FSA, for example, by focusing on digitally enabled integration and open resource access. Thus, I will discuss the implications for managers and firms' strategies in a later section.

In addition, this research plays a role to the new OLI viewpoint on internationalisation by examining how multinational enterprises use digital connection to gain sustained competitive advantages and develop unique connectivity capabilities. The research employed CBV to form theoretical insights into the new OLI advantages perspective, which is about how EMNEs can effectively use open resource access, digitisation-enabled linkages, and digitisation-enabled integration to build their own composition of resources in a way that improves the firm's dynamic capability (Luo, 2021b; Luo & Child, 2015). Thus, it supports the CBV approach, which explains how companies with average or generic resources may thrive and expand by using a compositional skill that allows them to compete with more well-equipped competitors, particularly in their own markets (Li et al., 2022; Luo & Child, 2015). This research enhances the comprehension of the behaviour of compositional springboarding enterprises by providing a nuanced knowledge of the suggested *"3A Springboarding capabilities with compositional view,"* which synthesises the phases of compositional springboarding capability application (Li et al., 2022, p.757). Therefore, this research claims that it contributes to the knowledge of capabilities of springboard firms, amalgamation, ambidexterity, and adaptability (Luo & Tung, 2018).

Moreover, I examine how EMNEs are advancing, globalising, or functioning in this rapidly evolving digital environment. Primarily, I explore the significance of digitisation-enabled platform ecosystems for EMNEs and the non-traditional strategies that propel their international performance. Building on the new OLI perspective's theoretical development, this research shows how digitisation might lead to new advantages (Luo, 2021b). It indicates that EMNEs leverage open resource access, digitisation-enabled linkages, and digitisation-enabled integration advantages as essential strategic mechanisms and organisational frameworks to enhance their internationalisation initiatives and elevate their international performance.

Nonetheless, the current digitalisation trend constitutes but a minor component of the factors driving development within the framework of the Chinese developing market. Previous literature regarding Chinese MNEs appears to have internationalised rapidly. Instead of progressively (Cui et al., 2014; Deng, 2009; Peng, 2012). Chinese MNEs appear to have engaged in higher distant. location

markets, including developed nations, earlier than it was anticipated (Quer et al., 2012; Ramamurti, 2012); and Chinese MNEs appear to have employed capital-intensive strategies. entry modalities, such as mergers and acquisitions, prior to one would have anticipated (Deng, 2007, 2009; Peng, 2012). Apart from these, government-created advantages play a critical role in their advancement as global players. For instances, the legislative and policy environment that encouraged leapfrogging, offered state investment (e.g. electric cars or renewable energy), or gave preference to Chinese firms over international ones, as in online search, e-commerce, and gaming, were once again strengthened by government-created advantages (Ramamurti & Hillemann, 2018).

Given all the above, the findings of this research endorses CBV, elucidating how Chinese EMNEs as springboard firms with average or generic resources can prosper and grow by employing a compositional skill that enables them to compete with better-equipped rivals, especially within their own markets (Li et al., 2022; Luo & Child, 2015). *Study 1* in Chapter 3 also reveals how Chinese EMNEs utilise digital platform ecosystems to bridge their gap with MNEs from advanced countries. Potentially, these firms strategically leverage technology and innovation to enhance their operational efficiencies and customer engagement, thereby positioning themselves as formidable competitors. By integrating digital tools and fostering collaborative networks, they not only optimise their resource utilisation but also create unique value propositions or FSA that resonate with local consumers (Chierici et al., 2021).

The new OLI perspective improves the research by analysing the data in conjunction with the essential variables of the study. Each factor plays a significant role in the performance of EMNEs. Furthermore, utilising data from China, CBV provides an appropriate framework to analyse this study, as it elucidates the unique growth trajectory for Chinese MNEs that lack strategic assets such as proprietary technologies and brands (Luo, 2021a). This study also supports the claim of CBV, indicating that Chinese MNEs effectively utilise various accessible open resources access in conjunction with their existing generic capabilities (Li et al., 2022; Luo, 2021a; Luo & Child, 2015). One aspect in the new OLI advantages, particularly open resource access, enhances EMNEs' ability to creatively assemble resources that may be challenging to replicate, therefore transforming into FSA (Lee et al., 2021). Findings in this study provide indications that this unique ability to leverage open resource access allows EMNEs to develop distinctive capabilities that have potential to set them apart from competitors. It can be assumed that these FSA can enhance their competitive positioning in the global market.

My research involves incorporating the new OLI perspective and CBV into the data analysis, with the aim of adding novel findings. (Li et al., 2022). This innovative combination allows for a deeper understanding of the motivations and barriers faced by Chinese EMNEs as they navigate the digital landscape. By integrating these theoretical frameworks, the research will shed light on the

complex interplay between open resource access, digitisation-enabled linkages, digitisation-enabled integration and internal factors, ultimately contributing to a more comprehensive understanding of digital transformation in this context. The study extends its complex interaction framework by using the speed of internationalisation as a moderating mechanism to examine the relationship between the new OLI variables and DTA. The results indicate that speed positively moderates the relationship, underscoring the importance of how EMNEs use balanced resources to achieve optimum global DTA. Thus, the results *Study 2* also confirm that speed could enhance EMNEs' flexibility, coordination, and efficacy of their interfirm and intrafirm operations while integrating innovative technologies. Hence, the research contributes to the finding that speed has significant impacts EMNEs resource amalgamations process. The findings offer springboard firms a theoretical understanding of their resources utilisations and allocation that may affect their geographically disburse stakeholders.

This research provides fresh insights into the digital internationalisation of Chinese EMNEs by integrating the new OLI perspective with the CBV (Luo, 2021b; Luo & Child, 2015). This study enhances comprehension of the distinct motives and limitations encountered by Chinese enterprises within a digitally transforming global landscape by analysing the interaction among open resource access, digitization-facilitated connections, digitization-driven integration, and internal organisational capacities. The research includes the speed of internationalisation as a moderating variable, demonstrating that faster speed enhances the relationship between digital technology adoption (DTA) and the new OLI constructs. This discovery underscores how Chinese EMNEs strategically use a combination of internal and external resources to enhance global DTA results. These findings facilitate the formulation of a Chinese theory of internationalisation (Barney & Zhang, 2009), rooted in the nation's unique digital environment and rapid international expansion trends.

6.1.2 Managerial contributions

A practical managerial implication of my research findings is for EMNEs to prioritise strategies that leverage open-access resources to build firm-specific advantages. Managers in EMNEs can focus on creatively combining these accessible resources, such as global partnerships, shared technologies, or public data, with their existing capabilities. This approach enables firms to compete on a global scale despite a lack of proprietary assets like unique technologies or strong brands. By fostering innovation in resource utilisation and developing distinctive capabilities, managers can enhance their firm's competitive position internationally and mitigate the disadvantages of limited strategic assets. Furthermore, this strategy encourages a culture of

adaptability and resilience within the organisation, empowering managers to navigate complex global markets effectively (Vătămănescu et al., 2020). As a result, EMNEs can establish a stronger foothold and influence in international markets, facilitating sustainable growth and long-term performance.

In the seminal paper by Luo and Child (2015), the authors attest that CBV explains firms leverage ordinary resources to generates exceptional outcomes. Furthermore, Ananthram, Luo and Peng (2022) contend that while the majority of the resources are conventional, the ability to utilise them is exceptional and unique. This critical capability reinforces one of the three dimensions of CBV, focusing on a compositional offering that embodies creativity or novelty (Luo & Child, 2015). Other capabilities that enhance CBV include the finding of this research that EMNEs can creatively utilise open resource access, linkage-enabled, and integration-enabled advantages. EMNEs extend their critical capabilities by creatively combining and composing open resources, enabling them to build firm advantages with minimal resources and achieve extraordinary outcomes (Ananthram et al., 2022). *Study 1* strengthening CBV, as the findings can enhance the strategic approach of EMNEs, not only fosters innovation but also allows them to adapt swiftly to changing market conditions, ultimately improve firms' performance. By leveraging these capabilities, managers can effectively differentiate their firms in a competitive landscape, driving sustainable growth and long-term performance. In extension to the findings, the research could potentially contribute to how EMNEs could optimised their resources to design the most productive combinations for its operation.

Furthermore, digitally enabled integration may improve DTA, though, its effects from internationalisation speed are negligible. These results suggest that EMNEs should reassess their strategy for entering international markets employing the strategy of "spatial analysis" rather than "location analysis" (Cano-Kollmann et al., 2016), especially in terms of resource allocation and addressing internalisation concerns. As a result, EMNEs are encouraged to heighten their dynamic capability within technologically advanced digital ecosystems. Finally, the integration of digital technology is a global occurrence. As a result, emerging market MNEs can take advantage of this phenomena to establish a global value chain by collaborating with stakeholders from different geographical locations with the ambition of building FSA.

I am also intrigued to discuss in detail the findings of the moderation effects of speed in *Study 2.* The rationale behind this motivation is that EMNEs use digital connections to enhance the speed, flexibility, coordination, and efficacy of their interfirm and intrafirm operations while integrating innovative technologies (Luo, 2021b). SOI is employed to examine the interaction effects on the relationship among the new OLI variables: open resource access, digitisation-enabled linkages, digitisation-enabled integration, and the global DTA. This analysis not only sheds light on the strategic advantages EMNEs gain through digitalisation but also highlights the crucial role that

emerging technologies play in shaping their international business operations. By focusing on these new OLI variables, I aim to provide a comprehensive understanding of how digital capabilities can complement the classic OLI framework in a rapidly evolving global strategy (Ning et al., 2024). This understanding allows firms to strategically manage their resources, ensuring that they can respond effectively to the diverse needs of stakeholders across different regions. Consequently, this enhances their overall operational effectiveness and competitiveness in the global market.

Potentially, EMNEs have been operating in a traditional method where ownership, location and internalisation could have been their focus to create FSA and ultimately influencing firms' performance (Erramilli et al., 1997). With the emerging of digitalisation, firms have been growing with the speed that never been experience before. This rapid growth ultimately equips EMNEs to enhance their competitive positioning and exploit new market opportunities, fostering resilience in an ever-changing economic environment. By leveraging these digital assets enables them to navigate complex regulatory frameworks and cultural nuances more effectively, thus facilitating smoother global expansion.

Apart from social and technical dimensions, I am intrigued in providing viewpoint on the cognitive dimension especially based on the analysis results of *Study 3*. The research question is *"How does global DTA influence firms' international performance, and what role do PPD, and global mindset play in moderating this relationship through the lens of the CBV?"* PPD denotes the acknowledgement of cultural, institutional, and commercial inequalities and geographic distances between the home and host nations (Håkanson & Ambos, 2010). Chinese managers who acknowledge substantial PPD are often more aware of the challenges related to cross-border operations, such as language barriers, varying business procedures, and cultural disparities (Azar & Drogendijk, 2014). This heightened awareness promotes the development of a global mindset, a cognitive orientation characterised by openness and adaptability to diverse markets (Gupta & Govindarajan, 2002). To mitigate the detrimental effects of PPD, Chinese managers must embrace a more holistic perspective, strengthening their ability to understand global operations integratively and devise strategies that align with both local and international demands (Levy et al., 2007). Consequently, strengthened global DTA may alleviate PPD; nevertheless, acknowledging heightened PPD may encourage Chinese managers to augment technology utilisation while disregarding the need for a managerial global mindset (Vătămănescu et al., 2019; Vătămănescu et al., 2020). It is crucial to equilibrate these characteristics with a sufficient level of DTA, which may provide optimum variance to improve global performance. Hence, the findings of this research may contribute to the behavioural theory of firms (Cyert & March, 1963) and the upper echelons theory (Hambrick, 2007; Hambrick & Mason, 1984).

Operating in high-PPD environments exposes Chinese managers to diverse cultural and institutional settings, providing them with learning opportunities that enhance the development of a global management perspective. Chinese managers should have an understanding of the integration of many marketplace subtleties, hence improving cognitive flexibility and a holistic view of global business dynamics (Javidan & Teagarden, 2011). This exposure cultivates a broader perspective, enabling managers to address the difficulties posed by EMNEs more effectively, particularly in the digital era. Nevertheless, the academic understanding of the impact of digitisation on international business has not advanced proportionately. Consequently, this research provides additions to the literature that may assist academics in deepening their comprehension.

I contend that while digital technology may not provide a conclusive solution to the cultural challenges encountered by EMNEs, it is an essential tool for enhancing operational efficiency. On top of that, the recent event of a tariff war that escalated by the USA may pose additional risks to EMNEs (York, 2025). Organisations potentially be more effectively address cross-border difficulties by integrating digital technology into their resource portfolios. As international corporations grow, communication barriers may escalate across different subsidiaries and divisions, reducing the efficacy of modern digital technology. The expansion of firm size introduces structural challenges that might negatively impact communication flows (Kraus et al., 2023).

Moreover, a rise in workers' level of PPD may hinder effective communication and collaboration. Nonetheless, fostering a strong global mindset among employees mitigates these challenges by enhancing their understanding of other cultural, political, and economic systems (Jiang et al., 2021). A global mindset enhances the linkage across varied subsidiaries and regions by fostering understanding of local contexts, essential for overseeing regional subsidiaries in a global market (Levy et al., 2007). Thus, although digital technology may provide a preliminary basis, fostering a global mindset is crucial for overcoming the limitations of PPD and strengthening employees' cross-cultural communication and firms' international performance. In addition to developing essential traits, decision-makers might modify their recruitment strategy by hiring people with international degrees or overseas' experience, since there are strongly linked to global mindset as evident in this research (Lovvorn & Chen, 2011; Maznevski & Lane, 2004). I contend that despite the benefits of robust global mindset, it may also present some disadvantages. For instance, managers with a well-developed global mindset may overrate their capacity to manoeuvre through intricate international marketplaces using digital technology, resulting in excessive confidence in global DTA. This overconfidence may lead to poor judgements, as managers could concentrate unduly on the global dimensions of digital technology, neglecting the distinctive cultural, institutional, and commercial requirements of local contexts. Global DTA that lack customisation for specific regional needs may not engage local customers or adhere to local rules (Rugman & Verbeke, 2003; Verbeke & Hutzschenreuter, 2021).

Firms are at their best when they can find an optimal approach to DTA strategy. However, a uniform approach to DTA may limit the beneficial effects of these technologies on global performance. Digital tools developed with global mindset may neglect essential local details, such as cultural preferences, regulatory restrictions, or market circumstances, thereby diminishing the efficacy of global DTA activities. Consequently, companies must harmonise their managerial global mindset level with local market insights, ensuring that digital technologies are adequately tailored for each region. Therefore, I argue that the results of my research suggest the implementation with a CBV, which enables firms to achieve exceptional performance by leveraging open resource access, digitally enabled linkages, and digitally enabled integration. Hence, managers could create exceptional results through creative use of these resources. This approach allows managers to harness innovative strategies that maximise the potential of available resources, fostering a competitive edge. By effectively integrating digital tools and local insights, firms can enhance their overall performance and adaptability in diverse markets.

On the other hand, excessive dependence on global DTA without accounting for local variables may result in inefficiencies and missed possibilities in international performance. Managers must integrate their dynamic talents with a profound comprehension of local circumstances and use digital technology to improve both global and local performance (Teece, 2018). Companies must strategically align their resources, digital technologies, and managerial dynamic skills to enhance their global operations (Luo, 2021a). To achieve this alignment, organisations should start with strategic recruitment process. For example, targeting potential candidates who are expose to global experience or poses overseas educations are deemed to scale their degree in global mindset (Lovvorn & Chen, 2011; Maznevski & Lane, 2004). Furthermore, invest in training and development programs that enable managers to navigate the complexities of diverse markets effectively should elevated their international business perspective. By fostering a culture of agility and responsiveness, firms can better adapt to changing global conditions while capitalising on local insights to drive innovation and growth.

CBV enriches the dynamic capability approach by emphasising that firms may get competitive advantage not alone via resource adaptation or renewal, but also by creatively integrating their existing resources (Luo, 2021a; Luo & Child, 2015). The dynamic capability approach highlights the renewal of resources in response to external changes, such as evolving markets or technical advancements, while the compositional perspective asserts that the effective use of current resources may provide significant outcomes. This research emphasises the crucial roles of Chinese managers' global attitude and PPD in the amalgamation of DTA with current resources to improve international performance. Instead of just substituting resources, managers may creatively integrate digital technology with their local experience, cultural awareness, and existing capabilities to tackle challenges stemming from PPD. By adopting a compositional strategy, firms may use their current

digital technology and managerial knowledge across several sectors to provide enhanced value and efficiency. This new technique exemplifies the CBV, where innovation emerges not from unique resources but from the clever recombination of existing ones to tackle global concerns. The interaction among a global mindset, PPD, and global DTA reinforces the study's claim that managerial cognition and the use of digital technology must align with both global and local factors for sustained international performance.

Furthermore, the interplay between PPD and a global mindset enables the synchronisation of a firm's global strategy with local market conditions, leading to improved international performance. Managers with a strong global mindset may adeptly manoeuvre through the complexities of many markets, hence improving the coordination of digital technology deployment. The moderating role of management cognition highlights the upper echelon theory, which posits that the psychological and cognitive traits of senior managers substantially influence organisational outcomes. This study advances upper echelon theory by emphasising the importance of cognitive perspectives in shaping managers' strategic choices, particularly in relation to digital technology and international performance. By broadening the theory to include cognitive attributes like PPD and global mindset, the study offers a more refined comprehension of how top management affects corporate conduct in a globalised, digitally advanced economy.

6.1.3 Limitations and future research

There are some limitations to this research. These limitations include potential bias in data collection, a restricted sample size, and reliance on self-reported measures that may not accurately reflect participants' true behaviours or attitudes. These factors could affect the validity of the findings and limit the generalisability of the results. Future studies employing qualitative research methods could provide more profound insights into the participants' experiences and perceptions, potentially enriching the quantitative data. By incorporating interviews or focus groups, researchers might uncover nuanced themes that are not captured through surveys alone, thereby enhancing the overall understanding of the subject matter.

Apart from that, other future research should address these limitations to provide a more comprehensive understanding of DTA in other contexts, however, I have made every effort to address the concerns which I have described in of each my study. In the first phase of the design approach, particularly in the development of the questionnaire, the objective is to minimise common method variance (CMV). I also used Harman's one-factor test, confirmatory factor analysis (CFA) to ascertain if a possible method bias may be affecting the results, and t-tests to compare the mean values of the early and late response groups. Future research could also employ a mixed-method

approach to minimise the impact of such potential biases. This would allow for a more comprehensive exploration of the data, integrating both qualitative insights and quantitative measures to enrich the findings further.

While additional studies are necessary to strengthen the results, the current research establishes a comprehensive context that is crucial for understanding the topic holistically. Engaging with various stakeholder perspectives can ultimately lead to more informed recommendations for effective digital technology integration. Although China may serve as a prominent example within the study's framework, examining more rising nations might provide a more profound insight into the research. Given the present tariff war, researchers should adopt a prudent approach in their methods, allowing for rapid adjustments to nations' trade needs. Incorporating new emerging countries into the study enables researchers to get a more comprehensive understanding of global trade patterns, especially considering the changing economic environment. This adaptability is crucial for precisely representing the influence of contemporary geopolitical conflicts on economic relations. Additionally, examining diverse cultural, economic, and political landscapes will enhance the relevance and applicability of the findings.

Additionally, future study might concentrate on specific sectors or industries, such as electric vehicles (EV) production, where the fast advancement of technology and regulatory frameworks poses distinct difficulties and possibilities. This may provide a more profound comprehension of how EMNEs manoeuvre through these intricacies while using their resources for competitive advantage globally. In the present competitive landscape, companies must innovate and adjust their tactics to address changing customer needs and sustainability objectives. Through the analysis of case studies involving successful EMNEs in this sector, researchers may provide significant insights into optimal practices and efficient strategies for manoeuvring the intricacies of the EV industry.

Future study can go beyond the demographic, cognitive, and social capital factors that are highlighted by the who and what questions, given the abundance of microfoundational traits that are relevant to the why question (Santangelo et al., 2024). For instance, researchers should look at who and what aspects of the managers' behaviours and beliefs that influence their decision-making within the setting of EMNEs (Felin & Zenger, 2017). Analysing these characteristics may provide profound insights into how cultural subtleties and individual experiences influence management methods. Furthermore, comprehending the interaction between these characteristics and the wider economic landscape may provide significant insights for improving decision-making efficacy in multinational firms operating in emerging markets.

Future study should also explore areas like the influence of digital technologies on international trade dynamics and the effect of environmental regulations on trade agreements. By examining these domains, academics may get a deeper insight into how contemporary problems such

as tariff war and innovations affect both existing and nascent markets. Also, future research could examine how open resources and linkage advantages enable EMNEs to transform digital skills into springboard benefits. Additionally, another intriguing study examines whether integration advantages alleviate risk associated with more rapidly internationalisation. With the recent global geopolitical tensions, these potential studies could provide novel insights into the internationalisation research stream.

6.2 Conclusion

Following, the thesis reveals the objectives of the three empirical studies by uncovering how EMNEs employed compositional strategies while utilising resources and how the adoption of digital technologies influenced the thought processes of managers and, consequently, the performance of their firms on an international scale. In Chapter 2, I shown the contextual background for the research, highlighting China as a developing nation dating back from 1970s to post COVID era. I also discusses the rationale behind selecting China for this study, given its advancements in the digital economy and the obscurity surrounding breakthrough technologies (Liu et al., 2023). I continue to delve into the unique challenges and opportunities that arise in China's digital landscape, focusing on the rapid growth of its tech industry. It underscores the remarkable expansion of digital technology in China, illustrating how the nation has become a global leader in innovation and digital infrastructure. The surge in internet penetration and mobile connectivity has created fertile ground for tech startups and established companies alike. Furthermore, the chapter illustrates government's supportive policies and investments in research and development, such as One Belt, One Road (OBOR), have catalysed advancements in areas such as artificial intelligence, fintech, and e-commerce, positioning China at the forefront of the digital revolution (Grieger, 2016). I follow by exemplifying three empirical studies and discuss their theoretical and managerial implications. Lastly, I provide highlights of the theoretical and managerial contributions.

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Chapter 7 Appendix

7.1 Introduction

The following paragraphs delineate the dataset derived from each variable and elucidate the building of the final dataset. Each study has details of each variable, but in this chapter, I present each variable used and explain why it was adopted. I then elucidate the methodology for data collection, aiming to provide a comprehensive dataset that facilitates the testing of all hypotheses pertinent to this dissertation. I also validate the research's utilisation of the underlying philosophies. I substantiate the research's application of the foundational notions. This chapter designed to advance the theoretical contributions of the research after the empirical findings have been fully presented and contextualised.

7.1.1 Details on variables from the three empirical papers

Speed of internationalisation (SOI)

Most of the studies on speed focuses on the factors that precede or determine the rate at which firms internationalise their operations. Literature review identify that the only small number of studies that consider speed as an independent variable (e.g., Chetty et al. 2014, Hilmersson, 2016, and Khavul et al. 2010, Casillas & Acedo 2013, Chen & Yeh, 2012, Chang & Rhee, 2011). Furthermore, several scholars have investigated the elements that influence the length of time that passes (in years) between the year that firms are created and the year that they embark on their first global venture (Reuber & Fischer, 1997; Zahra et al., 2003). However, little is known about the implications of speed. For instance, research by Musteen et al. (2010) shown language proficiency has a positive effect on SOI. Additionally, research demonstrates that firms trying to enter markets with lower tiers of regulations tend to internationalise at a faster rate (Coeurderoy & Murray, 2008). Specifically, firms with a considerable measure of international experience internationalise rapidly, and that the extent of perceived risks regarding foreign operations is inversely correlated with speed (Acedo & Jones, 2007). Furthermore, prior studies on relationship between internationalisation speed and performance focus on the moderation effect of entrainment with important customer (Khavul et al., 2010), the impact of new countries FDI of organisations on speed (Chang & Rhee, 2011), effects on speed employing multidimensionality study of learning advantages of newness and time compression diseconomies (Hilmersson & Johanson, 2016), moderation effects of technological knowledge and diversity of prior international experience (Garcia-Garcia et al., 2017), the role of the geographic coverage of a firm's internationalisation path and its international

experience (Mohr & Batsakis, 2017) and the effect of timing and the speed of entering the network on small and medium enterprises (SMEs) performance (Hilmersson et al., 2022). However, there is a prevalent absence of scholarly enquiry into the moderating impacts of SOI *(Study 2)* as well as managerial cognitions *(Study 3)* on the relationship between the internationalisation process and international performance. Thus, the extant literature does not clarify the implications of internationalisation process impacting firms' international performance when moderated by firms' critical efficiency such as SOI. Furthermore, there is a lack of research examining the EMNEs' post-entry issues, such as operations undertaken using the new OLI perspective *(Study 1)*, which will contribute to internationalisation theory. Also, due to the lack of research on the moderating effects of internationalisation, the study of firms' international performance is made more interesting by employing SOI as the moderating factor.

Study 2 has a few key contributions to the international business research stream. First and foremost, there needs to be more research on DOI treated as independent variables (Hilmersson & Johanson, 2016); explicitly assigning DTA and SOI as the moderators to analyse the international performance of Chinese MNEs. Second, as the Chinese MNEs expand their operations overseas, the use of expansion strategies is significant considering how the Chinese MNEs' leverage the combined digital technologies to SOI process. Adopting new digital technologies and integrating them with existing digital technologies in their home countries provides indirect learning and bolsters their ability to internationalise faster (Gammeltoft & Cuervo-Cazurra, 2021). Third, EMNEs' decisions to adopt, discard, or archive (transition) the digital technologies they received are an intriguing mystery to scholars, coupled with the lack of study on this topic. Indeed, the strategic choice of combining the host country's technology with the home country's digital technology is to increase operational efficiency and accelerate internationalisation.

Moreover, a recent journal paper by Bhandari et al. (2023) employs the new OLI framework to theorise the impact of digitisation on company performance, revealing a curvilinear link between the two variables. Forman and van Zeebroeck (2019) contend that digital technology has proven effective in mitigating certain obstacles to information dissemination. Also, Ma et al. (2022) attest that digital platforms might operate as mediators between buyers and sellers, thus mitigating the dangers linked to foreign transactions and therefore narrowing psychic distance. Arguments from the papers suggest that SOI may influence the relationship between the new OLI and DTA.

In summary, information, digital technology, ideas, and innovative concepts propagate rapidly in today's world (Luo, 2021a). As a result, most organisations and consumers may now have fast global access to crucial information, enabling nearly every sort of cross-border movement. This phenomenon today supports practically all international business transactions that occur inside conventional channels while simultaneously conveying a significant flow of innovations and ideas

across the globe. Considering these concerns, the study fills in the gaps where future research can harness new OLI advantages by boosting DTA and improving DOI and SOI, in turn boosting firm performance. This research findings could have future implications for policymakers and business leaders alike, as understanding these dynamics can inform strategies for fostering innovation and competitiveness in emerging markets. By exploring how EMNEs navigate their technological landscapes, I can possibly uncover valuable insights that may enhance their global positioning and adaptability in an ever-changing economic environment.

The new OLI perspective and the role of SOI

The objective of *Study 1* is to examine the relationship of open resource advantage, linkage advantage, and integration advantage on international performance using the new OLI perspective. The new OLI viewpoint offered by Luo (2021b) complements the classic OLI (i.e., Ownership, Location, and Internalisation) advantages; hence, both perspectives collectively provide benefits to the new norm of digital globalisation. Using the new OLI lens, the research may provide a clearer understanding of the internalisation and orchestration of resources (such as digital technologies) at the home countries' firms where the activities are distributed to global affiliates (Luo & Tung, 2018).

Firstly, the conceptual frameworks of the three studies are developed to elucidates how Chinese MNEs use resources to advance their internationalisation capabilities. Secondly, the study is designed to discover how EMNEs are undergoing digital transformation throughout the internationalisation process by adopting the value creation strategy (Verhoef et al., 2021) through DTA. Thirdly, the design of the conceptual frameworks may offer insights as to how Chinese multinational enterprises (MNEs) manage their digital structure that entails open resources, linkage and integration advantages to global resources while maintaining business relations with their geographically diverse strategic partners (Luo et al., 2021). Notably, the 21st century global economy is increasingly characterised by data, information, and digital technology exchanges. This dynamic today underlies practically all cross-border transactions within conventional channels, while also conveying a vital global stream of ideas and innovation. It implies that open resource, linkages, and integration advantages may affect the relationship of emerging MNEs' internationalisation speed and DTA, in turn may affect their international performance.

The conceptual framework's design may provide insights into how EMNEs manage their digital structure, which includes open resources, linkages, and integration advantages to global resources, while maintaining business relationships with diverse geographical strategic partners (Luo, 2021b). Particularly, the global economy of the twenty-first century is increasingly defined by data, information, and digital technology exchanges. By capitalising on digitalisation, EMNEs can

facilitate the near-decomposability of their firm-specific assets into technology and human capital components, thereby expediting their internationalisation process (Banalieva & Dhanaraj, 2019). This dynamic now underpins almost all cross-border transactions through traditional channels, while also expressing a critical global flow of ideas and innovation. It means that advantages in open resource access, digitisation-enabled linkages, and digitisation-enabled integration may have a linear positive relationship on Chinese MNEs' DTA.

Digital technology adoption (DTA)

Scholars have been intrigued to the pace of expansion of developing economies and the emergence of EMNEs (Buckley et al., 2007; Cui et al., 2017). The digital technology in the emerging market has been growing rapidly (Fleury et al., 2024). Indeed, EMNEs are progressively using digital technologies to stay competitive. Tencent and TikTok, for example, depend on digital technology not just as a platform but also as a competitive edge (Zhao et al., 2022). EMNEs utilised capital investments and relational strategy rather than innovation to internationalise (Elia et al., 2020). Adopting a geographic relational viewpoint, EMNEs and their managers are anticipated to make use of their network of subsidiaries to forge commercial alliances, exchange business concepts, and make up for their lack of expertise (Kemeny et al., 2016; Shi et al., 2014). Thus, knowledge and know-how, such as digital technology, are strong leverage instruments for EMNEs to speed up their internationalisation process.

Moreover, adoption of new technologies requires the use of managers' cognitive domain (Strange et al., 2022). Utilising information sharing mechanisms, mental models, assumptions, prejudices, and values are all part of the cognitive domain. In addition to this, it involves the evaluation and alteration of plans and strategies, which contributes to the development of knowledge and decision-making (Sharma et al., 2021). The social and relational domains encompass organisational structure as well as communication mechanisms for the purpose of decision making and strategy formulation. It requires communication, collaboration, synchronising, and consciousness on the part of many different stakeholders. When EMNEs invest in subsidiaries in different places, the technology in their home and host countries may differ.

Therefore, EMNEs require to search and adopt suitable source of proprietary technology from geographically dispersed strategic partners. Evidence from research demonstrates that developed nations provide EMNEs organisational know-how and technology that support the innovative performance of their subsidiaries (Piperopoulos et al., 2018). The point advanced here is that the transfer of digital technology from advanced countries' firms to EMNEs could benefit firms'

digital innovations, hence improving overall EMNEs' international performance. Thus, this thesis argues that DTA positively affects firms' international performance.

Global mindset and perceived psychic distance

According to Minbaeva and Dana (2007), MNEs knowledge transfer success is determined by the traits and contexts of the providers and recipients of knowledge. In a different perspective, Straub (2009) argued that the adoption of innovation knowledge are depended on cognitive, emotional, and contextual concerns. Studies on the implementation of novel technologies indicate that cognitive obstacles have an impact on the process. Managers may lack a full understanding of the structural barriers to change, and the dominant beliefs and practices inside the company might impede individuals from adopting new perspectives (Chesbrough, 2010). The point of view put forward in this study is that the characteristics of digital technologies, the providers and the recipients play a significant role in the adoption process. For instance, Hameed et al. (2012) claimed that the information recipients play a substantial part in the process since their perceptions are crucial to their decision-making style over whether to adopt the technologies. However, the knowledge-based research stream has emphasised the organisation's capacity for integrating and combining knowledge (i.e., technology knowledge) aspects but has neglected the factors that influence technology adoption (Grant, 1996; Strange et al., 2022). Consequently, technology integration signifies intra-organisational acceptability, the adoption of organisational knowledge becomes a crucial decision (Frambach & Schillewaert, 2002; Usai et al., 2021).

Moreover, an increasingly valuable competitive edge for contemporary MNEs is the capacity of the managers to manage and use the knowledge acquired by its subsidiaries in different geographies (Lee et al., 2021; Verbeke, 2009). However, not all resources are suitable for used; hence, managers must select and decide on appropriate and suitable knowledge that may bring complementary effects or efficiency to the firms' international performance. The strategic decision of adopting new information and integrating it with current knowledge in their home countries facilitates indirect learning and accelerates their internationalisation (Gammeltoft & Cuervo-Cazurra, 2021). Hence, the complexity of international growth does not end when a firm goes global (Vermeulen & Barkema, 2002). Instead, it continues throughout the internationalisation process, when information and expertise are shared between geographically separate strategic partners.

Modern businesses are utilising advanced knowledge bases to leverage the intricacies of a progressively globalised market landscape, thereby enhancing their accessibility to the international market (Bell et al., 2001). Thereby, the utilisation of managers' cognitive domain is required for the acceptance of new technologies (Cannella et al., 2009). The cognitive domain includes information

exchange processes, mental models, assumptions, biases, and ideals (Bowen, 2007). Organisational structure as well as communication systems for decision making and strategy creation are included in the social and relational domains. It dictates communication, coordination, synchronisation, and awareness on the part of several parties. Thus, PPD and global mindset are the appropriate moderators use to examine the relationship between DTA and international performance.

Moreover, firms' internationalisation requires managerial capabilities to recognise the opportunities and enhance the process (Andersson & Evers, 2015). To be more specific, how the global perspective of EMNEs' managers (from home countries) is making sense of the environment of local markets and managing the interaction between home countries' firms and their networks in terms of digital technology sharing. Therefore, the sharing of digital technology by network partners compels evaluations by managers (Surdu et al., 2021). These managers need to possess the cognitive ability to assess the adoption decision from both local and global perspectives, and as a result, they must be able to make effective strategic decisions for their respective companies.

Therefore, PPD may influence the extent of EMNEs' DTAs, specifically in their continued knowledge-sharing relationships with their foreign strategic partners. According to research done on the phenomenon of diffusion, the location of an event seems to play a significant part. This is due to the fact that being physically close to the inventor makes it more likely for new technologies to be adopted, despite the presence of ambiguity and tacit knowledge (Baptista, 2000; Nonaka, 1994).

International performance

This thesis argues that there is a positive and direct link between the New OLI and EMNEs' international performance. Moreover, the same argument prevails for DTA and international performance. The study offers managerial implications for internationalising firms that are fundamentally concerned with how internationalisation process leads to better performance by looking at it through the moderating mechanism in *Study 2* and *Study 3*. This relationship is supported by the proposed direct positive relationship between EMNEs' internationalisation process and international performance. This is a novel and an innovative approach to the study. Further, assigning global mindset as an independent variable to investigate DTA aids *Study 3* in examining the international aspects of managerial cognitions and perhaps in gaining further clarifications of the Chinese managers' technology adoption ingenuity.

Summary

I presented the details of variables used in this research. One independent variable served as the main component of each study, while related moderating variables served as possible influences on the independent variable. I explore and describe in more detail the research hypotheses that I eventually test using empirical data. The findings from these studies can lead to a deeper understanding of the strategic decisions made by Chinese MNEs in the context of global operations. By identifying the critical factors that affect DTA, and performance, scholars and practitioners can better navigate the complexities of international markets.

7.2 Further details on certain theories

7.2.1 The behavioural theory of firms

According to behavioural theory, firms were initially thought of as coalitions of people, some of whom were organised into sub-coalitions, and as a complicated structure in which various decisions are made across the organisation (Cyert & March, 1963). While Cyert and March's (1963) theory was developed to explain fundamental economic decisions like output price and quantity, elements of behavioural theory have since been used to analyse a wide range of other phenomena, including the analysis of organisational procedures (Winter & Nelson, 1982), organisational learning (Greve, 2003b; Levinthal & March, 1981), political behaviour (Bourgeois III & Singh, 1983), acquisitions (Rostami, 2006), investment (Greve, 2003a), innovation (Geiger & Cashen, 2002; Greve, 2003a; Nohria & Gulati, 1996), internationalisation (Santangelo & Meyer, 2017; Surdu et al., 2021) and FDI location choice(Puig et al., 2019). Besides, Johanson and Vahlne (1977) develop a model of internationalisation that depicts it as a sequential process in which the current stage of internationalisation (i.e., commitment to and understanding of the foreign market) is a significant component in explaining the future route of internationalisation. This is particularly the case when the strategic partners of Chinese MNEs distribute digital technologies that may potentially be adopted by the firm for its own advantage and to speed up the process of internationalisation. Thus, there is a lack of study on managers' cognition, especially analysing from the perspective of behavioural theory of firms. Hence, this study uses the lens of behavioural theory of firms to examine the cognitive managerial factors of upper echelons in EMNEs, which may affect the adoption of digital technology and its subsequent effect on firm international performance. Individual managers make judgments based on their own ideals and capacity to deploy resources to fulfil their own objectives in such strategies (Bowen, 2007). Managers are not believed to be rationally optimising distinct social and economic objectives in behavioural theory. Instead, they are believed to pay serial attention to challenges as they emerge or as their discretion resources allow. Hence, the findings of this research will make contribution to the behavioural theory of firms and the upper echelon theory.

7.2.2 Upper echelon theory

The upper echelons approach implies that a company's behaviour is a projection of the distinctive qualities of its top management team (Hambrick & Mason, 1984); the approach in which managers make sense of their surroundings shapes a company's reaction to shifts in the environment (Thomas et al., 1993). This is clearly demonstrated in the context of Chinese outbound direct investment (OFDI), in which the operations of MNEs are heavily impacted by the intentions of their top management (Cui et al., 2013). Scholars are of the opinion that top management whose cognitive decision-making skills vary may have distinct strategic inclinations and risk appetite (Herrmann & Datta, 2002). A review of the relevant literature indicates that the performance of an organisation is contingent on the strategic choices made at the top management level; hence, good top-level managerial decision-makings is essential for firms' international performance. For example, Ceipek et al. (2021) contend that the relationship between past performance and new digital solutions is influenced by both human and social board capital. Therefore, this research explores the significance of managerial cognition factors that may affect the adoption of digital technologies, which will bring novelty to the study.

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7.3 Participant Information Statement and Survey Questionnaires

English Version

Participation Information Sheet (PIS English)

Survey Questionnaire

Simplified Chinese Version

Participation Information Sheet (PIS Chinese)

Survey Questionnaire

7.3.1 Participant Information Statement (PIS) – English Version

Research Study: Internationalisation, digital technology adoption, and international performance: Evidence from Chinese firms

Professor Vikas Kumar (Responsible Researcher)
Business School, International Business Discipline
Email: vikas.kumar@sydney.edu.au

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1. **What is this study about?**

Research Objective
The digital economy and technological progress have made it difficult for emerging market multinational enterprises (EMNEs) to use various internationalisation processes to compete with companies from more developed countries. This study examines how Chinese companies use digital technology to coordinate their data and manage their resources. The results of this study should provide findings on how the adoption of digital technology could affect EMNEs' internationalisation. Additionally, it presents practical implications for professionals in the field.

2. **Who is running the study?**

   - The study is being carried out by the following researchers:
     Mr Paul Khong, PhD Candidate, International Business Discipline

Paul Khong is conducting this study as the basis for the degree of PhD, International Business at The University of Sydney.

3. **Who can take part in the study?**

The researcher is seeking managers of multinational enterprises to participate in this study. The manager must currently occupy a management position in a Chinese multinational enterprise. Below is the list of relevant roles and job titles for participation:

- Senior Manager
- General Manager
- Head of Marketing
- Head of Human Resource
- Department Head
- Chief Technology Officer (CTO)
- Chief Executive Officer (CEO)

The participants have been invited to take part in this study because the researcher obtains the companies' information from credible database such as:

1. MOFCOM statistics bulletin appendices
2. Provincial government websites
3. Stock market databases
4. Related newspaper publications

Participants are expected to participate in the survey in a professional capacity that does not violate the terms of their employment contract.

4. What will the study involve for me?

This online survey is a tool that was made to collect the poll data and information needed for the study. It can be performed in any location as long as there is an internet connection. You will be asked about your organisation's geographic distance, culture, institutions and economic differences, global mindset, open resource advantage, linking advantage, integration advantage, entrepreneurship orientation, adoption of digital technology, and international performance. Additionally, the researcher is interested in concise background information about you and your company. The questionnaire includes instructions for responding to the queries. It should take 25 minutes to complete the questionnaire.

5. Can I withdraw once I've started?

Being in this study is completely voluntary, and you do not have to take part. However, by submitting your survey, you consent to taking part in the study. You can withdraw at any time before you submit; however, once your responses are submitted, they cannot be withdrawn. This is because they are unidentifiable, and we will not be able to tell which data is your submission. Your decision will not affect your current or future relationship with the researchers or anyone else at the University of Sydney.

6. Are there any risks or costs?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

7. Are there any benefits?

You will not receive any direct benefits from being in the study.

8. What will happen to information that is collected?

The data collected will be stored securely for a minimum retention period of five years after project completed. At the end of the retention period, the data will be disposed. The method to dispose of them is to permanently archive all copies of digital files at the University Archives at The University of Sydney.

9. Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study. Please provide us with your contact details by entering your email using the link provided at the end of the survey. This feedback will be in the form of a brief lay summary.

10. What if I would like further information?

The following researcher will be available to discuss it with you further and answer any questions you may have:

Contact: Paul Khong (Researcher)
Email: paul.khong@sydney.edu.au

11. What if I have a complaint or any concerns?

The ethical aspects of this study have been approved by the Human Research Ethics Committee (HREC) of The University of Sydney [Approval No. 2023/452] according to the *National Statement on Ethical Conduct in Human Research (2007).*

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the University:

Human Ethics Manager
human.ethics@sydney.edu.au

7.3.2 Survey Questionnaire – English Version

1. Digital Technology Adoption *(DTA - Global Partners)*

1.1 Please specify how much your firm has adopted in at least one functional area or scaled up the specified digital technologies distributed through **global network partners**:					
	None at all	A little	A moderate amount	A lot	A great deal
Traditional web	1	2	3	4	5
Cloud-based services	1	2	3	4	5
Mobile internet	1	2	3	4	5
Big data	1	2	3	4	5
IoT (Internet of Things)	1	2	3	4	5
AI (Artificial Intelligence)	1	2	3	4	5
Robotics & RPA (Robotic Processing Automation)	1	2	3	4	5
Deep learning	1	2	3	4	5
AR/VR (Augmented Reality/Virtual Reality)	1	2	3	4	5
Additive manufacturing	1	2	3	4	5

2. Digital Technology Adoption *(DTA - Local Partners)*

1.1 Please specify how much your firm has adopted in at least one functional area or scaled up the specified digital technologies distributed through **local network partners**:					
	None at all	A little	A moderate amount	A lot	A great deal
Traditional web	1	2	3	4	5

Cloud-based services	1	2	3	4	5
Mobile internet	1	2	3	4	5
Big data	1	2	3	4	5
IoT (Internet of Things)	1	2	3	4	5
AI (Artificial Intelligence)	1	2	3	4	5
Robotics & RPA (Robotic Processing Automation)	1	2	3	4	5
Deep learning	1	2	3	4	5
AR/VR (Augmented Reality/Virtual Reality)	1	2	3	4	5
Additive manufacturing	1	2	3	4	5

3. Global Mindset – Conceptualisation and Contextualisation

3.1 Please indicate your level of agreement with the following statements:					
Conceptualisation					
	Strong Disagree	Disagree	Neutral	Agree	Strongly Agree
In my job, the best one can do is to plan ahead for at the most one year.	1	2	3	4	5
Doing business with former enemies is not patriotic.	1	2	3	4	5
I think it is necessary today to develop strategic alliances with organisations around the globe.	1	2	3	4	5
Projects that involve international dealings are long term.	1	2	3	4	5
I take pride in belonging to an international organisation.	1	2	3	4	5

I believe that in the next 10 years the world will be the same as it is today.	1	2	3	4	5
In this interlinked world of ours, national boundaries are meaningless.	1	2	3	4	5
Almost everybody agrees that international projects must have a shorter payback period than domestic ones.	1	2	3	4	5
We really live in a global village.	1	2	3	4	5
In discussions, I always drive for bigger, broader picture.	1	2	3	4	5
I believe life is a balance of contradictory forces that are to be appreciated, pondered, and managed.	1	2	3	4	5
I consider it to be a disgrace when foreigners buy our land and buildings.	1	2	3	4	5
I really believe that 5 – 10 years is the best planning horizon in our line of business.	1	2	3	4	5
I find it easy to rethink boundaries, and change direction and behaviour.	1	2	3	4	5
I feel comfortable with change, surprise, and ambiguity.	1	2	3	4	5
I get frustrated when someone is constantly looking for context.	1	2	3	4	5
Contradictors are time wasters that must be eliminated.	1	2	3	4	5
I have no time for somebody trying to paint a broader, bigger picture.	1	2	3	4	5
I believe I can live a fulfilling life in another culture.	1	2	3	4	5
Five years is too long a planning horizon.	1	2	3	4	5

3.2 Please indicate your level of agreement with the following statements:
Contextualisation

	Strong Disagree	Disagree	Neutral	Agree	Strongly Agree
I enjoy trying food from other countries.	1	2	3	4	5
I find people from other countries to be boring.	1	2	3	4	5
I enjoy working on world community projects.	1	2	3	4	5
I get anxious around people from other cultures.	1	2	3	4	5
I mostly watch and/or read the local news.	1	2	3	4	5
Most of my social affiliations are local.	1	2	3	4	5
I am at my best when I travel to worlds that I do not understand.	1	2	3	4	5
I get very curious when I meet somebody from another country.	1	2	3	4	5
I enjoy reading foreign books or watching foreign movies.	1	2	3	4	5
I find the idea of working with a person from another culture unappealing.	1	2	3	4	5
When I meet someone from another culture, I get very nervous.	1	2	3	4	5
Travelling in lands where I can't read the street names gives me anxiety.	1	2	3	4	5
Most of my professional affiliations are international.	1	2	3	4	5
I get irritated when we don't accomplish on time what we set out to do.	1	2	3	4	5
I become impatient when people from other cultures seem to take a long time to do something.	1	2	3	4	5
I have a lot of empathy for people who struggle to speak my own language.	1	2	3	4	5
I prefer to act in my local environment (community or organisation).	1	2	3	4	5

When something unexpected happens, it is easier to change the process than the structure.	1	2	3	4	5
In trying to accomplish my objectives, I find, diversity, multicultural teams play valuable role.	1	2	3	4	5
I have close friends from other cultural backgrounds.	1	2	3	4	5

4. Perceived Psychic Distance (PPD)

4.1 Please indicate the level of perception of **Business Distance** between China and the Host Country:					
	Very Low	Somewhat Low	Neutral	Somewhat High	Very High
Legal and political system	1	2	3	4	5
Market structure	1	2	3	4	5
Economic environment	1	2	3	4	5
Business practices	1	2	3	4	5
Languages	1	2	3	4	5
4.2 Please indicate the level of perception of **Cultural Distance** between China and the Host Country:					
	Very Low	Somewhat Low	Neutral	Somewhat High	Very High
Power distance	1	2	3	4	5
Uncertainty Avoidance	1	2	3	4	5
Individualism	1	2	3	4	5
Masculinity	1	2	3	4	5
Long-term orientation	1	2	3	4	5

5. Open Resource Advantage

5.1 Please indicate your level of agreement for your firm in receiving digital technology access support from external partners.					
	Strong Disagree	Disagree	Neutral	Agree	Strongly
All our innovation initiatives include consumers, rivals, research institutions, consultants, suppliers, government, and universities.	1	2	3	4	5
Our innovation programmes rely heavily on external partners including consumers, rivals, research institutions, consultants, suppliers, government, and universities.	1	2	3	4	5
Our company acquires R&D services from customers, rivals, research institutions, consultants, suppliers, government, and universities.	1	2	3	4	5
Our firm acquire patents, copyrights, and trademarks from external partners for our innovative initiatives.	1	2	3	4	5

5.2 Please indicate your level of agreement for your firm in providing digital technology access support to external partners**.**					
	Strong Disagree	Disagree	Neutral	Agree	Strongly Agree
Our firm often sells licenses, such as patents, copyrights, or trademarks, to other firms so as to better benefit from our innovation efforts.	1	2	3	4	5
Our firm often offers royalty agreements to other firms to better benefit from our innovation efforts.	1	2	3	4	5
Our firm strengthens every possible use of our own intellectual properties so as to better benefit our firm.	1	2	3	4	5

5.3 Please indicate your level of agreement of your firm in providing and receiving digital technology access supports to and from external partners.					
	Strong Disagree	Disagree	Neutral	Agree	Strongly Agree
In innovation projects, our firm usually integrates all internal and external partners' information.	1	2	3	4	5
In innovation projects, our firm coordinates the activities of exchange of information among partners.	1	2	3	4	5
In innovation projects, our firm keeps internal and external partners updated about new information.	1	2	3	4	5

6. Linkage Advantage

6.1 Indicate the extent to which your firm is digitally linked to the entities listed below.					
	Very Low	Somewhat Low	Neutral	Somewhat High	Very High
Competitors	1	2	3	4	5
Suppliers for components	1	2	3	4	5
Primary users and customers	1	2	3	4	5
Complementors	1	2	3	4	5

6.2 Indicate the extent to which your firm is digitally linked to the entities listed below.					
	Very Low	Somewhat Low	Neutral	Somewhat High	Very High
Universities	1	2	3	4	5
Research institutes	1	2	3	4	5
Government agencies	1	2	3	4	5
Complementors	1	2	3	4	5

7. Integration Advantage

7.1 Indicate the extent to which your firm utilised the followings digitisation-enabled mode to facilitate global integration.					
	Never	Sometimes	About half the time	Most of the time	Always
Internationally interconnected computer systems	1	2	3	4	5
Internationally electronic communications system	1	2	3	4	5
Internationally interconnected information system	1	2	3	4	5
Internationally integrated software applications – Application Programming Interface (API)	1	2	3	4	5
Informational databases to be shared internationally	1	2	3	4	5

8. International Performance

8.1 Please indicate managerial satisfaction with company's financial performance for the past three years.					
	Extremely dissatisfied	Somewhat dissatisfied	Neutral	Somewhat satisfied	Extremely satisfied
Our international market financial performance has been exceptional.	1	2	3	4	5
Our international financial performance has exceeded that of our competitors.	1	2	3	4	5
The growth of our international sales has been exceptional.	1	2	3	4	5
Our sales expansion in international markets has surpassed that of our competitors.	1	2	3	4	5

9. International Entrepreneurship Orientation (IEO)

9.1 Please indicate your level of agreement with your firm's current practice using the statements:						
Innovativeness						
In general, top management team of my firm favours…						
A strong emphasis on the marketing of tried-and-true products or services	1	2	3	4	5	A strong emphasis on R&D, technological leadership, and innovations
How many new lines of products or services has your firm marketed in the past 5 years (or since its establishment)?						
No new lines of products or services	1	2	3	4	5	Very many new lines of products or services
Changes in product or service lines have been mostly of a minor nature	1	2	3	4	5	Changes in product or service lines have usually been quite dramatic

9.2 Please indicate your level of agreement with your firm's current practice using the statements:						
Proactiveness						
In dealing with its competitors, my firm…						
Typically responds to actions that competitors Initiate	1	2	3	4	5	Typically initiates actions to which competitors then respond
Is very seldom the first business to introduce new products/services, administrative techniques, operating technologies, etc.	1	2	3	4	5	Is very often the first business to introduce new products/services, administrative techniques, operating technologies, etc.
Typically seeks to avoid competitive clashes, preferring a "live-and-let-live" posture	1	2	3	4	5	Typically adopts a very competitive, "undo-the-competitors" posture

9.3 Please indicate your level of agreement with your firm's current practice using the statements:

Risk-taking

In general, the top managers of my firm have . . .

A strong proclivity for low-risk projects (with normal and certain rates of return)	1	2	3	4	5	A strong proclivity for high-risk projects (with chances of very high returns)
Top management team believes that aggressive, wide-ranging actions are needed to attain the firm's goals due to the environment.	1	2	3	4	5	Owing to the nature of the environment, bold, wide-ranging acts are necessary to achieve the firm's objectives
In uncertain decision-making scenarios, my business takes a bold, aggressive approach to maximise opportunity.	1	2	3	4	5	Typically adopts a bold, aggressive posture in order to maximise the probability of exploiting potential opportunities

10. Speed of Internationalisation, Degree of Internationalisation, and Control Variables

10.1 Please specify the year in which the company was founded: _____

10.2 Please specify the year the company's first international sales occurred: _____

10.3 Please specify the number of ***foreign subsidiaries*** in which your company has an ownership stake as of 2023: _____

10.4 Please specify the number of ***local subsidiaries*** in which your company has an ownership stake as of 2023: _____

10.5 Please specify the total number of employees working in your company:

1. Less the 250 _____
2. 250 – 1,000 _____

3. 1,001 – 10,000 _____
4. More than 10,000 _____

10.6 Please specify the percentage of employees working in ***foreign subsidiaries:***

1. 0% _____
2. Less than 10% _____
3. 10% - 30% _____
4. More than 30% _____

11. Industry types

11.1 Please indicate the type of industry in which your company belongs:

Category 1
Textiles _____
Wearing apparel _____

Category 2
Chemicals and chemical products _____
Rubber and plastics products _____

Category 3
Other non-metallic mineral products _____
Basic metals _____
Fabricated metal products, except machinery and equipment _____

Category 4
Computer, electronic and optical products _____
Electrical equipment _____
Machinery and equipment _____

Category 5
Leather and related products _____
Coke and refined petroleum products _____
Motor vehicles, trailers and semi-trailers _____
Other transport equipment _____
Basic pharmaceutical products and pharmaceutical preparations _____
Printing and reproduction of recorded media _____
Paper and paper products _____
Food products _____

Other categories (Please indicate the type of industry) _____

Respondent details

12. Please indicate your current position:

____ CEO/President/Chairman ____General Manager

____ Department Manager ____ Other _____ (please specify)

13. In how many years have you held this position?

_____ years

14. How many years have you been employed by this company?

_____ years

15. Please indicate your age:

___<26 ___26-30 ___31-35 ___36-40 ___41-45

___46-50 ___51-55 ___56-60 ___ >60

16. Please indicate the *Highest Level* of educational qualification you have completed:

___ Junior school certificate ___ High school certificate

___ Junior college diploma ___ University diploma

___ Bachelor's degree ___ Master's degree

___ Doctorate Other_____(please specify)

17. Did you obtain any of your degrees/qualifications overseas?

Yes____ No ____

18. Did you ever live in foreign countries for more than a year?

Yes_____ No _____

19. Did you ever work in foreign countries?

Yes _____ No _____

We appreciate your participation in completing this survey. All the information you provide in this survey will be STRICTLY CONFIDENTIAL.

Thank you very much.

7.3.3 Participant Information Statement (PIS) – Chinese Version

参与者信息声明

调查研究：国际化、数字技术应用与国际绩效：来自中国企业的证据

Vikas Kumar 教授（责任研究员）

商学院，国际商务学科

电子邮箱：vikas.kumar@sydney.edu.au

1. 这项研究是关于什么的？

研究目标

数字经济和技术进步使新兴市场的跨国企业（EMNE）难以利用各种国际化进程与发达国家的企业竞争。本研究探讨了中国企业如何利用数字技术协调数据和管理资源。本研究旨在调查采用数字技术对新兴市场企业国际化进程的影响。此外，本研究还为该领域的专业人士提供了实践意义。

2. 谁负责这项研究？

这项研究由以下研究人员负责：

- Paul Khong 先生，国际商务专业博士生

Paul Khong 正在悉尼大学攻读国际商务博士学位。

3. 谁可以参加这项研究？

研究人员正在寻找跨国企业的管理人员参与这项研究。经理人目前必须在中国的跨国企业中担任管理职务。以下是拟参与研究人员的相关角色和职位列表：

- 高级经理
- 总经理
- 营销主管
- 人力资源主管
- 部门负责人
- 首席技术官（CTO）
- 首席执行官（CEO）

之所以邀请参与者参与本研究，是因为研究人员从可靠的数据库（如："公司信息"）中获取了这些公司的信息：

1.商务部统计公报附录

2.省级政府网站

3.股市数据库

4.相关报纸出版物

参与者因其专业能力被邀请、以不违反其雇佣合同条款的方式参与调查。

4. 这项研究对我有什么意义？

该在线调查是一种工具，用于收集研究需要的民意调查数据和信息。只要有网络连接，在任何地方都可以进行。您将被问及贵组织的地理距离、文化、制度和经济差异、全球思维、开放资源优势、联系优势、整合优势、创业导向、数字技术的采用以及国际绩效。此外，研究人员还希望了解有关您和贵公司的简明背景信息。问卷包括回答问题的说明。完成问卷预计需要 25 分钟。

5. 开始后可以退出吗？

参与本研究完全出于自愿，您可以选择不参加。但是，提交调查问卷即表示您同意参与本研究。在提交之前，您可以随时退出；但是，一旦您提交了答复，就不能撤回。这是因为问卷是匿名的，我们无法辨别哪些数据是您提交的。您的决定不会影响您现在或将来与研究人员或悉尼大学其他任何人的关系。

6. 是否存在风险或成本？

除了付出您的时间，我们预计参加这项研究不会有任何风险或费用。

7. 有什么好处吗？

您不会从参与研究中获得任何直接收益。

8. 如何处理收集到的信息？

收集到的数据将在项目完成后安全保存至少五年。保存期结束后，将对数据进行处置。处理方法是将所有数字文件副本永久存档到悉尼大学的大学档案馆。

9. 我会被告知研究结果吗？

您有权获得对本研究总体结果的反馈。请通过调查结束时提供的链接输入您的电子邮件，向我们提供您的详细联系方式。反馈将以简短的非专业摘要形式提供。

10. 如果我想了解更多信息怎么办？

以下研究人员将与您进一步讨论，并回答您可能提出的任何问题：

联系人：Paul Khong（研究员）

电子邮箱： paul.khong@sydney.edu.au

手机号码：+614 01 014 486

11. 如果我有投诉或疑虑怎么办？

根据《国家人类研究伦理行为声明》（2007 年），悉尼大学人类研究伦理委员会（HREC）已批准了本研究的伦理方面[插入获得的 HREC 批准号]。

如果您对本研究的进行方式有疑虑，或者您希望向独立于本研究的人员提出投诉，请联系大学：

人类伦理经理

human.ethics@sydney.edu.au

7.3.4 Survey Questionnaire – Chinese Version

调查问卷

1. 数字技术的采用（全球合作伙伴）

1.1 请详细说明贵公司通过全球网络合作伙伴在至少一个功能领域采用了或拓展了指定的数字技术：					
	完全没有	较少	适中	较多	极多
传统网络	1	2	3	4	5
基于云端的服务	1	2	3	4	5
移动互联网	1	2	3	4	5
大数据	1	2	3	4	5
IoT（物联网）	1	2	3	4	5
AI（人工智能）	1	2	3	4	5
深度学习	1	2	3	4	5
机器人与 RPA（机器人流程自动化）	1	2	3	4	5
AR/VR（增强现实/虚拟现实）	1	2	3	4	5
增材制造	1	2	3	4	5

2. 数字技术的采用（本地合作伙伴）

2.1 请详细说明贵公司通过本地网络合作伙伴在至少一个功能领域采用或或拓展了指定的数字技术：

	完全没有	较少	适中	较多	极多
传统网络	1	2	3	4	5
基于云端的服务	1	2	3	4	5
移动互联网	1	2	3	4	5
大数据	1	2	3	4	5
AI（人工智能）	1	2	3	4	5
IoT（物联网）	1	2	3	4	5
深度学习	1	2	3	4	5
机器人与 RPA（机器人流程自动化）	1	2	3	4	5
AR/VR（增强现实/虚拟现实）	1	2	3	4	5
增材制造	1	2	3	4	5

3. 全球思维

3.1 请表明您对以下说法的同意程度：

思维上（概念化）

	很不同意	不同意	一般	同意	非常同意
我工作中最多能够提出一年计划。	1	2	3	4	5
与以前的敌国做生意并不爱国。	1	2	3	4	5
我认为现今有必要和其他组织建立战略联盟。	1	2	3	4	5

涉及国际交易的项目是长期的。	1	2	3	4	5
我以能为一个国际性组织工作为傲。	1	2	3	4	5
我认为未来 10 年的世界和现在一样。	1	2	3	4	5
在如今相互关联的世界，国界已失去意义。	1	2	3	4	5
几乎每人都认同国际项目比国内项目有着更短的投资回收期。	1	2	3	4	5
我们的确生活在一个地球村。	1	2	3	4	5
在讨论问题时我总是具有更宽广的视野。	1	2	3	4	5
人生就是一个协调矛盾的过程。	1	2	3	4	5
我认为老外买我们的土地和建筑是一种耻辱。	1	2	3	4	5
对我们业务来说 5-10 年是规划的最佳时间段。	1	2	3	4	5
考虑新界限，改变方向和行为对我来说不难。	1	2	3	4	5
我很能适应突然的变化和模棱两可的状态。	1	2	3	4	5
有人在一直寻找前因后果时会令我沮丧。	1	2	3	4	5
我认为应避免与意见不同者浪费时间。	1	2	3	4	5
我没空理会那些试着勾勒更广阔前景的人。	1	2	3	4	5
我相信我在另一种文化背景中也能过得充实。	1	2	3	4	5
以规划范围来说，5 年太长了。	1	2	3	4	5

3.2 请表明您对以下说法的同意程度：

现实生活中（情境化）

	很不同意	不同意	一般	同意	非常同意
我喜欢尝试异国美食。	1	2	3	4	5
我感觉外国人比较无聊。	1	2	3	4	5
我喜欢接手国际项目。	1	2	3	4	5

和来自其他文化背景的人接触时我会感到不安。	1	2	3	4	5
大多数时候我只读和（或）看本地新闻。	1	2	3	4	5
我的大部分社会关系都局限于本地。	1	2	3	4	5
我在陌生环境里的状态是最好的。	1	2	3	4	5
当我遇到外国人时我会对他们充满好奇。	1	2	3	4	5
我喜欢看外国的电影和书籍。	1	2	3	4	5
和来自不同文化的人合作对我没有吸引力。	1	2	3	4	5
遇到来自其他文化背景的人时我感到紧张。	1	2	3	4	5
在那些我看不懂街道名字的地方旅行会让我感到焦虑。	1	2	3	4	5
我工作过的大多数专业机构都是国际性的。	1	2	3	4	5
若没在我预定时间完成工作我会很生气。	1	2	3	4	5
当来自其他文化背景的人花长时间做一件事时，我会变得不耐烦。	1	2	3	4	5
对那些努力学习我的语言的人有好感。	1	2	3	4	5
我更喜欢待在本地的环境里（社区或组织）。	1	2	3	4	5
出乎预料的事发生时改变过程比改变结构容易。	1	2	3	4	5
我认为多样性和多元文化团队在完成我的目标时扮演着很重要的角色。	1	2	3	4	5
我的密友中有来自其他文化背景的人。	1	2	3	4	5

4. 感知的心理距离

4.1 请指出您感觉中国和投资所在国在以下商业环境差异的程度：

	非常低	较低	一般	较高	非常高
法律体系和政治制度	1	2	3	4	5

市场结构	1	2	3	4	5
经济环境	1	2	3	4	5
商业行为 / 规矩	1	2	3	4	5
商务语言	1	2	3	4	5

4.2 请指出您感觉中国和投资所在国在以下文化差异的程度：

	非常低	较低	一般	较高	非常高
对权力的畏惧（例如畏惧上级）	1	2	3	4	5
对不确定性因素避免（例如躲避风险）	1	2	3	4	5
个人主义（例如以自我为中心）	1	2	3	4	5
男性气质（例如自信武断，进取好胜等）	1	2	3	4	5
长期取向（例如强调长期承诺，尊重传统）	1	2	3	4	5

5. 开放资源优势

5.1 请注明您对贵公司接受外部合作伙伴创新支持的同意程度。

	很不同意	不同意	一般	同意	非常同意
我们所有的创新举措都包括消费者、竞争对手、研究机构、顾问、供应商、政府和大学。	1	2	3	4	5
我们的创新计划严重依赖于外部合作伙伴，包括消费者、竞争对手、研究机构、咨询顾问、供应商、政府和大学。	1	2	3	4	5
我们的公司从客户、竞争对手、研究机构、顾问、供应商、政府和大学那里获得研发服务。	1	2	3	4	5

我们的公司从外部合作伙伴那里获得了专利、版权和商标。	1	2	3	4	5

5.2 请表明您对贵公司向外部合作伙伴提供创新支持的同意程度。					
	很不同意	不同意	一般	同意	非常同意
我们的公司经常向其他公司出售专利许可，如专利、版权或商标，以便更好地从我们的创新努力中获益。	1	2	3	4	5
我们公司经常向其他公司提供版税协议，以更好地从我们的创新方面受益。	1	2	3	4	5
我们的公司加强了对我们自己的知识产权的一切可能的使用，以便更好地造福于我们的公司。	1	2	3	4	5

5.3 请注明您对贵公司向外部合作伙伴提供和接受创新支持的同意程度。					
	很不同意	不同意	一般	同意	非常同意
在创新项目中，我们公司通常整合所有内部和外部合作伙伴的信息。	1	2	3	4	5
在创新项目中，我们公司协调交流活动伙伴之间的信息。	1	2	3	4	5
在创新项目方面，我们公司持续跟进内部与外部合作伙伴的最新信息。	1	2	3	4	5

6. 联动优势

6.1 说明贵公司与以下所列实体紧密联系的程度。					
	从未发生	不经常	一般	经常	非常频繁
竞争对手	1	2	3	4	5

部件供应商	1	2	3	4	5
主要用户和客户	1	2	3	4	5
互补方	1	2	3	4	5

6.2 说明贵公司与以下所列实体紧密联系的程度。					
	从未发生	不经常	一般	经常	非常频繁
大学	1	2	3	4	5
研究机构	1	2	3	4	5
政府机构	1	2	3	4	5
互补方	1	2	3	4	5

7. 集成优势

7.1 说明贵公司利用以下模式促进全球一体化的程度。					
	从未发生	不经常	一般	经常	非常频繁
国际互联的计算机系统	1	2	3	4	5
国际电子通信系统	1	2	3	4	5
国际互联的信息系统	1	2	3	4	5
国际集成的软件应用程序-应用程序编程接口（API）	1	2	3	4	5
将在国际上共享的信息性数据库	1	2	3	4	5

8. 国际绩效

8.1 请注明管理层对公司过去三年财务业绩的满意度。

	非常不满意	有点不满意	中立	比较满意	非常满意
我们的国际市场财务表现非常出色。	1	2	3	4	5
我们的国际财务业绩已经超过了我们的竞争对手。	1	2	3	4	5
我们的国际销售增长非常出色。	1	2	3	4	5
我们在国际市场上的销售扩张已经超过了我们的竞争对手。	1	2	3	4	5

9. 跨国创业倾向

9.1 请使用以下声明说明您对贵公司目前业务的同意程度：

创新性

总的来说，我们公司的高层管理团队最喜欢……。

特别强调可靠的产品或服务的市场营销	1	2	3	4	5	非常重视研发和技术领导和创新
贵公司在过去 5 年内（或自成立以来）销售了多少种新的产品或服务系列？						
没有新的产品或服务系列	1	2	3	4	5	有很多新的产品或服务系列
产品或服务线发生的变化大多是细微的	1	2	3	4	5	产品或服务线的变化通常较大

9.2 请使用以下声明说明您对贵公司目前业务的同意程度：

主动性

在与竞争对手打交道时，我的公司……。

通常会对竞争对手发起的行为做出反应	1	2	3	4	5	通常会发起行动，竞争者随后响应

很少率先引进新的产品/服务、管理技术、操作技术等。	1	2	3	4	5	通常率先引进新的产品/服务、管理技术、操作技术等。
通常是为了避免竞争冲突，更喜欢一种“互不相干”的姿态	1	2	3	4	5	通常会采取一种竞争非常激烈的、“击败竞争对手”的姿态

9.3 请使用以下声明说明您对贵公司目前业务的同意程度：						
冒险倾向						
总的来说，我们公司的高级经理们都有...。						
对低风险项目的强烈倾向（拥有常规回报率）	1	2	3	4	5	对高风险项目的强烈倾向（拥有获得高回报的几率）
高层管理团队认为，由于环境问题的影响，需要采取积极的、广泛的行动来实现公司的目标。	1	2	3	4	5	由于环境的性质，我们采取大胆的、广泛的行动，以实现公司的目标
在不确定的决策场景下，采取一种大胆而积极的业务办法来让商机最大化。	1	2	3	4	5	通常会采取一种大胆的、攻击性的姿态以获得最大化的发展机会

10. 国际化的速度、国际化的程度和控制变量

10.1 请详细说明该公司成立的年份：_____

10.2 请说明公司首次进行国际销售的年份：_____

10.3 请说明截至 2023 年贵公司拥有所有权的外国子公司数量：

_____

10.4 请说明截至 2023 年贵公司拥有所有权的本地子公司数量：

_____

10.5 请详细说明在贵公司工作的员工总数：

5. 低于 250 _____
6. 250 - 1,000 _____
7. 1,001 - 10,000 _____
8. 高于 10,000 _____

10.6 请详细说明在外国子公司工作的员工比例：

5. 0% _____
6. 小于 10% _____
7. 10% - 30% _____
8. 超过 30% _____

11. 行业类型

11.1 请说明贵公司所属的行业类型：

第 1 类
纺织品

_____
服饰

_____

第 2 类
化学品和化工产品

_____
橡胶和塑料制品

_____

第 3 类
其他非金属矿产品

_____
基础金属

_____

预制好的金属产品，机械产品及设备除外

_____

第 4 类
计算机、电子和光学产品

_____
电气设备

_____
机械和设备

_____

第 5 类
皮革及相关产品

_____
焦炭和成品油

_____
机动车辆、挂车和半挂车

_____
其他运输设备

_____
基本药品与药物制剂

_____
印刷和复制记录媒介

_____
纸品与纸制品

_____
食品产品

_____

其他类别（请注明行业类型）

_____

参与者详细信息

12. 您在公司里的职位是：

___首席执行官/总裁/董事长　____总经理

____部门经理　___其他_____（请详细说明）

13. 您担任这个职位有多少年了？_____

14. 您在这家公司工作多少年了？_____

15. 您的年龄范围是：

___<26 ___26-30 ___31-35 ___36-40 ___41-45
___46-50 ___51-55 ___56-60 ___ >60

16. 请注明您已完成的最高学历教育水平：

___初中证书 ___高中证书
___大专文凭 ___大学文凭
___学士学位 ___硕士学位
___博士学位 其他_____（请详细说明）

17. 您在海外获得过任何学位/资格证书吗？

是, _____ 如果是的话，在_____（国家） ___否

18. 您曾经在国外生活过超过一年吗？

是, _____ 如果是的话，在_____待了_____年 ___否

19. 您曾经在国外工作过吗？

是，如果是的话，在_____工作了_____年 ___否

我们非常感谢您的参与完成本次调查。您在本次调查中提供的所有信息都将严格保密。

非常感谢。