

THE DYNAMIC RELATIONSHIP BETWEEN INTANGIBLE ASSETS AND INSTITUTIONS ENHANCING FIRM

PERFORMANCE: *A Comparative Analysis of Multinational*

Enterprisers versus National Enterprises, Advanced-economy

Multinationals versus Emerging-economy Multinationals, & Advanced-

economy Multinational Subsidiaries versus Emerging-economy

Multinationals Subsidiaries

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The candidate confirms that the work submitted is his/her own and that appropriate credit has been given where reference has been made to the work of others.

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Abstract

What motivates international business? and what factors determine the triumphs and failures of firms around the globe? are some of the most fundamental questions confronting international business research (Peng, 2004a, Buckley, 2002). Drawing from resource-based view theory (RBV) and institutional theory, this thesis explores the dynamic relationship between the performance enhancing effects of intangible assets and institutions. RBV posits that firms are driven by utilizing their resources to maximise economic rents (Barney, 1991, Dierickx and Cool, 1989), and Intangible assets are a critical driving force in achieving superior economic rent and contribute towards firm heterogeneity and performance variations . Institutional theory claim that the rule in which firms operate are set by the economic, political, and social institutions (i.e., the legal framework and its enforcement, regulatory regimes, property rights, and information systems) (North, 1990). The interdependent relationship between a firm's intangible assets and the institutional contexts in which the firm operates plays a key role in the firm's ability to appropriate economic rents from their intangible assets (Peng, 2002, Oliver, 1997). Prior research assumes that firms possessing superior intangible assets are always better off in any given environment, and the influence of the institutional setting is homogenous between firms operating in similar environments. Accordingly, this thesis offers evidence that, the performance enhancing effects of intangible assets are influenced by the level of institutional quality in which they utilized in, and these effects vary between different firms. We test this by using three sub-samples to compare home-country institutional quality effects between *multinational enterprises vs. national enterprises*, exposure to host-country institutional quality between *advanced-economy multinational enterprises (AMNEs) and emerging-economy multinational enterprises (EMNEs)*, and host-country institutional quality influences between *AMNE subsidiaries and EMNE subsidiaries*.

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List of Abbreviations

RBV	Resource-based View
MNE	Multinational enterprise
NE	National enterprise
AMNE	Advanced economy multinational enterprises
EMNE	Emerging economy multinational enterprises
IAs	Intangible assets
IQ	Institutional quality
FDI	Foreign direct investments
WEF	World economic forum
WHF	World heritage foundation
WGI	World governance indicators
GCI	Global competitive index
IPR	Intellectual property rights
IB	International Business

1. General Introduction

The determinants of firm performance and competitive advantages has been an integral topic in international business and strategy research. Extant research examining firm performance have utilized two distinctive theoretical lenses in resource-based view (RBV) and Institutional theory (Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, Chan et al., 2008, Makino et al., 2004, Hermelo and Vassolo, 2010, Oliver, , Kafouros et al., 2014, Lu et al., 2008, Wang et al., 2020). RBV theory assumes that firms are driven by their need to maximize rent generation from their firm-specific resources to gain a competitive advantage over their competitors (Barney, 1991, Dierickx and Cool, 1989), and firm-specific resources contribute towards firm heterogeneity and performance variation between firms operating in similar markets (Barney, 1991, Peteraf, 1993b). RBV is built upon the foundations that, value and rareness of the resources create economic value, whereas inimitability and non-substitutability provide the firm with the ability to lock in the rents associated with those resources (Peteraf, 1993b, Barney, 1991, Dierickx and Cool, 1989, Barney, 1986). Thus, a firm's firm-specific assets lead to superior economic rents and contribute towards a sustained competitive advantage over their competitors . Specifically, firm-specific intangible assets are regarded as a significant contributing factor towards performance variations between firms operating in a similar market (Miller and Shamsie, 1996, Barney, 1991, Hamel and Prahalad, 1990). Intangible assets are tacit in nature and hard to codify (Kogut and Zander, 1992, Hall, 1992, Conner and Prahalad, 1996), difficult to develop, accumulate, and acquire from within the firm (Itaki, 1991), thereby making them difficult to replicate by competitors (Dierickx and Cool, 1989, Nelson, 1991). Nonetheless, possessing intangible assets does not assure that a firm would be able to maximize rent appropriation, which could attain a competitive advantage in the marketplace (Barney, 1991, Barney, 1986, Kaplan and Norton, 2004). Because rent appropriation should be understood within the market context in which the firm operates (Barney and Arikan, 2001). Hall (1992, 1993), from here on we would refer to intangible resources as intangible assets (Hall, 1992, Hall,

1993). Extant research suggests that, RBV largely ignores the institutional context that set the rules of the game in which firms operate (Peng, 2002, Peng et al., and the market supporting factors (i.e., complementary assets) that firms use to accumulate, bundle, and exploit their intangible assets (Kogut and Zander, 2003, Teece et al., 1997a). Thus, following extant studies (et al., et al., 2008, et al., et al., , we use the complementarity between RBV and institutional theory to further our understanding on the influence of institutional quality influencing the performance enhancing effects of intangible assets. To do so, we use three empirical chapters that examine the influence of institutional quality on the performance enhancing effects of intangible assets. First, we examine the influence of home-country institutional quality on the performance enhancing effect on intangible assets between multinational enterprises and national enterprises. Second, we examine the parent firm's exposure to host-country institutions and its influence on the performance enhancing effects intangible assets between advanced-economy (AMNE) multinational enterprises and emerging-economy multinational enterprises (EMNE). Third, we explore the influence of host-country institutions on the performance enhancing effects of subsidiary intangible assets between AMNE subsidiaries and EMNE subsidiaries.

In empirical chapter 1, we examine the influence of home-country institutions on the performance enhancing effects of intangible assets between Multinational enterprises (MNEs) and National enterprises). *The multinational enterprises* can be defined as an organization that engages in economic activity that originates from the home-country and expand to other foreign countries . Whereas *national enterprises* operate only in their home-country and have no subsidiaries located outside of their home-country (Kim et al., 2020). Examining the influence of institutional quality on the performance enhancing effects between two heterogenous groups of firms MNEs and NEs is important, as they vary significantly in multiple characteristics (Zaheer, 1995, Contractor et al., 2003, Lu and Beamish, 2004). For example, MNEs are a globally distributed network firms that use their globally distributed network of subsidiaries

to access resources that includes intangible assets from multiple locations (Doz et al., 2001, Ghoshal and Bartlett, 1990, Gupta and Govindarajan, 2000, Nachum, 2003). Whereas NEs are limited to their home-country and likely to have resources that are more bespoke to their home-country. Furthermore, empirical studies examining the influence of home-country institutions on firm performance is inconsistent, as some studies find home-country institutions positively influence firm performance (and , Banalieva et al., 2018, Cuervo-Cazurra et al., . Prior research in international business have also find that institutions influence could also have a negative influence on firm performance . We build on recent studies in international business that explore the influence of institutions on firm performance (Meyer et al., 2011, Ngobo and Fouda, 2012, Banalieva et al., 2018, Chacar et al., 2010, Cuervo-Cazurra et al., 2018b) and institutional theory (Peng et al., 2008, North, 1990). Empirical chapter 1 extends our understanding on the influence of home-country institutions on the performance enhancing effects of intangible assets between MNEs and NEs. In doing so, further our understanding on the effectiveness of intangible assets enhancing firm performance at different levels of institutional quality, and how it differs between multinational enterprises and national enterprises.

In empirical chapter 2, we examine the parent firm's exposure to host-country institutions and its influence on the performance enhancing effects intangible assets between advanced-economy (AMNE) multinational enterprises and emerging-economy multinational enterprises (EMNE). Both AMNEs and EMNEs use network of subsidiaries to accumulate and leverage intangible assets globally (Meyer et al., 2011, Doz et al., 2001). However, they also differ in multiple characteristics. For example, generally AMNEs expand to foreign location beyond their home-country to exploit their intangible assets developed in the parent firm (Ramamurti and Williamson, 2019, Ramamurti and Singh, 2009a, Ramamurti, 2012, Nuruzzaman et al., 2019). Whereas, EMNEs lack in traditional ownership advantages (i.e., technological assets (Awate et al., 2012, Kumaraswamy et al., 2012) and international experience

and know-how (Luo and Tung, 2007)) (Ramamurti and Singh, 2009a, Ramamurti and Singh, 2009b). Therefore, EMNEs are likely to expand into foreign location with more efficient institutions to access knowledge assets, which could augment their competitiveness internationally (Cuervo-Cazurra and Genc, 2008b, Cui et al., 2017, Cui et al., 2014, Luo and Tung, 2018, Luo and Tung, 2007). We address the need for empirical studies contrasting the differences and similarities between AMNEs and EMNEs (Ramamurti and Williamson, 2019, Ramamurti and Singh, 2009a, Ramamurti, 2012, Nuruzzaman et al., 2019) by examining the influence of host-country institutional exposure on the performance enhancing effects of intangible assets between AMNEs and EMNEs.

First, our findings add to the that performance variation between AMNEs and MNEs are mainly due to superior intangible assets possessed by the AMNE in comparison to EMNEs (Banalieva et al., 2018, Chacar et al., 2010, Cuervo-Cazurra et al., 2018b, Zhu et al., 2019, Estrin et al., 2018). We find that the direct effects of intangible assets influencing firm performance was positive and significant for both EMNE and EMNEs, but the performance enhancing effects of intangible assets are stronger for EMNEs than they were for AMNEs. This can be attributed to, EMNEs need to catch up with AMNEs (Madhok and Keyhani, 2012, Lall et al., 1983, Wells, 1983, Awate et al., 2012, Awate et al., 2014) that steered EMNEs actively seek strategic assets (Sutherland et al., 2020) in countries with efficient institutions and access to complementary market resources in locations beyond their home-country (Khanna and Rivkin, 2001, Luo and Tung, 2007, Luo and Tung, 2018). We also, contribute towards extant literature that examine the role of host-country institutions on firm performance (Meyer et al., 2011, Hermelo and Vassolo, 2010, Kafouros and Aliyev, 2016a, Cuervo-Cazurra and Genc, 2008b, Yiu and Makino, 2002, Makino et al., 2002, Yan et al., 2018) but does not compare the performance enhancing effects of intangible assets between AMNEs and EMNEs, and often focus their analysis at the subsidiary-level than the parent-level (Meyer et al., 2011, Ferraris, 2014, Gaur et al., 2019b) . Second, we contribute to the

institution-based view literature (Peng, 2002, Peng et al., 2008, Peng et al., 2009, Peng et al., 2017) by enhancing the narrative that institutional effects on firm performance are not homogenous (Kafourous and Aliyev, 2016b, Kafourous and Aliyev, 2016a, Chari and Banalieva, 2015) and the performance-enhancing effects of intangible assets are dependent on the level of institutional quality in which they are utilized (Banalieva et al., 2018, Chacar et al., 2010, Cuervo-Cazurra et al., 2018b, Zhu et al., 2019, Estrin et al., 2018). Our findings suggests that the influence of institutions on firm performance vary AMNE and EMNEs.

In empirical chapter 3, we examine the dynamic relationship between host-country institutional quality and the performance enhancing effects of intangible assets between AMNE subsidiaries and EMNE subsidiaries. First, we contribute towards enhancing our understanding on the institution-based view (Birkinshaw and Hood, 1998c, Birkinshaw, 1997, Birkinshaw et al., 1998, Rugman and Verbeke, 2001, Cantwell and Mudambi, 2005b, Frost et al., 2002, Mudambi, 2008) by suggesting that the effectiveness of intangible assets influencing subsidiary performance is contingent on the institutional context in which they are utilized (i.e., accumulation, bundling, and exploitation) (Peng, 2004b, Peng, 2004a, Peng et al., 2008, Meyer and Peng, 2005). We find that, that at higher levels of host-country institutional quality, the performance enhancing effects of both AMNE and EMNE intangible assets increase under such institutional settings. However, the effects are stronger for EMNE subsidiaries than they are for AMNE subsidiaries. Therefore, we concur that the influence of host-institutions vary between AMNE and EMNE subsidiaries. Furthermore, we challenge the assumption that EMNEs are better at adapting to lower levels of institutional quality (Cuervo-Cazurra and Ramamurti, 2017, Cuervo-Cazurra and Genc, 2008b), as we find that at lower levels of host-country institutional quality AMNEs subsidiaries are more resilient at influencing subsidiary performance, and EMNE intangible assets ability to enhance subsidiary performance diminished at lower levels of host-country institutional quality. This results could be

attributed to the internalization advantages of AMNEs, as the use of internalization advantages are greater in countries with inefficient institutions (Gaur et al., 2019b). For example, prevent leakages and lower risks of property rights infringements (Buckley and Casson, 2009b, Denekamp, 1995, Rugman and Verbeke, 2003). Whereas EMNE subsidiaries were likely to require a certain level of host-country institutional quality to utilize their intangible assets to enhance performance, as efficient institutions would provide their subsidiaries to access better market resources (Hennart, 2009, Rugman and Verbeke, 2001, Galunic and Rodan, 1998). Whereas, EMNE subsidiary's internalization advantages are contingent on the efficiency of parent firms ability to overcome inefficient home-country institutions (Nguyen and Rugman, 2015). Thereby, EMNE subsidiaries could be at a disadvantage due their parent firm's lack of traditional ownership advantages (Ramamurti and Singh, 2009a, Ramamurti and Singh, 2009b, Awate et al., 2015, Awate et al., 2012, Li et al., 2018) and experience.

Second, supplement existing literature on subsidiary evolution and mandate changes (Birkinshaw and Hood, 1998c, Birkinshaw, 1997, Birkinshaw et al., 1998, Rugman and Verbeke, 2001, Cantwell and Mudambi, 2005b, Frost et al., 2002, Mudambi, 2008). We find that, the performance enhancing effects of subsidiary intangible assets are positive for both AMNE and EMNE subsidiary intangible assets. Intriguingly, with increase in host-country level of institutional quality, the effects are greater for EMNE subsidiaries than they are for AMNE subsidiaries. This could be attributed differences in subsidiary mandates between AMNE and EMNE subsidiaries. For instance, on average EMNE subsidiaries utilize an asset seeking strategy (Dunning, 1993, Figueiredo, 2011, Awate et al., 2012, Awate et al., 2014) to access superior intangible when expanding into host-countries with efficient institutions (Williamson and Raman, 2013, Kedia et al., 2012, He et al., 2018), and AMNE subsidiaries are likely to expand into countries with efficient institutions with efficient market mechanisms that provide them with better access to complementary resources (Khanna and Rivkin, 2001), reduces costs (Miller and Eden, 2006,

Meyer et al., 2009b), and safeguard their intangible assets (Teece, 1996, Teece, 2006, Cohen and Levinthal, 2000). Third, we contribute towards extant studies examining the influence of host-country institutions on subsidiary performance (Meyer et al., 2011, Ferraris, 2014, Gaur et al., 2019b, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a), as these do not examine the influence of institutions on the performance enhancing effects between AMNE and EMNE subsidiaries, and their empirical studies largely focused from an emerging economy perspective (Meyer et al., 2011, Ferraris, 2014, Gaur et al., 2019b, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a). Fourth, to the best of our knowledge there is no research explicitly comparing the performance enhancing effects of subsidiary intangible assets between AMNE and EMNE subsidiaries with relation to host-country institutional quality.

Consequently, the overall novelty of this thesis remains in it focusing the need for international business literature examining firm performance to examine the influence of both firm-specific assets and external environment in which they utilize their resources to augment firm performance. We address this by using two theoretical lenses in RBV and institutional theory to account for the firm's internal resources and external environment. In line with prior studies (Oliver, 1997, Chacar et al., 2010, Kafouros and Aliyev, 2016b, Wang et al., 2020, Banalieva et al., 2018, Wang et al., 2012b, Meyer et al., 2009a), we build on the complementarity between RBV and institutional theory to capture resource heterogeneity and the rules of the game set by institutions. Particularly, we observe that, performance variations between firms operating in similar institutional context cannot *only* be attributed firm-specific resources but should also be examined under the distinct institutional context in which they are utilized (i.e., accumulation, bundling and exploitation). Furthermore, we find that the influence of vertical differences in institutional quality (high vs low) is not homogenous but differ between different types of firms. The three empirical chapters examine the influence of institutional quality on the performance enhancing effects of intangible assets. First, a comparison between multinational enterprises versus national

enterprises from a home-country institutions. Second, a comparison between AMNEs versus EMNEs and their exposure to different levels of host-country institutions. Third, a comparison AMNE versus EMNE subsidiaries and the influence of host-country institutional quality. We hope this thesis can clarify and advance our understanding of performance variations between firms in international business, and the interconnected relationship between firm resources and the institutional context in which firm utilize their resources in explaining performance heterogeneity.

1.1 Thesis Structure

We examine the relationship between a firm's performance enhancing effects of intangible assets and institutional quality from three perspective. Therefore, the thesis is structured into three different empirical chapters as shown in Table 1. Empirical chapter 1 examines the dynamic relationship between the performance enhancing effects of intangible assets and institutions between MNEs vs. NEs. Empirical chapter 2 examines the influence of host-country institutional quality on the performance enhancing effects of intangible assets between AMNEs and EMNEs. Empirical chapter 3 examines the influence of host-country institutions on the performance enhancing effects of subsidiary intangible assets between AMNE subsidiaries vs. EMNE subsidiaries

Table 1 - Empirical Chapters

	Parent-level		Subsidiary-level
Institutions	NE vs. MNE	AMNE vs. EMNE	AMNE vs. EMNE
Home Institutions	Empirical Chapter 1		
Host Institutions		Empirical Chapter 2	
			Empirical Chapter 3

2. Literature Review

2.1 Resource-based View

The resource-based view (RBV) is founded upon the prior work by (Penrose, 1959, Wernerfelt, 1984) that focuses on the resources and capability of the firm. According to Penrose (1959) it is the heterogeneity and homogeneity of the productive services available from its resources that gives each firm its unique character (Penrose, 1959, p. 75). However, Dierickx and Cool (1989) suggest that, for firm to attain a competitive advantage, the key driving forces are stocks of accrued resources that have the elements of non-tradability, inimitability, and non-substitutability and not the flow of resources that matters (Dierickx and Cool, 1989). Wernerfelt (1984) defines resources as, “tangible and intangible assets which are semi-permanently tied to the firm” (Wernerfelt, 1984, p. 172). Whereas, Amit and Schoemaker (1993) suggest that, “*resources* are a firm’s available stock of factors that are owned and controlled by the firm, and *capabilities* tangible and intangible processes that are unique to a (Amit and Schoemaker, 1993). Resources could also be defined as tangible and intangible assets that are integrated to the firm (Caves, 1980). For instance: brand names, trade contracts, in-house personnel, efficient procedures, capital etc (Wernerfelt, 1984). Barney (1991) defines resources to include all assets and capabilities, organizational processes, firm attributes, information, knowledge etc (Barney, 1991). Barney and Clark (2007) claim that a firm is comprised of a set of tangible and intangible resources that enable a firm to implement and improve its effectiveness and efficiency (Barney, 1991, Barney and Clark, 2007). Tangible resources include (but not limited to) financial resources: i.e., equity, physical resources: i.e., machinery, land, plants, and geographical location. Intangible resources include (but not limited to) human resources: i.e. experience, training and development, experience organizational resources: i.e. know-how, organizational culture and structure, planning and

coordination, informal relationships both within the firm's network and external environment (Barney and Clark, 2007).

According to Barney (1991), the underlying theoretical argument in RBV is that "valuable and rare organization resources can be a source of competitive advantage. Resources are valuable when they enable a firm to formulate and implement strategies that improve its efficiency and effectiveness and allow firms exploit opportunities or neutralize threats from firm's external environment" (Barney, 1991, p. 106-107). In addition, causal ambiguity surrounding the relationship between a firm's resources and performance makes it harder for competing firms to replicate and understand exactly what makes a firm successful, thereby containing competitors from imitating their intangible assets (Bharadwaj, 2000, Barney, 1991). Barney (1991) claims that, resources and capabilities that are valuable and rare will attain competitive advantage, and the resources that are simultaneously rare, inimitable and non-substitutable (VRIN) generate sustained competitive advantage (Barney, 1991). Amit and Schoemaker (1993) adds to this discussion by claiming that "marshalling a set of complementary and specialized *resources and capabilities* which are scarce, durable, not easily traded and difficult to imitate, may enable the firm to earn economic rents" (Amit and Schoemaker, 1993, p. 37). These resources are also referred to as critical resource (Wernerfelt, 1984) and enables firms to operate more efficiently (generate greater economic value) and effectively (satisfying customer wants) (Barney, 1991, Peteraf, 1993a). RBV presumes that competitive advantage (greater economic value) is generated through efficiently utilizing firm resources that allows firm to produce greater perceived advantages without additional costs or at lower costs. Therefore, firms can compete in product-markets by offering heterogeneous products or by using a low cost position in comparison to its competitors (Conner, 1991). Barney (1991) defines competitive advantage as a firm "implementing a value creating strategy not simultaneously being implemented by any current or potential competitors, as competitive advantage

cannot exist for identical firms. Because, if all firm implement the exact same strategies for efficiency and effectiveness in a similar manner, they will improve and grow to the same extent” (Barney, 1991, p. 102,104). Additionally, RBV is driven by a firm’s costly-to-copy resources and capabilities, these are the sources that could generate above-average rents vis-à-vis its competitors and attain a sustainable competitive advantage (Barney, 1986, Barney, 1991, Dierickx and Cool, 1989, Wernerfelt, 1984, Mahoney and Pandian, 1992). Therefore, RBV framework argues that, the fundamental premise of sustainable competitive advantage is the barriers to imitation (Mahoney and Pandian, 1992), and imitability could be achieve through the complexity of the resources, and the complexity can arise from historical conditions, causal ambiguity, and social complexity (Barney, 1991).

Petaraf (1993) integrated RBV and competitive advantage and suggests that “there are four key theoretical conditions that influence the firm to attain a competitive advantage. Firstly, resource *heterogeneity*, from which comes Ricardian or monopoly rents. *Ex post limits to competition* are required to sustain the rents. *Imperfect resource mobility* ensures that rents are bound to the firm and shared by it. *Ex ante limits to competition* prevents costs from offsetting the rents” (Peteraf, 1993a, p. 180). The argument of Ricardian rents assumes that firms with superior resources have lower costs than its competitors (Foss, 1997, Rumelt and Lamb, 1984). Monopoly rents could be the result of government protection or barriers to competitors is high (Bain, 1956), firm size advantages could benefit the firm with economies of scale, scope and experience and irreversible commitments as a result of first mover advantage, which could contribute towards monopoly rents (Ghemawat, 1986). Ex post competition refers to a firm maintaining its competitive superiority and rent generation, there must be actors external to the firm that could limit competition to those rents. Lastly, firms require an ex ante limits to competition (Peteraf, 1993a). In other words, prior to a firm establishing a superior resource position, there should be a limit to the competition. As Petaraf (1993) explains, “if equally endowed firms occupy

certain locations, they can gain an inimitable resource position over their rivals. Moreover, fierce competition in such locations would hinder the anticipated returns” (Peteraf, 1993a, p. 185).

Furthermore, factors market imperfection such as, barriers to acquisition, imitation, and substitution of key resources (Amit and Schoemaker, 1993) would act as key barriers that would prohibit the competition from replicating and obtaining key resources, thus influencing the long term ability of the focal firm to generate rents for their firm-specific resources. In sum, RBV explains the firm’s internal sources for sustainable competitive advantage, and firm achieve this through valuable, rare, inimitable, and on-substitutable firm-specific resources and capabilities (VRIN). RBV explains why firms in the same industry may differ in their performance (Barney, 2001, Peteraf and Barney, 2003). However, Barney (2014) argue that, a key limitation to the applicability of RBV remains on its dependency on the “rules of the industry” remaining a constant (Barney, 2014). Because in uncertain environments new product markets can destabilise due to irrational market behaviour, which would require more than RBV to explain sustainable competitive advantage (Barney, 2014). Moreover, RBV needs to consider the influence of the firm’s external business environment in enhancing value of their resources and capabilities (Barney, 2001, Priem and Butler, 2001a, Priem and Butler, 2001b).

2.1.1 Criticism of RBV

Although RBV of the firm is regarded as a dominant theory in strategic management literature (Sirmon et al., 2011, Peng, 2001, Barney, 2001), According to Priem and Butler (2001a, 2001b), the two major criticisms are that, the theory is tautological and the under-developed role of the product market (industry)(Priem and Butler, 2001a, Priem and Butler, 2001b). The authors criticize the statement, *“valuable and rare resources can be a source of competitive advantage”*(Barney, 1991). The authors

remark “if the definition of valuable resources are those resources that increase efficiency and effectiveness, and competitive advantage is defined as achieving increase in efficiency and/or effectiveness, a tautology exist (Priem and Butler, 2001a, Priem and Butler, 2001b). However, Mahoney and Pandian (1992) argue that, the RBV framework allows dialogue from variety of perspectives (Mahoney and Pandian, 1992), and Conner (1991) acknowledges RBV as a “*new theory of the firm*” as it differ from industrial organization literature and transaction cost theory (Conner, 1991). In addition, extant literature on RBV recognizes that, simply owning and utilizing value creating resources is not an autonomous process and does not guarantee competitive advantage (Mahoney and Pandian, 1992, Peteraf, 1993a, Barney and Arikan, 2001, Sirmon et al., 2007). However, managing the resource effectively would enable firms to exploit opportunities in the market while concurrently gaining and sustaining a competitive advantage (Hitt et al., 2002). Although resources can be integral to firm performance, it is pivotal that these resources are integrated and effectively deployed through an appropriate strategies to achieve competitive advantage (Hitt et al., 2001b). Furthermore, value-creation from resources are conditional on two key factors: the efficient and effective management of resources (i.e. evaluation, manipulation) and the deployment of resources within the appropriate environmental context (Lippman and Rumelt, 2003). In other words, firms are required to be organized in terms of structure, control, and compensation policies to maximize the full potential of its resources to attain competitive advantage (Barney, 2001, Barney and Arikan, 2001), also known as require a resource management process (Sirmon and Hitt, 2003, Sirmon et al., 2007, Sirmon et al., 2011).

Another significant criticism of RBV is that the single paradigm of RBV has evolved into different schools of thought in explaining performance differences between firms. For example,, the resources-based view of the firm (Wernerfelt, 1984, Barney, 1991), the dynamic capability view of the firm (Teece et al., 1997a, Helfat, 1997, Makadok, 2001b), knowledge-based view of the firm (Grant, 1996) and core

competences of the firm (Prahalad and Hamel, 2000). The three schools of thought have different ways of characterizing firm resources, but they share a common theoretical structure (Barney and Clark, 2007). Extant research examining firm performance variation have used the RBV as a dominant theoretical perspective (Wernerfelt, 1984, Fouts, 1997, Russo and Fouts, 1997, Bharadwaj, 2000, Miller and Shamsie, 1996, Hitt et al., 2001a, Brush and Artz, 1999), as RBV suggests that accrued returns attained by firms are largely credited to their resources (Penrose, 1959). However, Priem and Butler (2001a, 2001b) argue that, the notion of “*value*” in RBV remains in an exogenous black box (*the external determination of value*)(Priem and Butler, 2001a, Priem and Butler, 2001b). Sanchez’s (2008) adds to this conversation by critiquing that, RBV does not clearly distinguish which attributes are considered valuable and does not provide a framework to identify such “*valuable resources*” (Sanchez, 2008). Barney (2001) acknowledges that RBV does not provide an all-inclusive answer as to what critical resources firms are required to generate a sustained strategic advantages, as the value of a particular resource depends on the specific market context in which they are applied (Barney, 2001, p. 51). In addition, Barney (1991) also does not state that the value of resources is externally determined, as the seminal paper emphasized on sustaining competitive advantage than creating competitive advantage (Makadok, 2001a). In addition, Barney and Arikan (2001) state that, “*once a firm identify a valuable, rare, costly to copy, and non-substitutable resource they possess, it is self-evident that it should exploit these resources*” to enhance their performance (Barney and Arikan, 2001, p. 174). Nevertheless, Barney and Clarke (2007) states that that, “RBV is not essentially about resources, but about characteristics that resource must possess to be a source of sustainable competitive advantage ” (Barney and Clark, 2007, p. 249-250). In addition, resource heterogeneity, immobility, rarity, imitability and substitutability remains relevant in strategy studies, but a gap in knowledge does exist as to “*how value is related to market structure*” (Barney, 2001). Lastly, RBV is lacking in the context and boundary conditions (Priem and Butler, 2001a, Priem and Butler, 2001b). Miller and Shamsie (1999) argue that, efficient management of firm resources during times of environmental uncertainty contributed towards high-

levels of firm performance (Miller and Shamsie, 1996). The authors suggest that some resources were valuable under different environmental context, highlighted the interdependent relationship between the value of resources and the external characteristics of the environment.

2.1.2 Resource Management Process

2.1.3 Resource Portfolio Structuring

A firm's resource portfolio is the sum off all the resources (tangible and intangible assets) controlled by the firm (Makadok, 2003, Sirmon et al., 2007). The process of structuring a firm's resource portfolio includes acquiring (Barney, 1986, Makadok, 2001b), accumulating (Dierickx and Cool, 1989, Thomke and Kuemmerle, 2002), and divesting resources (Sirmon et al., 2007). In today's dynamic business environments resources are susceptible to premature asset erosion due to exogenous factors, thus resources require to be protected and upgraded to protect them from threat from the firm's exogenous environment (Barney, 1991, Barney and Arian, 2001, Peteraf, 1993a). This is also known "*resource management process*" (Sirmon and Hitt, 2003, Sirmon et al., 2007). Resource management includes the processes involved in creating value and attaining competitive advantage from a firm's resources. The resource management process includes *structuring, bundling, and leveraging*" resources in the marketplace (Sirmon et al., 2007). Although the resource management process appears to be sequential, in reality these processes are complex and achieved through continuous monitoring and coordination (Sirmon et al., 2008), recombination of existing resources. Therefore, managing valuable heterogenous resources through accumulation, bundling and exploitation are essential necessities to create value and enhance firm performance, thereby allowing firms to achieve a sustained competitive advantage. This is complementary to RBV theory, which posits that existence of firm resources would

not translate to competitive advantage, but the process from which it exploits these resource would attain and sustain a competitive advantage (Mahoney and Pandian, 1992, Peteraf, 1993a).

2.1.3.1 Resource Bundling

Resource bundling is prevalent in resource structuring, which includes acquiring resources through external sources, accumulating resources within the organization, divesting inefficient resources, and bundling (i.e. stabilizing existing resources through incremental developments, pioneering existing resources to extend its value creation ability, and enriching to innovate new resources and capabilities) is utilized by firms to augment their resources portfolios and enhance firm performance (Sirmon et al., 2008, Sirmon et al., 2011). Acquiring resources is regarded as procuring resources from strategic factor markets (Barney, 1986, Kim et al., 2015), which can include both tangible and intangible resources, and resource accumulation refers to internally developed resources. Internally developed resources contribute towards causal ambiguity (Thomke and Kuemmerle, 2002), thus internally accumulated resources are likely to protect firm resources from imitability and substitutability from their competitors. Therefore, Although, imitability would not be the primary reason to engage in accumulation of firm-specific resources, but internally developed resources can be an effective and practical when strategic factor markets are unlikely to provide firms with all required resources (Sirmon et al., 2007). Furthermore, resource bundling can provide incremental updates that could augment their existing resources and enhance the longevity of value creation (Puranam et al., 2003). However, bundling existing resources can be a complex process (Morrow Jr et al., 2007), as resource recombination hinges upon factors external to the focal firm (Boyd et al., 2012), expose firm to opportunistic behaviour (Meyer et al., 2009a). For instance, *“firms prefer alliance when critical resources required to pursuit the opportunity is owned by different parties and when these resources are inseparable from other assets of the owner firms”* (Ramanathan et al., 1997, p. 65), and the means to

augment a firm's existing resources are unable to be developed in-house by the focal firm due time constraints or added costs (Madhok, 1997). For example, firms that are expanding to foreign locations seek resources from local partners in the host-country (i.e. knowledge, facilities, and local connections)(Hennart and Reddy, 1997, Beamish, 1994). In markets with high-levels of uncertainty, strategic alliances are more likely to offer firms additional flexibility along with lower risks than acquisitions (Kogut, 1991, Hitt et al., 1998). Because, alliance formation would not require significant investments and resources commitments as oppose to acquisitions (Ireland and Hitt, 1999). However, firms would prefer acquisitions to access valuable resources in the market if the required resources is not conflated with superfluous resources, such resources can be acquired by procurement of the firm or part of the firm (Hennart and Reddy, 1997, Chi, 1994). Therefore, alliance provide the opportunity for firms to access to their partner's resources which they lack (Gulati, 1999). For example, firms that are expanding to foreign locations seek resources from local partners in the host-country (i.e. knowledge, facilities, and local connections)(Hennart and Reddy, 1997, Beamish, 1994). Nevertheless, firms would prefer acquisitions to access valuable resources in the market if the required resources is not conflated with superfluous resources, such resources can be acquired by procurement of the firm or part of the firm (Hennart and Reddy, 1997, Chi, 1994)

2.1.3.2 Divesting

Under certain market conditions, resource accumulation can also have a negative influence on a firm's ability to attain and sustain its competitive advantage (Mosakowski, 2017), thus firms would prefer *divesting* such inefficient resources. Since, firms have a finite number of resources at their disposal, it remains paramount that they evaluate and divest resources that are less likely to generate value. In addition, organizational slack could lead to inferior firm performance (Sirmon and Hitt, 2009). For instance, divesting inferior resources would enable firms to reduce costs of maintaining and leveraging

such resources, as divesting resources would also break path dependencies and resource inertia (i.e., due to past contribution of firm success).

2.1.3.3 Resource Leverage

Barney and Arikan (2001) argue that, the process of leveraging resources to appropriate economic rents is creative and commercially astute (Barney and Arikan, 2001, Amit and Zott, 2001). According to Sirmon et al., (2007), “leverage includes a set of processes (i.e. mobilizing, coordinating, and deploying) to exploit market opportunities” (Sirmon et al., 2007). Whereas, Hamel and Prahalad (1993)(Luo and Tung, 2018)) argue that, firm’s leverage their resources by focusing on key strategic goals, accumulating resources more efficiently, complementing one kind of resource with another to create higher order value, conserving resources aptly, and recovering resources from the marketplace in the shortest possible time (Hamel and Prahalad, 1993). Interestingly, Hamel and Prahalad (1993) conceptualized in the seminal *Harvard Business Review* article “*Strategy as Stretch and Leverage*” that, firms that are motivated to lead an industry, or to catch-up with market leaders to overcome the liability of newness (see. (Rabbiosi and Santangelo, 2013)) and displace them would pursuit their stretched goals through resource leverage (Hamel and Prahalad, 1993). Although, the initial thesis was developed for AMNEs, it is also relevant for latecomers (i.e., EMNEs) to the international business environment (Mathews, 2006, Mathews, 2017). For example, between 1950 to 1970 the mass production industries were led by latecomers Japan, then followed South Korea and Taiwan, and currently led by China. For example, high-tech industries that are significantly dependent on intangible assets than cost advantages, but even intangible asset intensive industries were penetrated by newly formed companies. For example, South Korean and Taiwanese firms in the semi-conductor industry, South Korea in CDMA cellular communications, China with 5G technology and networking). Extant literature has substantially covered the rise of EMNEs and their catch-up strategies to compete with established AMNEs (*for further reading*

see: (Lall, 2003, Lall et al., 1983, Mathews, 2006, Mathews, 2002, Dawar and Frost, 1999, Chung, 2001, Mathews, 2017).

2.1.3.4 Environmental Uncertainty

Prior studies have recognized that a firm's external business environment is critical for firm performance (Smith and Grimm, 1987, Lee and Kwok, 1988, Rosenzweig and Singh, 1991). Particularly, environmental dynamism (turbulence/instability) . Environment dynamism can be defined as the level of change in the regulatory environment that could influence changes in industry structure, market-demand, create market instability, and overall environmental uncertainty that is exogenous to the firm, which is also likely to contribute towards ambiguity regarding the intangible assets required to attain and sustain a competitive advantage (Sirmon et al., 2007). Furthermore, industry structure can contribute towards uncertainty and market turbulence (Porter and Advantage, 1985), as barriers to entry and competition could impede bundling, and developing new assets to attain and sustain a competitive advantage. Whereas increase in market competition could motivate firms to engage in resource bundling to develop and enhance their existing resources (Sirmon et al., 2007, Carnes et al., 2017, Helfat and Raubitschek, 2000).

2.1.4 Intangible Assets

RBV attributes intangible resources are critical in driving firm performance, and firm's pool of intangible assets are likely to contribute toward resource and performance heterogeneity between firms competing in similar markets (Barney, 1991, Barney, 2001, Barney, 2014). RBV uses different terms to refer to intangible resources. For instance, *capabilities* (Collis, 1994, Brush and Artz, 1999, Yeoh and

Roth, 1999), *dynamic capabilities* (Teece et al., , Helfat, 1997, Eisenhardt and Martin, 2000, Makadok, 2001b), *knowledge* (Kogut and Zander, 1992, Kogut and Zander, 1993b, Grant, 1996, Foss,), and *core competences* (Hamel and Prahalad, 1990, Prahalad and Hamel, 2000, Wernerfelt, 1995, Eisenhardt and Martin, 2000). We recognize that, examining the affluence of these terms and their relative correctness with regards to RBV is beyond the scope of this study. Therefore, in line with previous studies (Hall, 1992, Hall, 1993), we use to term ***“intangible assets”*** to capture the aforementioned term indistinctively. Intangible assets can be defined as, *“assets”* that the firm owns or *“skills”* (i.e. competencies, capabilities, and organizational know-how that add up to the organizational culture (Hall, 1992). Intangible assets include patents, intellectual property rights, copyrights, designs, trade secrets, contracts and licenses, the know-how of employees of the firm, brand name, databases, and contracts (Hall, 1992, Hall, 1993). Intangible assets are tacit in nature and are hard to codify (Kogut and Zander, 1992, Kogut and Zander, 1993b, Conner and Prahalad, 1996, Martin and Salomon, 2003) and are likely to be traded in imperfect strategic factor markets (Barney, 1986).

Moreover, intangible assets are difficult to develop, accumulate, acquire or replicated within the firm, thus making them complex and costly to copy or replicated by competitors (Rumelt, 1984, Dierickx and Cool, 1989, Itami and Roehl, 1991). Therefore, a firm’s ability to develop (i.e., acquire and accumulate), protect, and exploit their intangible assets effectively and efficiently could determine their competitiveness and superior performance (Teece, 1998, Teece, 2000, Itami and Roehl, 1991). In other words, the more intangible assets a firm possess, the likelihood of firms attaining and sustaining competitive advantage would increase. However, variation in the performance enhancing effects of intangible assets can be attributed to resource heterogeneity between firms (Penrose, 1959, Barney, 1991), and the external environment of the firm (Sirmon et al., 2007). Thus, it would be complacent to assume a *“one size fits all”* approach to leveraging intangible assets in multiple locations, as intangible

assets could suffer from asset specificity (Balakrishnan and Fox, 1993). Nevertheless, leveraging intangible assets can contribute towards higher performance (Barney, 1991), if the value-creation ability of the intangible assets are not diminished when deployed in host-countries (Delios and Beamish, 2001, Caves and Murphy, 1976, Caves, 1971). Thus, firms are driven to expand into foreign location to exploit their superior intangible assets and successfully compete against host-country domestic firms (Hymer, 1976, Buckley and Casson, 1976, Dunning, 1988a). Because, the value of intangible assets are not likely to diminish significantly in different product-markets (Morck and Yeung, 1998), as rent appropriation from intangible assets are greater when their scope of utilization is greater (Teece, 1986a). .

2.2 Institutions

North (1990) states that, institutions are *“humanly constraints that shape human interactions, or the rules of the game in a society”* (North, 1990, p. 3). Similarly, Scott (1995) defines institutions as, *“cognitive, normative, and regulative structures and activities that provide stability and meaning to social behaviour”* (Scott, 1995). Therefore, the institutional framework can be defined as, *“the set of fundamental political social, and legal ground rules that establishes the basis for production, exchange, and distribution* (Davis et al., 1971, p. 6). North (1990) divides institutions into two categories, formal (constitutions, laws, regulations, property rights) and informal institutional constraints (sanctions, taboos, customs, tradition, and codes of conduct) (North, 1991, p. 97), which is complimentary to Scott’s (1995) three pillars: regulative, normative, and cognitive (Scott, 1995). According to North (1990) formal institutions capture rules, regulations, and standard that structure and shape interactions between members of society (North, 1990). Also, formal institutions create order and stability by providing the guidelines and enabling the prediction of behaviour (Scott, 1995). Therefore, the theoretical underpinning of institutional theory can be attributed to both sociology and economics. The sociological

perspective emphasized on the belief system, and the manner in people think and behave (Scott, 1987). Whereas, the institutional economics perspective argue that, an institutional framework serves to regulate economic activities by providing the “rules of the game” (North, 1990, p. 3). The key difference between the economic (North, 1990, Williamson, 1985), and the sociological perspective (Scott, 1995, DiMaggio and Powell, 1991) is that, the economic perspective emphasizes on efficiency, whereas the sociological perspective focuses on legitimacy. Peng (2008) echoed the views of North (1990) by arguing that institutions govern social transactions in areas such as: politics (e.g. corruptions, transparency), and social norms (e.g. ethical norms, attitude toward entrepreneurship), and law (e.g. economic liberalization, regulatory regime) (Peng et al., 2008). Therefore, in line with previous studies (Oliver, , Peng and Heath, 1996, Peng, 2002, Peng et al., 2008, Kafouros and Aliyev, 2016b) we use a broad spectrum of institutional literature to examine how institutions influence the performance enhancing effects of intangible assets. Institutions are external controls of individual and firm behaviour that encompass a diverse set of factors that range from laws, rules, and regulations, culture, and norms. (Cuervo-Cazurra et al., 2019). Extant literature acknowledge that institutions play a significant role in a market economy through the efficient functioning of market supporting mechanisms and providing the necessary infrastructure to participate in market transactions without experiencing unnecessary risks and costs (North, 1990, Williamson, 2000, Peng et al., 2008). Therefore, the institutional settings of a country are likely to expose firms to both opportunities and challenges. Nevertheless, for the purpose of this study, we would be focusing on the vertical differences (high vs low) of intuitions and its influence on the performance enhancing effects of intangible assets.

2.2.1 Formal and Informal Institutions

According to North (1990), both formal and informal institutions work in tandem to create order, reduce uncertainty, and defines the set of choice that determine transaction and production costs,

which could influence firm profitability and the feasibility of engaging in economic activity (North, 1991). Whereas an absence of an effective governance system could lead to voids in the markets for resources, which could result in firms choosing informal arrangements and internal markets (Khanna and Palepu, 1997). Thus, institutional stability would reduce transaction and information costs, thereby reduce uncertainty and information asymmetry by establishing a structure that facilitates interactions between firms and external market complementary actors (Hoskisson et al., 2000, p. 253). Informal institutions are a set of common shared understanding that are not codified into rules and standards, which are constructed by society that guide interactions between individuals in society (Scott, 2005). Informal institutions can be regarded as norms, customs, and culture that regulate socio-economic activity in each country. For instance, “*culture*” is an important attribute in a country’s informal institutions (Peng et al., 2008), culture capture a society’s cultivated standards of perceptions, cognition, and judgment or behaviour shared by members of a certain group (Fu et al., 2004, p. 288). North (1990) succinctly capture the very essence of informal institutions by stating that, in comparison to informal institutions, which are slow-moving, “formal rules may change overnight as a result of political and judicial decisions, informal constraints embodied in customs, traditions, and codes of conduct are much more impervious to deliberative policies” (North, 1990, p. 6). Thus, informal institutions can be attributed to complementing formal institutions in supporting the process of economic activity (Johnson et al., 2002). However, the effectiveness of informal institutions fade in the process of complex economic exchanges, and is replaced by more formal institutions (Williamson, 1996). Likewise, in circumstances where formal institutional constraints are inefficient, it is likely that informal constraints would compensate for it by reducing market uncertainty and provide consistency to firms (North, 1990).

Table 2 - Institutional Dimensions

Degree of formality (North, 1990)	Examples	Supportive pillars (Scott, 1995)
<i>Formal Institutions</i>	<i>Rules, laws, and regulations</i>	<i>Regulative (Coercive)</i>
<i>Informal Institutions</i>	<i>Norm, culture, and customs</i>	<i>Normative and cognitive</i>

Institutions also influence competition between firms and their strategies (Chacar et al., 2010, Cuervo-Cazurra et al., 2019). Because, a firm's strategic choices are not only determined by their firm-specific advantages and economic rationality (Wang et al., 2012a, Peng et al., 2008, Wang et al., 2012c), but also the institutional context in which firms operate (Peng et al., 2008, Narayanan and Fahey, 2005). Furthermore, firms are likely to benefit from certainty, predictability, and stability from their external environment as oppose to (DiMaggio and Powell, 1983, DiMaggio, 1988). Therefore strategic choices made by firms are also influenced by their firm-specific resources and the institutional context in which they operate simultaneously (Oliver, 1997, North, 1990). Thus, both firm strategies and their external environment change over time (North, 1990, Khanna and Palepu, 2010, Martin, 2014), and firms are likely to adopt to such institutional changes through acceptance, avoidance, and compromises when uncertainty is high (Oliver, 1991).

Furthermore, institutional variations across countries lead to differential strategic choice in international markets (Scalera et al., 2020), and multiple institutional dimensions influence a firm's strategic outcomes (Cuervo-Cazurra et al., 2019). for instance, Elango et al., (2019) in their empirical study of identify that, institutional reforms have a positive impact on firm performance (Elango et al.,

2019), Kafouros and Aliyev (2016) suggests institutional development have a positive effect on intangible assets influencing subsidiary performance (Kafouros and Aliyev, 2016b), Elango and Dhandapani (2020) find that, variations in institutional context influence firm performance outcomes (Elango and Dhandapani, 2020). We believe that understanding the influence of institutional quality on the performance enhancing effects of intangible assets is likely to add to the ongoing debate between the interdependent relationship between resources, institutions, and firm performance (Oliver, , Chacar et al., 2010, Cuervo-Cazurra and Dau, 2009, Cuervo-Cazurra et al., 2018a, Cuervo-Cazurra et al., 2019, Cuervo-Cazurra et al., 2019, Banalieva et al., 2018, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, Qian et al., 2017, Chen et al., 2015, Chari and Banalieva, 2015, Elango and Dhandapani, 2020).

2.2.2 Institution-based View (IBV)

Peng et al., (2008) suggests that, “existing IB literature has taken the market-based institutional framework for granted, and formal (laws and regulation) and informal (norms and cognitions) have been assumed away in the background” (Peng et al., 2008, p. 922). In other words, institutional business literature has recognized the influence institutions, but treat is a background condition that does not influence the strategic choices or performance. Since, both formal and informal institution influence the strategic choices a firm makes within boundaries of the institutional framework in which they operate (North, 1990, Oliver, 1997). It is likely that the performance outcomes of firms are influence by the institutional context of their country of operation (Hoskisson et al., 2000). For instance, Ingram and Silverman state that, “*institutions directly determine a firm’s strategic objectives, as it influence the formulation and implementation of strategy*” (Ingram and Silverman, 2000, p. 20). Thus, institutions are more relevant and remains more than simply a background condition (Oliver, 1997, Peng and Heath, 1996), as treating institutions as background conditions is insufficient to gain an understanding of a firm’s strategic behaviour (Scott, 2008, Oliver and Holzinger, 2008). Furthermore, Powell (1996)

highlights the importance of examining institutions by identifying the need for further analysis of institute, as the author state that , “studies should examine how institutions matter, under what circumstance do they matter, to what extent, and in what ways” (Powell et al., 1996, p. 297). Thus, the *institution-based view* (IBV) brings together the interaction between economic actors and institutional environment at different levels of analysis (Peng, 2002, Peng, 2003, Peng et al., 2009). Peng (2001) addressed the void in research that examines the interactions between institutions, organizations, and their strategic choices, and conceptualized the institution-based view (IBV) on business strategy that focused on the dynamic interaction between institutions and organizations that influence a firm’s strategic choices (Peng, 2001, Peng et al., 2018, Peng et al., 2009, Meyer and Peng, 2016). The key suggestion in IBV is that, individuals, and organizations (i.e. firms and governments) rationally pursuit their interests and make strategic choice withing the formal and informal constrains of the institutional framework (Peng et al., 2009, p. 67).

Therefore, institutions matter (Meyer and Peng, 2016), and institutional variations between different institutional frameworks significantly varies between advanced economies and emerging economies (Khanna and Palepu, 1997, Khanna et al., 2005), and these variations between different institution context are likely to influence the firm resources and strategic choices in distinct way, than homogenously. Thus, it is critical to recognize a firm’s internal resources-base and the exogenous institutional context when analysing firm performance(Peng et al., 2009, Elango and Dhandapani, 2020, Cuervo-Cazurra et al., 2019). In sum, IBV focuses on the “*dynamic interaction between the organization and the institutions and the strategic choices are outcomes of such an interaction*” (Peng et al., 2009, Peng, 2002). Because, the core purpose of institutions is to reduce uncertainty by setting the rules of the game in which firms operate and access external market resources (North, 1990, Scott, 2008) along with providing structure and defining boundaries of what is legitimate (Peng et al., 2009). Thus,

conforming to the institutional framework of the firm's country of operation is likely to enhance the effectiveness of their resources, thereby enhancing firm performance (Peng, 2002, Peng et al., 2009).

2.3.2.1 Institutional Voids and Institutional Escapism

Institutional voids can be referred to as the absence of a lack of an efficient institutional setting in the external market environment. Peng and Luo (2000) recognised emerging economies to suffer from institutional voids in market supporting institutions, in comparison to advanced economies (Khanna and Palepu, 2010). Institutional voids comprise of uncertainty in regulatory frameworks, enforcement mechanisms, ineffective factor markets, information asymmetry, and a deficiency in property-rights protection (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017, Khanna and Palepu, 2010). In addition, firms operating in countries with institutional voids generally endure from increased transaction costs, political instability, macroeconomic fluctuations, lack of contract enforcements and capital markets, and operate without specialized intermediaries that provide market supporting mechanisms. Thus, to facilitate transactions, firms are required to develop strategic responses to overcome institutional voids (Khanna and Palepu, 1997, Khanna et al., , Khanna and Palepu,). Extant studies indicate that firms overcome institutional voids in their home-countries by aggressively expanding to foreign locations in advanced economies with efficient institutions to access complementary market resources and intangible assets that are void in their home-countries. In doing so, these firms overcome inefficient institutions with inadequate factor markets (Wright et al., 2005) and protect their intangible assets from imitability, substitutions, and predatory behaviour from external environment actors in their home-countries (Hoskisson et al., 2000, Rugman and Verbeke, 2003).

This is also known as springboard theory (Luo and Tung, 2007, Luo and Tung, 2018), where firms in home-countries with inefficient institutions use international expansion to overcome competitive and latecomer disadvantages, overcome domestic market institutional constraints. Behaviour of such firms can also be referred to as institutional escapism. *Institutional escapism* is an integral part in institutional theory (Meyer and Peng, 2016). The underlying assumption of institutional escapism is that, firms expand beyond its national boundaries to escape from inefficient institutional framework in their country of operation, and seek countries with efficient institutions that provide the market certainty to utilize their resource more effectively and efficiently (Yamakawa et al., 2008, Yamakawa et al., 2013). Furthermore, it could be argued that institutional escapism could also provide firms with factor markets that are unavailable in their home-countries (Buckley and Tian, 2017, Deng et al., 2020). For instance, it is well documented that, EMNEs seek complex intangible assets through acquisitions foreign firms their sub-units that possess such intangible assets (Rui and Yip, 2008, Cui et al., 2014, Cui et al., 2017). In sum, firms internationalize to escape from their home-country institutional constraints (Deng and Zhang, 2018). In other words, firms operating in markets that are susceptible to institutional voids and uncertainty use international expansion to seek efficient institutions advanced economies that provide access to complementary factor markets and intangible resources, which would enable these firm to accumulate, bundle, and exploit their intangible assets more effectively and efficiently to enhance firm performance.

2.2.3 Resources-Based View and Institutions; Towards a Symbiotic Relationship

The resource-based view (RBV) assumes that firms are primarily motivated to maximize its economic rent generation by using their firm-specific resources to attain a sustained competitive advantage (Barney, 1991, Dierickx and Cool, 1989), and argue that firm-specific resources contribute towards firm heterogeneity. Whereas, institutional theory enable us to capture the external environment that sets

the “*rules of the game*” (North, 1990), that set the fundamental political, social, and legal ground rules which acts as the foundation of production, exchange, and distribution (Davis et al., 1971). Institutions play an integral role in a market economy by effectively supporting the functioning of market mechanisms, thereby ensuring firms engage in market transactions with minimal risks, costs, and uncertainty (North, 1990, Peng, 2002, Peng et al., 2009, Peng et al., 2008). Oliver (1997) argues that the process of firms engaging in accumulating, bundling, and exploiting their resources to augment their performance is integrated within the institutional context in which it operates (Oliver, 1997). Thus the idiosyncratic nature of resources can be shaped by the institutional context in which they are utilized by the firm (Kraaijenbrink et al., 2010). Ergo influencing the ability for intangible assets to appropriate rents and enhance firm performance (Oliver, 1997, Peng and Heath, 1996). Peng (2002) states the institution-based view (IBV) concentrates on the dynamic interaction between institutions and firms, and examines the strategic choices they make as the outcomes of such interactions (Peng, 2002, p. 253). Whereas, RBV suggests that firm-specific resources contribute towards firm heterogeneity and performance differences between firms operating in similar markets (Barney, 1991), and emphasize the importance bundle their existing assets with complementary market resources to augment their performance enhancing effects of firm resources (Teece, 1998, Teece et al., 1997b, Kogut and Zander, 1993a, Almeida, 1996, Rugman and Verbeke, 2001). However, firms are embedded in their institutional settings, thus the accumulation, bundling, and exploitation of resources are influenced by the institutions context in which they are utilized (Meyer et al., 2009a, Holburn and Zelner, 2010, Oliver, 1997). Because, efficient institutions can enhance the value creation of firm resources by simplifying the access to complementary external resources (Khanna and Rivkin, 2001), and inefficient institution could impede the firm’s ability to optimally utilize their intangible assets to enhance firm performance. Thus, institutional theory and RBV are complementary and interdependent (Meyer et al., 2009a, Wang et al., 2012b) to one another. Therefore, in line with previous studies literature (Oliver, 1997, Chacar et al., 2010, Kafouros and Aliyev, 2016b, Wang et al., 2020, Banalieva et al., 2018, Wang et al., 2012b,

Meyer et al., 2009a), and we build on the complementarity between RBV and institutional theory to examine *the influence of institutional quality on the performance enhancing effects of intangible assets*.

Empirical Chapter 1: Intangible Assets, Home-Country Institutional
Quality, & Firm Performance: A Comparative Study Between
Multinational Enterprises (MNEs) and National Enterprises (NEs)

1. Introduction

Previous studies examining firm performance have utilized two theoretical lenses in RBV and institutional theory (Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, Chan et al., 2008, Makino et al., 2004, Hermelo and Vassolo, 2010, Oliver, , Kafouros et al., 2014, Lu et al., 2008, Wang et al., 2020). RBV argues that firms are heterogeneous in their ability to develop, acquire, and exploit resources and capabilities, that enables them to generate above-normal rents and sustain competitive advantage (Wernerfelt, 1984, Barney, 1986, Barney, 1991, Mahoney and Pandian, 1992, Peteraf, 1993a, Dierickx and Cool, 1989). RBV theory centres upon a firm's ability to utilize and internalize firm-specific intangible resources to attain sustainable competitive advantages that would lead to superior firm performance (Barney, 1991, Teece et al., , Peng, 2001). Firms achieve a competitive advantage if their resources are valuable, rare, imperfectly imitable, and for which there are no generally available substitutes (VRIN) (Barney, 1991). Because, the value and the rarity of the firm-specific resources create economic value, whereas inimitability and non-substitutability provide the firm with the ability to lock in the rents associated with those resources (Peteraf, 1993b, Barney, 1991, Dierickx and Cool, 1989, Barney, 1986). Prior literature largely defines intangible resources to include both intangible assets and capabilities (Hall, 1992, Hall, 1993). Intangible assets can be defined as, tacit, knowledge-based, and technological developments that are firm-specific. For example, intellectual property, patents, trademarks, copyrights, registered design, trade secrets, organizational know-how, networks, firm culture, and the reputation of the firm and product (Hall, 1992, Hall, 1993, Caves and Caves, 1996). However, the value of firm resources should be understood in the market context in which the firms operate in (Barney, 2001). Because the accumulation, bundling, and exploitation of resources works in tandem with the external environmental actors, and these nuance interactions contribute towards firm heterogeneity that could explain performance differences between firms competing in similar environmental contexts. Therefore, to understand the influence of a firm's external environment, extant research have

institutional perspective to account for the external environment (Makino et al., 2004, Chan et al., 2008, Peng, 2002, Peng et al., 2005, Peng et al., 2018, Wright et al., 2005).

The institutional lens posits that institutions play a critical role by establishing “rules of the game” of a market economy (North, 1990, p. 3). North (1990) defines institutions as, “humanly devised constraints that structure the political, economic, and social interactions” (North, 1990, p. 97). Similarly, Scott (1995) defines institutions as “regulative, normative, and cognitive structures that provide stability and meaning to social behaviour” (Scott, 1995, p. 33). As such, institutions can be broadly defined into formal and informal institutions that provide the necessary background conditions for business to engage in economic activity. Therefore, a firm’s performance outcomes are likely a combination of their firm-specific resources and the institutional context in which they utilize their resources (Meyer et al., 2009a, et al., et al., . A country’s macro-level institutions such as the legal and regulatory frameworks play a significant role in transaction and information costs (North, 1990, North, 1991, Dixit, 2009). Therefore, efficient institutions support the effective functioning of markets would reduce uncertainty (North, 1990, p. 25), risks and costs (Meyer et al., 2009a, p. 63), and provide access to the necessary background conditions and factor markets to engage in performance enhancing activities (Meyer et al., 2009a, Oliver, 1997, Peng and Heath, 1996). However, firms operating in countries within efficient institutions are exposed to political instability, macroeconomic fluctuations, lack of contract enforcements, and operate without specialized intermediaries that provide market information and facilitate transactions . Thus, as opposed to countries with inefficient institutions, efficient institutional contexts are likely to be more conducive for firms to engage in value creating activities (North, 1990, Williamson, 2000, Peng et al., 2008, Meyer and Peng, 2005). Therefore, the performance enhancing effects firm resources are contingent .upon the institutional context in which they are utilized (Oliver, 1997, Kafouros and Aliyev, 2016b, Barasa et al., 2017), the dynamic relationship between firm resources

and institutions is likely to contribute towards performance heterogeneity between firms operating in similar institutional context (McGahan and Victor, 2010, Oliver, 1997).

In this study, we examine the influence of home-country institutional quality on the performance enhancing effects of intangible assets between multinational enterprises and national enterprises. We define multinational enterprises as organization that simultaneously operate in their home-country and in other foreign countries. Where national enterprises operations are limited to their home-country only. Thus, multinational enterprises and national enterprises differ in multiple characteristics . Generally, the most likely differentiating factor would that, MNEs are a globally distributed organization that have access to knowledge sources from multiple locations , as opposed to NEs single market. Furthermore, the interactional effects between resources, industry, and country-level characteristics influence multinational enterprises (MNEs) and national enterprises (NEs) (Makino et al., 2004). There is an extensive body of literature that compares MNEs and NEs along several dimensions. E.g. offshoring and survival of domestic firms in comparisons to MNE subsidiaries (Coucke and Sleuwaegen, 2008), intangible asset driven foreign subsidiary performance in comparison to host-country domestic firms (Kafouros and Aliyev, 2016b), institutional reforms and its impact on foreign subsidiaries in comparison to host-country domestic firms in transition economies (Kafouros and Aliyev, 2016a), productivity and firm size (Halkos and Tzeremes, 2007). In addition, empirical studies examining the influence on firm performance is somewhat conflicting, as some studies find institutions to have a positive influence of firm performance , and others find that institutional quality has a negative impact on firm performance (Chan et al., 2008, Chari and David, 2012, Chacar et al., 2010, Chari and Banalieva, 2015). To the best of our knowledge, there is a dearth in research examining the influence of home-country institutions on the performance enhancing effects of intangible assets between multinational enterprises and national enterprises, and to what extent vertical differences in institutional quality influence the performance

enhancing effects of intangible assets . However, the results could reflect institutional theory that suggest, institutions could impact rent distribution that could result in winners and losers (North, 1990).

In doing so, we endeavour to bridge and extend international business literature that examines the influence institutions on firm performance that use both RBV and institutional theory (Meyer et al., 2011, Ngobo and Fouda, 2012, Banalieva et al., 2018, Chacar et al., 2010, Cuervo-Cazurra et al., 2018b). Our approach allows us to further our understanding on to what extent does vertical differences (high vs. low) in home-country institutions influence the performance enhancing effects of intangible assets between multinational enterprises vs. national enterprises. The comparative study between two different types would allow us to understand whether home-country institutions influence the two firms homogenously, and to what extent different levels of home-country institutional quality influence the performance enhancing effects of intangible assets. Using our empirical analysis of 182,271 observations (90,182 observations for MNEs and 97,089 observations for NEs) from 66 countries for the period between 2011 to 2017. First, we contribute to international business literature that examines the influence home-country characteristics on firm performance . We extend this stream of literature by theorizing and empirically supporting the vertical difference in home-country institutional quality is likely to influence a firm's ability to utilize their intangible assets to enhance performance. The interaction effect between home-country institutional quality on the performance enhancing effects are not homogenous between firms operating similar institutional context but differ between multinational enterprises and national enterprises.

Second, we contribute to literature on the institution-based view that posits, strategic outcomes of firms are a result of their internal resources and the institutional context in which they utilize their

resources. We extend our understanding on prior studies (Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, Chari and Banalieva, 2015) by indicating that the influence of home-country institutional quality on the performance enhancing effects of intangible assets are positive and significant for both multinational enterprises and national enterprises, but at higher levels of institutional quality the performance enhancing effects are stronger for multinational enterprises than they are national enterprises. However, we find that the performance enhancing intangible assets of national enterprises to be more resilient at lower levels of institutional quality than multinational enterprises. The finding support the notion that, simply owning and utilizing value creating resources is not an autonomous process and does not guarantee competitive advantage . But, managing their resource effectively would enable firms to exploit opportunities in the market while concurrently gaining and sustaining a competitive advantage (Hitt et al., 2002).

Third, we advance our understanding on the concept that institutions matter in international business and contribute towards research on institutions (Peng, 2002, Peng et al., 2009). We find that both multinational enterprises and national benefit from institutions that provide efficient and effective market mechanism (North, 1990, Williamson, 2000), access to resources and information (Shaner and Maznevski, 2011, Lu et al., 2009, Chen et al., 2015), and encouraging cost effective product and process innovations (Sakakibara and Porter, 2001, Yiu et al., 2007). However, the performance enhancing effects of multinational enterprises intangible assets are stronger than national enterprises at higher levels of institutional quality. Conversely, at lower levels of home-country institutional quality the performance enhancing effects intangible assets are insignificant for multinational enterprises, but national enterprises intangible assets are more buoyant in influence firm performance. This could be credited to the multinational enterprise's ability to draw upon internalization advantages in home-countries with lower levels of institutional quality, as the likelihood of exploiting internalization advantages are greater

with the risks involved with inefficient institutions. Since, Internalization theory theorize that, if the advantages of internalizing transactions within the MNE exceed the costs of utilizing external markets transactions, it is efficient for MNEs to engage in transactions within the MNE (Rugman, 1986, Hennart, 1986, Verbeke, 2003). Whereas national enterprises, which are limited to their home-country do not possess internalization advantages but are likely to benefit from political connections to overcome the absence of efficient market mechanism. For instance, government intervention in resource allocation process through implementing favourable policies, which in effect influence a firm's ability to access complementary market resources (Wang et al., 2012a, Rizopoulos and Sergakis, 2010). NEs are not exposed to risks such as: opportunistic behaviour from their subsidiaries, power struggles within the MNEs network, nor rent appropriation from subsidiaries in comparison to multinational enterprises.

2. Theoretical Background

2.1 Multinational Enterprises versus National Enterprises

International business literature attributes the emergence of "*Multinational enterprise*" to its ability overcome cross-national market imperfections and reducing transaction costs through the internalization of transaction within the MNE (Buckley and Casson, 1976, Buckley and Casson, 2009b). *The multinational enterprises (MNEs)* can be defined as an organization that engages in economic activity in their home-country and expand to other foreign countries (Hennart, 2001, Buckley and Casson, 2009b, Kogut and Zander, 1993b). MNEs are also known as "network firms" due to their ability to utilize (i.e., accumulate, bundle, and exploit) their resources through a network of geographically dispersed subsidiaries (Doz et al., 2001, Ghoshal and Bartlett, 1990, Gupta and Govindarajan, 2000). Kogut and Zander (1992,1993) posits that, a firm's ability to transfer extremely tacit and strategic

knowledge across countries legitimizes the existence of MNEs (Kogut and Zander, 1992, Kogut and Zander, 1993b). MNEs can use their size to leverage economies of scale (Caves and Caves, 1996), economies of scope (Tallman and Li, 1996), transfer knowledge within their network of subsidiaries (Kogut and Zander, 1992, Foss and Pedersen, 2002, Tsai, 2001, Driffield et al., 2016), and benefit from internalization advantages .

Whereas we define “*national enterprises*” (NEs) as firms that are limited to operating only in their home-country and have no subsidiaries located outside of their home-country (Kim et al., 2020). NEs are likely to accumulate, bundle, and exploit their intangible resources in local markets (Kotabe et al., 2017, Wu et al., 2019a). NEs are limited in their ability to enhance their performance by accessing complementary market resources only in their home-country external environment (Chacar et al., 2010, Doh et al., 2017) and do not possess the luxury of tapping into multiple knowledge sources outside their home-country (Lavie and Fiegenbaum, 2000). Therefore, the key differentiating factor between “*Multinational enterprises and National enterprises*” is that MNEs are simultaneously integrated in the parent firm’s home-country external environment and the host-country external environment of their geographically distributed subsidiaries (Henisz and Swaminathan, 2008, Henisz, 2000, Henisz, 2003, Wells, 1998, Wells, 1983), and NEs are limited to integrating only in their home-country external environment.

2.2 Intangible Assets and Firm Performance

RBV suggests that intangible resources are the key drivers of sustainable competitive advantage and performance heterogeneity between firms operating in similar markets (Grant, 1996, Barney, 1991,

Amit and Schoemaker, 1993, Dierickx and Cool, 1989, Wernerfelt, 1984, Conner, 1991). In this study, we use a generally accepted definition of intangible assets provided by Hall (1992, 1993). Thus intangible assets include knowledge-based and technological developments that are firm-specific, such as; intellectual property, patents, trademarks, copyrights, registered design, trade secrets, organizational know-how, networks, firm culture, and the reputation of the firm and product (Hall, 1992, Hall, 1993). Following Hall (1992, 1993), from here on we will be classifying intangible resources as “intangible assets”. Intangible’s assets are the very foundation of a firm’s ability to generate economic rents, , thus intangible assets are a major sources of value creation that drives firm performance and enable them to attain a competitive advantage (Dierickx and Cool, 1989, Hitt et al., 2001a, Amit and Schoemaker, 1993, Itami and Roehl, 1991, Helpman, 1992, Kramer et al., 2011). Since the complexity of intangible assets make them tacit in nature and difficult to replicate . From an RBV perspective, superior firm performance and sustained competitive advantage are conditional on the firm’s ability to utilize its existing resource-advantages: *accumulate* (develop) new resource opportunities, and *bundle* existing resources to develop new combinations, and *exploit* and *protection* such resources (Sirmon et al., 2007, Sirmon et al., 2008, Knott et al., 2003, Thomke and Kuemmerle, 2002, Teece, 1998, Teece, 1996, Teece, 1986a). The complex nature of intangible assets makes it challenge to be understood and replicated by competitors . Therefore, intangible assets contribute towards firm heterogeneity and performance variations between firms operating in similar markets (Barney, 1986, Barney, 1991, Teece et al., , Peteraf, 1993b, Dierickx and Cool, 1989). Firms create this heterogeneity by developing intangible assets that are valuable, rare, inimitable, and non-substitutable (VRIN) (Barney, 1991).

2.3 Home-Country Institution Quality

Institutions can be defined as “the set of fundamental political, social, and legal ground rules that forms the basis of production, exchange, and distribution” (Davis et al., 1971, p. 6). The institutional framework consists of both formal and informal constraints create the “rules of the game” (North, 1990, Scott, 1995, Davis et al., 1971). The institutional framework plays a significant role in shaping a firm’s strategic directive than merely acting as background conditions (Ingram and Silverman, 2002, Chan et al., 2008, Hermelo and Vassolo, 2010, Oliver, . Institutions determine which actions are acceptable and supportable within the institutional framework. Thus, institutions provide market actors with essential infrastructure and efficient functioning of market mechanisms that would reduce uncertainty, lower transaction and information costs, and minimize risk and uncertainty (North, 1990, Peng et al., 2009). For instance: key institutional characteristics comprise of distribution infrastructure that enables the movement of inputs to manufacturers and final goods to the end customer; government institutions that champion transparency, enforce property rights, and reduce corruption; financial institutions to enable capital movement (Wright et al., 2005, Berry et al., 2010, Geleilate et al., 2016). Thus, institutions the costs of doing business in each location, and thereby the profitability and performance of a firm’s business activity in a country (North, 1990, Khanna and Rivkin, 2001, Khanna and Palepu, 1997).

Institutional quality, or the degree to which institutions are functioning efficiently can be defined as the extent to which economic, political, and social institutions are established in providing the infrastructure support and background conditions for the efficient functioning of markets (Hermelo and Vassolo, 2010, Chan et al., 2008). As such, countries differ in their level of institutional quality (Zaheer, 1995, Kostova and Zaheer, 1999, Ghemawat, 2001) with regards to their ability to provide a consistent, certain, and impartial institutional framework to engage in economic activity (Chan et al., 2008, Hermelo and

Vassolo, 2010). Therefore, the level of institutional quality in given location reflects the availability of market resources, market opportunities, the costs of information and transactions, and the efficiency of the regulatory and contractual framework (North, 1990, Chan et al., 2008, Hoskisson et al., 2013). For instance, countries with efficient institutions function in a stable, certain, and trustworthy way by offering a broad access to information and other sources for innovation and performance (Shaner and Maznevski, 2011, p. 557). While countries with lower levels of institutional quality (i.e., underdeveloped institutions) are inefficient or poor at enforcing rules and regulations (Hitt et al., 2004, Hoskisson et al., 2000, North, 1990, Khanna and Palepu, 1997). furthermore, countries with lower levels of institutional quality lack reliable market information, intermediary institutions, stable government decision making, and efficient bureaucracy, which could lead to institutional voids (Peng and Luo, 2000) and institutional uncertainty. Similarly, inefficient institutions could also lead to underdeveloped factor markets, and inefficient intermediaries that would increase transaction costs (North, 1990, Peng, 2003), weak legal and regulatory institutions would result in a lack of property rights protection, poor implementation of commercial laws, and non-transparent judicial systems (Khanna and Palepu, 1997).

The interdependent relationship between a firm's internal resources and institutions play a key role in optimizing a firm's value enhancing assets (Peng, 2002, Peng et al., 2008, Peng et al., 2009). Although, RBV credits firm heterogeneity and performance variation between firms to firm-specific resources that are valuable, rare, inimitable, and non-substitutable resources (Wernerfelt, 1984, Barney, 1991, Dierickx and Cool, 1989, Peteraf, 1993b)- institutional theory argues that performance variation between firm operating in similar institutional context could also be a reflection of the firm's institutional environment. For instance, with higher levels of institutional quality would provide access to complementary market resources (i.e., supporting infrastructure, enforcement of contracts, effective legal and regulatory system, access to market resources and information). While countries with lower levels of institutions

would expose firm to institutional voids and uncertainty (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017, Khanna and Palepu, 2010).

3. Hypothesis Development

3.1 Intangible Assets and Firm performance

International business literature posits that MNEs expand into foreign countries to exploit their superior proprietary intangible assets developed in their home-country (Buckley and Casson, 1976, Hymer, 1976, Dunning et al., 1989, Dunning, 1981). MNEs have evolved into a network of geographically dispersed subsidiaries that utilize their subsidiaries to accumulate, bundle, and exploit their intangible assets (Kogut and Zander, 1992, Kogut and Zander, 1993b, Nelson and Winter, 2002, Driffield et al., 2016, Delios and Beamish, 1999, Tallman and Li, 1996). Changes in subsidiaries mandates (Cantwell and Mudambi, 2005b) and subsidiary evolution (Birkinshaw and Hood, 1998b, Dunning, 2003) has led to subsidiaries developing their own subsidiary-specific advantages (Birkinshaw et al., 1998, Moore and Heeler, 1998, Rugman and Verbeke, 2001, Foss and Pedersen, 2002) and internalize these advantages within the MNE network (Gaur et al., 2019b, Buckley and Casson, 2019, Rugman and Verbeke, 2008). In doing so, MNEs augment the value creation of their intangible assets by accessing complementary market resources from both their home and host-country external environment. These attributes are likely to decrease MNEs dependency on the home-country (Frost, 2001), due to their ability to access complementary assets and more conducive institutional settings to accumulate, bundle, and exploit their intangible assets from their network of subsidiaries. Because, the intangible assets developed at the subsidiaries can be exploited through market internalization within the focal firm as well as the MNE's network of subsidiaries (Rugman and Verbeke, 1992, Rugman and Verbeke, 2003).

However, the ability to use their internal network this could result in a double-edged sword for MNE parent firms, as subsidiaries could garner interorganizational power (Foss and Pedersen, 2002) through its accessibility to crucial resources from their host-country external environment (Meyer et al., 2011, Ferraris, 2014). This could lead to subsidiaries appropriating rents from the MNE (Mudambi and Navarra, 2004) and contribute towards inter-organizational disharmony and power struggles (Kano and Verbeke, 2019). Thus, impeding the MNEs ability to fully capture the performance enhancing effects of its intangible assets at a parent-level. On the contrary, NEs are limited to a single market (i.e., Home-country), and lack traditional ownership advantages of MNEs (Dunning, 2001) and network advantages that are founded quintessentially in MNEs. In comparison to MNEs, NEs are restricted to accessing complementary resources only from their home-country external environment to utilize (i.e., accumulation, bundling, and exploiting) their intangible assets and enhance performance (Chacar et al., 2010, Doh et al., 2017). Although, NEs are not exposed to risks such as: opportunistic behaviour from their subsidiaries, power struggles within the MNEs network, nor rent appropriation from other sister subsidiaries. We propose that the benefits of internalization advantages of MNEs network to access complementary resources from multiple external environments to accumulate, bundle, and exploit their intangible assets, and their ability escape inefficient institutions in their home-country would outweigh the limitations of operating in a single market. Thus, based on the above arguments we hypothesize that the performance enhancing effects of intangible assets are positively associated with both MNEs and NEs, and the performance enhancing effects of intangible assets are greater for multinational enterprises than they are for national enterprises

Hypothesis 1a. The performance enhancing effects of intangible assets are stronger for multinational enterprises than they are for national enterprises.

3.2 Home-country Institutional Quality and Intangible Assets

institutions establish the rules of the game (North, 1990) by establishing the context and functioning of markets in which firms operate. Without the 'rules of the game' that determine a country's incentive structure and economic specialization, complex interfirm transactions would be too costly to complete (North, 1990, Williamson, 2000). Therefore, institutions could act as enablers and constrainers in a firm's ability to utilize their resources to create value and enhance performance (Oliver, 1997). A firm's home-country institutional context plays an integral role in firm performance in countries with efficient institutions (Porter, 1990) and inefficient institutions (Cuervo-Cazurra and Dau, 2009, Cuervo-Cazurra et al., 2018a, Cuervo-Cazurra et al., 2018b). Extant research posits that home country institutional environment plays a key role in influencing firm performance for both MNEs and NEs (Henisz, 2003, Mudambi and Navarra, 2002, Peng, 2003, Peng, 2002). For instance, economic institutions administer arrangements between economic actors and stipulate the way in which firm can operate and compete. Property rights institutions are likely to significantly influence the relationship between intangible assets and performance, as intellectual property rights institution determine the extent to which firms can appropriate rents from their intangible assets (Arora and Ceccagnoli, 2006, Maskus, 2000, Chen and Puttitanun, 2005), and the duration from which firms can accrue rents from their intangible assets (Park, 2008). Adversely, countries with weak intellectual property would increase the threat of imitation (Zhao, 2006, Helpman, 1992, Chen and Puttitanun, 2005, Prahalad and Hamel, 2000) and impede rent appropriation (Peng and Heath, 1996). Therefore, institutions provide firms with the necessary infrastructure and market mechanisms to accumulate distinctive resources (Cuervo-Cazurra, 2011, Khanna and Palepu, 1997), acquire, and leverage their resources (Sirmon et al., 2007, Ndofor et al., 2011).

In this study, we examine the influence of home-country institutional quality on the performance enhancing effects of intangible assets between MNEs and NEs. Conforming to prior studies examining the role of institutional quality (Peng, 2003, Chan et al., 2008, Kafourous and Aliyev, 2016b, we integrate both public and private institutions that could influence the value creation of intangible assets. Because the performance enhancing effects of intangible assets are contingent upon the bundling opportunities and complementarities available in the external market (Barney, 2001, Teece, 1998). The market protection to maximize the rent generation potential of intangible assets (Teece, 1998, Teece et al., . Therefore, firms are reliant on both their intangible assets and the institutional context in which they utilize their intangible assets to enhance firm performance (Oliver, 1997, Barney, 2001). Furthermore, intangible asset accumulation, bundling, and exploitation would be conditional on the strategic factor markets' imperfections (i.e., barriers to acquisition, imitation, substitutions) (Barney, 1986, Barney, 1991, Barney, 2001, Amit and Schoemaker, 1993, Penrose, 1959). As such, these barriers would prevent competitors from procuring and imitating a firm's superior intangible assets, which could influence the longevity of rent appropriation of intangible assets and contribute towards performance heterogeneity between competing firms. Thus, firm performance is contingent upon the combination of the firm's ability to accumulate, bundle, and exploit their superior intangible assets (Wernerfelt, 1984, Barney, 1991, Dierickx and Cool, 1989, Peteraf, 1993b) and the institutional context that govern the market, which provides the necessary infrastructure and background conditions (North, 1990, Williamson, 2000, Scott, 2001). Thus, the performance-enhancing effects of intangible assets are not merely a reflection of a firm's intangible assets (Wernerfelt, 1984, Barney, 1991, Dierickx and Cool, 1989, Peteraf, 1993b), but also a reflection on institutional context in which these intangible assets are utilized in (North, 1990, Scott, 1995, Scott, 2001).

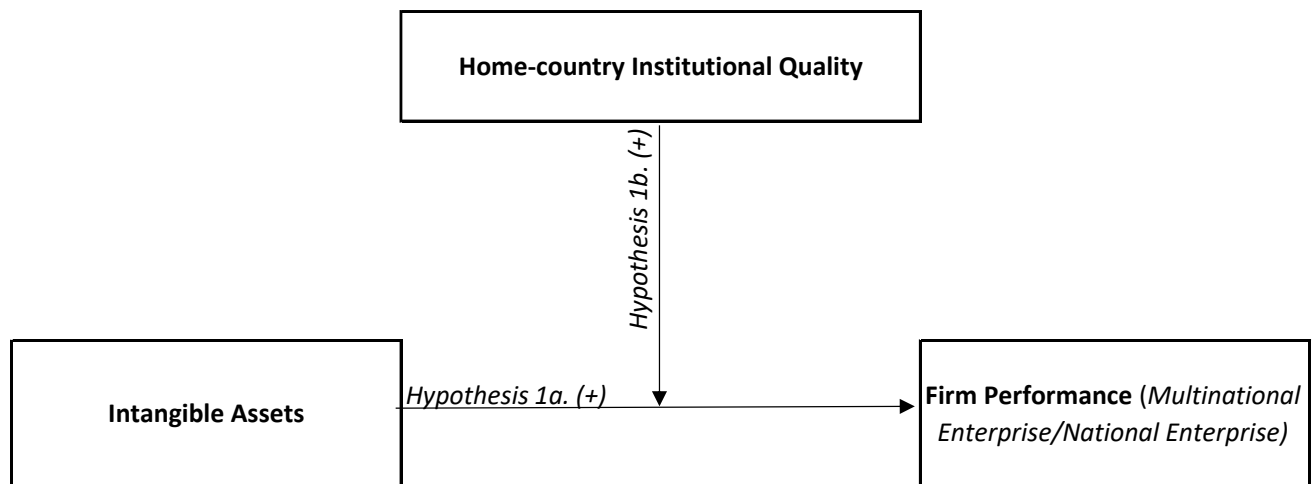
Countries with efficient institutions would provide stronger intellectual property rights (IPR) protection (Chen and Puttitanun, 2005), reduce information asymmetry by decreasing transaction and information costs (North, 1990, Williamson, 2000, Brouthers, 2013, Hoskisson et al., 2013, Chen et al., 2015, Henisz and Swaminathan, 2008). On the contrary, countries with inefficient institutions would lead to ineffective judicial systems that would increase the costs on contracts and a lack in property rights protection (Chan et al., 2008, Cuervo-Cazurra and Genc, 2008b). Thus, firms operating in countries with inefficient regulatory institutions would be exposed to an increased threat of intangible asset imitation, due to underdeveloped IPR infrastructure (Peng, 2002, Helpman, 1992, Peng and Heath, 1996). Furthermore, effective legal institutions would provide firm with an efficient IPR protection regime that would allow firms to capture greater economic rents from their intangible assets (Park, 2008), thereby augmenting rent appropriation of intangible assets (Hall, 1992, Hall, 1993, Villalonga, 2004). Both MNEs and NEs benefit from operating in efficient institutional contexts with strong IPR protections, as it augments their ability to accumulate intangible assets by accessing complementary market resources. However, this could also have a negative impact on NEs, as IPR institutions are likely to prohibit or decrease NEs from engaging in intangible assets imitation from well-established multinational firm in their home-country (Deardorff, 2011, Mahmood and Rufin, 2005). Whereas a weak IPR regime could negatively influence a firm's intangible assets due to the threat of imitation and substitution (Zhao, 2006, Helpman, 1992, Chen and Puttitanun, 2005, Prahalad and Hamel, 2000), ineffective legal and regulatory institutions could lead to an increase in transaction costs (North, 1990), and escalate opportunistic behaviour (Meyer et al., 2009a). Therefore, in effective regulatory and legal institutions would hinder the value creation of intangible assets (Peng and Heath, 1996), which could leads to premature asset erosion (Dierickx and Cool, 1989),

Moreover, home-countries with effective regulatory institutions would comprise of effective enforcement of laws and regulations that would reduce uncertainty and information asymmetries between the contracting parties to prevent opportunistic behaviour (Meyer et al., 2009a, North, 1990, Peng et al., 2009). Thus, access to complementary market resources in the external environment (Rugman and Verbeke, 2001, Corredoira and McDermott, 2014, Delios and Beamish, 2001) would provide firms with better opportunities to bundle their intangible assets (Wan, 2005) by ensuring efficient market exchanges and reduce the risks involved with transacting with external market actors (Oxley, 1999). Whereas, countries with lower levels of institutional quality lack in complementary resources (Sirmon et al., 2007, Hoskisson et al., 2013) expose firms to external threats due to lack of contract enforcement, opportunistic behaviour from contracting parties and increase the vulnerability of imitation and substitutions. For example, Institutional voids (Khanna and Palepu, 1997) would expose firms to market imperfections, impede access to complementary resources due to information asymmetry, and failures in capital, technological and resources markets. Furthermore, the use of intangible assets can depend on political institutions (Henisz, 2000). Inefficient political institutions are characterized by political instability, where politicians interfere in decisions to change the rules of the market (Fuentelsaz et al., 2015). Firms could influence politicians by engaging in lobbying, campaign contributions, bribery, and through appointing government representatives on company boards (Lawton et al., 2013), which could result in favourable laws and regulations. Likewise, countries with inefficient institutions, government intervene in resource allocation process through implementing favourable policies, which in effect influence a firms ability access complementary market resource (Wang et al., 2012a, Rizopoulos and Sergakis, 2010). In addition, political instability could increase uncertainty on government policies and corruption. For instance, political institutions with check and balances would reduce corruption and the likelihood of a predatory government, as firms would not have the need to shelter their profits for the fear of expropriation (Caprio et al., 2013), instead could invest in augmenting their performance enhancing intangible assets (Henisz, 2004).

Extant literature acknowledges that, the survival and performance of firms is in their ability to respond to the institutional context in which they are embedded in (Meyer et al., 2011). The performance enhancing effect intangible assets for both MNEs and NE are likely to be influenced by the level of home-country institutional quality. However, MNEs and NEs intrinsically vary in their abilities to adapt varying levels of institutional quality in their home-country. For instance, MNEs can escape institutional voids by utilizing (i.e., accumulating, bundling, and exploiting) by accessing market with efficient institutions through their network of subsidiaries (Bartlett and Ghoshal, 1989, Doz et al., 2001). On the contrary, NEs lack the network advantages of MNEs (Tallman and Chacar, 2011, Cuervo-Cazurra and Un, 2004, Mudambi and Navarra, 2004) and are limited to accessing home-country complementary market resources to accumulate, bundle, and exploit their performance enhancing intangible assets. Based on the above arguments, we suggest that on average both MNEs and NEs are likely to augment the performance enhancing effects of intangible assets when operating in home-countries with high-levels of institutional quality. However, in home-countries with lower levels of institutional quality, it is likely that the performance enhancing effects of MNE intangible assets are stronger than they are for NEs intangible assets. Therefore, we hypothesise that, the performance enhancing effects of intangible assets are positively influenced by higher levels of home-country institutional quality, and the performance enhancing effects of intangible assets are stronger for MNE intangible assets than they are for NE intangible assets.

Hypothesis 1b. *“the stronger the level of home-country institutional quality the greater the performance enhancing effects of intangible assets for multinational enterprises than they are for national enterprises”*

Figure 1 - Empirical chapter 1: Conceptual Framework



4. Methodology

4.1 Data

We test our hypotheses using longitudinal firm-level data for Multinational enterprises (parent-level) and National enterprises, and country-level data on home-country institutional quality. Firm-level data for MNEs and NEs were obtained from the ORBIS database (provided by Bureau van Dijk). We categorized MNE is a firm that is headquartered in one country and has subsidiaries (more 50.01% ownership to avoid portfolio investments) in other foreign countries. NEs is a firm that operates in a single country that has no foreign subsidiaries. The final sample consists of 182,271 observations (90,182 observations for MNEs and 97,089 observations for NEs) from 66 countries for the period between 2011 to 2017. In line with prior studies (Shaner and Maznevski, 2011, Chan et al., 2008, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a), we measure institutional quality using country level data from the World Economic Forum's (WEF) Global Competitive Report. The WEF's report captures both public and private institutions. Table 25 provides a detailed description of the

components utilized to measure the level of institutional quality, and the weights used (Schwab, 2017) (see Appendix 1). To address extreme values influencing observations on both dependent and independent variables, we use the inverse hyperbolic sine (IHS) transformation. It is a form of logarithmic transformation with the added benefit of handling negative values. The transformation improves normality of the data, and down-weights extreme values (Nyberg et al., 2010, Burbidge et al., 1988, Carroll et al., 2003). Similar to logarithmic transformation, IHS provides a means of estimating a percentage interpretation (Pence, 2006). Table 3 provides information on the distribution of firms by industry (NAICS 2-digit classifications), and

Table 4 provides information on the distribution of firms by country.

Table 3 - Empirical Chapter 1: Distribution of Multinational and National Enterprises by Industry

NAICS 2 Digits Core Codes	NAICS Industry Classification	NEs	MNEs	Total	Percentage	Cumulative
11	<i>Agriculture, Forestry, Fishing and Hunting</i>	281	122	403	1.35%	1.35
21	<i>Mining, Quarrying, and Oil and Gas Extraction</i>	583	975	1558	5.22%	6.57
22	<i>Utilities</i>	248	186	434	1.45%	8.03
23	<i>Construction</i>	872	405	1277	4.28%	12.31
31	<i>Manufacturing</i>	731	774	1505	5.04%	17.35
32	<i>Manufacturing</i>	1091	1795	2886	9.67%	27.02
33	<i>Manufacturing</i>	1594	3785	5379	18.03%	45.05
42	<i>Wholesale Trade</i>	1255	851	2106	7.06%	52.11
44	<i>Retail Trade</i>	386	189	575	1.93%	54.04
45	<i>Retail Trade</i>	174	123	297	1.00%	55.03
48	<i>Transportation and Warehousing</i>	454	440	894	3.00%	58.03
49	<i>Transportation and Warehousing</i>	30	44	74	0.25%	58.28
51	<i>Information</i>	444	587	1031	3.46%	61.73
52	<i>Finance and Insurance</i>	613	463	1076	3.61%	65.34
53	<i>Real Estate and Rental and Leasing</i>	1382	540	1922	6.44%	71.78
54	<i>Professional, Scientific, and Technical Services</i>	1003	1092	2095	7.02%	78.80
55	<i>Management of Companies and Enterprises</i>	2006	973	2979	9.98%	88.79
56	<i>Administrative and Support and Waste Management and Remediation Services</i>	542	318	860	2.88%	91.67
61	<i>Educational Services</i>	329	55	384	1.29%	92.96
62	<i>Health Care and Social Assistance</i>	578	94	672	2.25%	95.21
71	<i>Arts, Entertainment, and Recreation</i>	364	72	436	1.46%	96.67
72	<i>Accommodation and Food Services</i>	306	159	465	1.56%	98.23
81	<i>Other Services (except Public Administration)</i>	415	66	481	1.61%	99.84
92	<i>Public Administration</i>	34	13	47	0.16%	100.00
Total		15,715	14,121	29,836	100%	

Table 4 - Empirical Chapter 1: Distribution of Multinational and National Enterprises by Country

Multinational Enterprises

<i>Country</i>	<i>Freq.</i>	<i>Percent</i>	<i>Cum.</i>
<i>Australia</i>	642	4.55	4.55
<i>Austria</i>	59	0.42	4.96
<i>Belgium</i>	175	1.24	6.2
<i>Brazil</i>	48	0.34	6.54
<i>Canada</i>	772	5.47	12.01
<i>Chile</i>	39	0.28	12.29
<i>China</i>	1,002	7.1	19.38
<i>Croatia</i>	11	0.08	19.46
<i>Cyprus</i>	21	0.15	19.61
<i>Denmark</i>	54	0.38	19.99
<i>Egypt</i>	24	0.17	20.16
<i>Finland</i>	187	1.32	21.49
<i>France</i>	285	2.02	23.5
<i>Germany</i>	593	4.2	27.7
<i>Greece</i>	70	0.5	28.2
<i>Hong Kong</i>	90	0.64	28.84
<i>Hungary</i>	13	0.09	28.93
<i>Iceland</i>	24	0.17	29.1
<i>India</i>	619	4.38	33.48
<i>Indonesia</i>	58	0.41	33.89
<i>Ireland</i>	74	0.52	34.42
<i>Israel</i>	72	0.51	34.93
<i>Italy</i>	628	4.45	39.37
<i>Japan</i>	1,699	12.03	51.41
<i>Jordan</i>	13	0.09	51.5
<i>Kenya</i>	12	0.08	51.58
<i>Kuwait</i>	65	0.46	52.04
<i>Lithuania</i>	2	0.01	52.06
<i>Luxembourg</i>	14	0.1	52.16
<i>Malaysia</i>	471	3.34	55.49
<i>Mauritius</i>	16	0.11	55.61
<i>Mexico</i>	29	0.21	55.81
<i>Netherlands</i>	228	1.61	57.43
<i>New Zealand</i>	51	0.36	57.79
<i>Norway</i>	193	1.37	59.15
<i>Oman</i>	13	0.09	59.25
<i>Pakistan</i>	19	0.13	59.38
<i>Philippines</i>	37	0.26	59.64
<i>Poland</i>	77	0.55	60.19
<i>Portugal</i>	41	0.29	60.48
<i>Russia</i>	22	0.16	60.63
<i>Saudi Arabia</i>	35	0.25	60.88
<i>Singapore</i>	266	1.88	62.76
<i>South Africa</i>	117	0.83	63.59
<i>South Korea</i>	357	2.53	66.12
<i>Spain</i>	288	2.04	68.16
<i>Sri Lanka</i>	15	0.11	68.27
<i>Sweden</i>	461	3.26	71.53
<i>Switzerland</i>	112	0.79	72.32
<i>Taiwan</i>	1,041	7.37	79.7
<i>Thailand</i>	301	2.13	81.83
<i>Turkey</i>	16	0.11	81.94
<i>United Arab Emirates</i>	26	0.18	82.13
<i>United Kingdom</i>	917	6.49	88.62
<i>United States</i>	1,553	11	99.62
<i>Vietnam</i>	41	0.29	99.91
<i>Zimbabwe</i>	13	0.09	100
Total	14,121	100	

National Enterprises

<i>Country</i>	<i>Freq.</i>	<i>Percent</i>	<i>Cum.</i>
<i>Australia</i>	353	2.25	2.25
<i>Austria</i>	31	0.2	2.44
<i>Bangladesh</i>	11	0.07	2.51
<i>Belgium</i>	52	0.33	2.84
<i>Brazil</i>	61	0.39	3.23
<i>Canada</i>	322	2.05	5.28
<i>Chile</i>	22	0.14	5.42
<i>China</i>	1,389	8.84	14.26
<i>Croatia</i>	13	0.08	14.34
<i>Cyprus</i>	2	0.01	14.36
<i>Egypt</i>	31	0.2	14.55
<i>Finland</i>	213	1.36	15.91
<i>France</i>	290	1.85	17.75
<i>Germany</i>	498	3.17	20.92
<i>Greece</i>	31	0.2	21.12
<i>Hungary</i>	21	0.13	21.25
<i>Iceland</i>	19	0.12	21.37
<i>India</i>	556	3.54	24.91
<i>Indonesia</i>	101	0.64	25.56
<i>Ireland</i>	71	0.45	26.01
<i>Israel</i>	22	0.14	26.15
<i>Italy</i>	348	2.21	28.36
<i>Japan</i>	509	3.24	31.6
<i>Jordan</i>	60	0.38	31.98
<i>Kuwait</i>	17	0.11	32.09
<i>Latvia</i>	3	0.02	32.11
<i>Malaysia</i>	2,272	14.46	46.57
<i>Mauritius</i>	12	0.08	46.64
<i>Mexico</i>	14	0.09	46.73
<i>Netherlands</i>	344	2.19	48.92
<i>New Zealand</i>	44	0.28	49.2
<i>Nigeria</i>	15	0.1	49.3
<i>Norway</i>	673	4.28	53.58
<i>Oman</i>	18	0.11	53.69
<i>Pakistan</i>	43	0.27	53.97
<i>Philippines</i>	33	0.21	54.18
<i>Poland</i>	106	0.67	54.85
<i>Portugal</i>	39	0.25	55.1
<i>Russia</i>	39	0.25	55.35
<i>Saudi Arabia</i>	37	0.24	55.58
<i>Singapore</i>	50	0.32	55.9
<i>South Africa</i>	29	0.18	56.09
<i>South Korea</i>	296	1.88	57.97
<i>Spain</i>	291	1.85	59.82
<i>Sri Lanka</i>	32	0.2	60.03
<i>Sweden</i>	996	6.34	66.36
<i>Switzerland</i>	31	0.2	66.56
<i>Taiwan</i>	190	1.21	67.77
<i>Thailand</i>	561	3.57	71.34
<i>Turkey</i>	21	0.13	71.47
<i>United Kingdom</i>	3,281	20.88	92.35
<i>United States</i>	814	5.18	97.53
<i>Vietnam</i>	377	2.4	99.93
<i>Zimbabwe</i>	11	0.07	100
Total	15,715	100	

4.2 Measurements

4.2.1 Dependent Variable

Firm performance reflects the firm's ability to utilize their resources to succeed in dynamic environments (Eisenhardt and Martin, 2000), and performance is directly influenced by the firm's ability to adapt to the institutional context in which firms exploit their resources and capabilities (Uhlenbruck, 2004, Peng, 2004b). Thus, in line with previous studies we use return on assets (ROA), as it indicates the efficiency in which firms utilize their assets $ROA = \frac{\text{profit before tax}}{\text{Total asset}}$. Alternative measure for performance included return on equity (ROE) and profitability were used in robustness tests.

3.2.2 Independent Variables

Following previous studies (Chang et al., 2013b, Chang et al., 2013a, Kafouros and Aliyev, 2016b, Marrocu et al., 2011, Arrighetti et al., 2014), we compute the measure of **intangible assets** by using the book value of intangible assets reported in the balance sheet. Following (Wang et al., 2012a, Kafouros and Aliyev, 2016b, Arrighetti et al., 2014), we normalized intangible assets by measuring it as intangible assets as a ratio of net income ($\text{Intangible assets} = \frac{\text{Intangible assets}}{\text{Net income}}$). In line with prior studies (Wan and Hoskisson, 2003, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b, Shaner and Maznevski, 2011), we measure **institutional quality** by using the "Global Competitiveness Index" by the World Economic Forum (WEF). The WEF measure of institutional quality captures both formal and informal institutions and both public and private institutions (WEF, 2018, p. 39-47), and WEF report is issued every year and the indicators are updated annually.

4.2.3 Control Variables

The size of the firm influences economies of scope and scale (Qian et al., 2017, Lu and Beamish, 2004), and we follow prior studies (Chan et al., 2008, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, Wang et al., 2012a, Wang et al., 2020) and control for ***firm size*** by using the logarithmic value of the number of employees. To account for ***firm experience***, which could affect the extent of the firm's exposure to the market economy, the experience accumulated over a period, performance rates of new and established firms would differ depending on firm experience, and to control for the firm's life cycle (i.e. the accumulation of intangible assets could decline over time) (Wang et al., 2020, Wang et al., 2012a, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a). We control for ***firm age*** by using the number of years since the establishment of the firm. Following prior studies (Wang et al., 2012a, Kafouros and Aliyev, 2016b, Bradley et al., 2011), we measure ***organizational slack*** that could influence firm performance and capture firm inefficiency (i.e., firm resources being underutilized to accumulate and exploit intangible assets) by using the firm's debt-to-equity ratio. Although organizational slack can be a sign of inefficiency due to firms underutilizing their resources, it could also result in firms pursuing new strategies and entering new markets (Wang et al., 2012a). Firm performance might be influenced by the market power of a firm (Kafouros and Aliyev, 2016b). Thus, we control for this by estimating firm ***market share*** as a firm-to-industry sales ratio for each year. We control for ***Capital Intensity***, as it measures the amount of capital efficiency of firms using their assets to generate revenue, and the lower the capital intensity ratio the more efficient the firm is (Balasubramanian and Lieberman, 2010). To capture the effect of competitive intensity of given country and industry, we calculate ***Industry competitiveness*** by using Herfindahl index for each country-industry-year combination (NAICS 2 digits industry level) (Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, George, 2005). In addition, we control for the ***macroeconomic environment*** (Vasylyeva et al., 2018, Antwi et al., 2013) of the host-country by using the macroeconomic stability from the GCI index, which captures the level of inflation and debt dynamics of the country (WEF, 2018). As consumers with higher disposable income could

spend more (Kafouros and Aliyev,), we control for economic development by measuring *GDP per capita* obtained from the IMF World Economic Outlook Report. Lastly, we capture time-specific idiosyncrasies in the data, by using a *year-specific dummy variable*.

Table 5 - Empirical Chapter1: Variance Inflation Factors (VIFS)

a. Multinational enterprises

Variable	VIF	1/VIF
<i>Size</i>	2.09	0.48
<i>Marketshare</i>	1.83	0.55
<i>Institutional quality</i>	1.69	0.59
<i>GDP per capita</i>	1.66	0.60
<i>Industry copetitiveness</i>	1.43	0.70
<i>Capital intensity</i>	1.35	0.74
<i>Organizational slack</i>	1.21	0.82
<i>Age</i>	1.09	0.92
<i>Macro-economy</i>	1.08	0.93
<i>Intangible assets</i>	1.06	0.94
Mean VIF	1.45	

b. National enterprises

Variable	VIF	1/VIF
<i>Institutional quality</i>	2.42	0.41
<i>GDP per capita</i>	2.33	0.43
<i>Size</i>	1.97	0.51
<i>Marketshare</i>	1.58	0.63
<i>Industry copetitiveness</i>	1.42	0.71
<i>Capital intensity</i>	1.41	0.71
<i>Organizational slack</i>	1.18	0.85
<i>Intangible assets</i>	1.05	0.96
<i>Macro-economy</i>	1.04	0.97
<i>Age</i>	1.04	0.97
Mean VIF	1.54	

Table 6 - Empirical chapter 1: Correlation Matrix^a

a. Multinational Enterprises

	<i>Variables</i>	<i>Mean</i>	<i>S.D</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
1	ROA	3.469926	14.31634	1										
2	Age	34.02285	29.88171	0.0842***	1									
3	Size (employees)	2084120	1.07E+07	0.0425***	0.128***	1								
4	Organizational slack	82.50917	113.3427	-0.0851***	0.0277***	0.0856***	1							
5	Market share	153760.7	2.71E+07	0.00148	-0.00435	-0.0011	-0.00354	1						
6	Capital intensity	4.885268	15.33876	0.0479***	0.0679***	0.205***	0.0680***	-0.00181	1					
7	Industry competitiveness	0.1938903	2.78E-01	0.0363***	0.0989***	0.0352***	0.0409***	-0.00358	0.453***	1				
8	Macro-economy	5.045056	0.9444186	-0.0046	-0.162***	-0.0597***	-0.0883***	-0.00432	0.0320***	0.0529***	1			
9	GDP per capita	35758.45	20103.59	-0.111***	0.0919***	0.0696***	0.0213***	-0.000359	-0.0304***	-0.00159	-0.0768***	1		
10	Intangible Assets	3.716125	198.4331	0.00107	-0.00502	0.0143***	0.00576	-0.000105	0.00909**	0.00236	0.00253	0.0043	1	
11	Institutional Quality	4.866386	0.6901747	-0.0541***	0.121***	0.0139***	-0.0923***	-0.0104**	-0.0567***	-0.0515***	0.0794***	0.641***	-0.00128	1

* p<0.05, **p<0.01, ***p<0.001
(Observations - 53,880)

b. National Enterprises

	<i>Variables</i>	<i>Mean</i>	<i>S.D</i>	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>	<i>5</i>	<i>6</i>	<i>7</i>	<i>8</i>	<i>9</i>	<i>10</i>	<i>11</i>
1	ROA	4.367049	12.64227	1										
2	Age	26.81418	23.05823	-0.00575	1									
3	Size (employees)	202340.8	997588.6	0.0190***	0.0561***	1								
4	Organizational slack	82.95375	128.2199	-0.101***	-0.0221***	0.0776***	1							
5	Market share	2003002	5.93E+08	-0.00125	-0.00201	-0.000686	0.00529	1						
6	Capital intensity	2.143389	10.01057	0.0183***	0.0525***	0.135***	0.0244***	-0.000724	1					
7	Industry competitiveness	0.141339	0.2394217	0.00379	0.0941***	0.0337***	0.0242***	0.000846	0.415***	1				
8	Macro-economy	5.128435	0.9162677	0.0426***	-0.149***	-0.0362***	-0.00617	-0.002	-0.0273***	0.0115***	1			
9	GDP per capita	32660.32	23066.03	-0.0339***	0.00412	0.0383***	0.104***	-0.00416	-0.0679***	-0.103***	0.0246***	1		
10	Intangible Assets	3.273967	277.6431	-0.00214	-0.00104	0.00261	0.0037	-0.000042	0.000583	0.00295	-0.000655	-0.00225	1	
11	Institutional Quality	4.906253	0.7115506	0.0236***	0.0156***	-0.0482***	-0.00990**	-0.0053	-0.121***	-0.222***	0.0347***	0.702***	-0.00653*	1

* p<0.05, **p<0.01, ***p<0.001
(Observations - 97,089)

4.3 Estimation Method

Table 6 shows the descriptive statistics and correlation matrix for multinational enterprises **(a)** and National enterprises **(b)**. The correlation between independent variables are within acceptable levels. In order to avoid multicollinearity issues, we mean-centred the components of the interaction terms (Aiken et al., 1991). In line with previous studies (Kang, 2018, Dezsö and Ross, 2012), to detect for potential multicollinearity, a multiple regression analysis was performed to evaluate variance inflation factors (VIFS). Table 5 indicate that VIFS values for all explanatory value are below the cut-off point of 10, thus multicollinearity is not a concern (Kutner et al., 2005, Neter et al., 1996, Bowerman et al., 2005). The lack of correlation between the moderator and both the independent and the dependent variables is a desirable condition for moderated effects, as it leads to easier interpretation (Baron and Kenny, 1986). To select between random effects (RE) and fixed effects (FE), we used the Hausman specification test (Hausman and Taylor, 1981, Hausman, 1978). The Hausman specification test determines whether to use RE or the alternative FE by determining whether the unique errors are correlated with the regressors, the null hypothesis is they are not. For the sample containing multinational enterprises, the Hausman test returned with a $\chi^2 = 1527.50$ and a *p-value* of 0.00, which is significant at $p \leq 0.05$. For the sample containing national enterprises, the Hausman test returned with $\chi^2 = 867.22$ and a *p-value* of 0.00, which is significant at $p \leq 0.05$. The Hausman test rejected the null hypothesis that the conditional mean of the disturbances given the regressors is zero (Baltagi et al., 2003). Therefore, the FE estimation is preferable in our case (Wooldridge, 2010). We also employ alternative estimation methods (i.e., Generalized Least Square and Multilevel Mixed models) to check robustness of our results in **Error! Reference source not found.** and Table 9 respectively.

4.4 Robustness Tests and Additional Analysis

Error! Reference source not found. and Table 9 indicates robustness tests and additional analysis. First, in line with prior studies we performed an identical regression analysis without the control variables to better understand the influence of control variables between our independent and dependent variables (Glaser et al., 2016, Becker et al., 2016). Models 7 and 8 results indicate that our main results in **Error! Reference source not found.** are unaffected by the control variables. Therefore, supporting the validity of our findings. Second, we use alternate performance measures (ROE and profitability) as our dependent variables, models 9 and 10 returned with similar results to those generated in our main findings. Third, we tested for sensitivity of our results to changes in the estimation method by using Generalized Least Squares (GLS) and Mixed methods analysis. Models 11 to 14 confirm our initial findings. Fourth, in models 15 and 16 we examined whether our measure of institutional quality was influenced by the weights given to the components of institutions by World Economic Forum (WEF) (WEF, 2018). In accordance with prior studies (Kafouros and Aliyev, 2016b, Kafouros et al., 2021) I used a principal component analysis on the disaggregate institutional quality components and estimated using the first principal component. The findings are consistent with our initial findings. In models 17 to 20 we use WEF's disaggregated institutional measure of private and public institutions, and the findings were consistent with our main results. Models 21 to 26 we use the Fraser Institute Economic Freedom Index's overall score as a proxy to institutional quality (Models 21 and 22), we performed a principal component analysis on the six components of the World Bank's World Governance Indicators and estimated a proxy for institutional quality using the first principal component (models 23 and 24), and the World Heritage Foundation's the Index of Economic Freedom overall score as a proxy for institutional quality (models 25 and 26). The results from models 21 to 26 corroborate with our main findings in Table 9.

Table 7 - Empirical Chapter 1: Regression Results

Method Model Firm Type	Multinational Enterprises								National Enterprises			
	OLS-FE				OLS-FE							
	M1		M2		M3		M4		M5		M6	
	MNE		MNE		MNE		NE		NE		NE	
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>												
Age	-0.36***	(0.05)	-0.34***	(0.05)	-0.34***	(0.05)	-0.28***	(0.05)	-0.28***	(0.05)	-0.28***	(0.05)
Size	0.49***	(0.03)	0.41***	(0.03)	0.42***	(0.03)	0.57***	(0.03)	0.53***	(0.03)	0.53***	(0.03)
Organizational slack	-0.37***	(0.01)	-0.36***	(0.01)	-0.36***	(0.01)	-0.26***	(0.01)	-0.26***	(0.01)	-0.26***	(0.01)
Capital intensity	-0.04	(0.04)	-0.10***	(0.04)	-0.10***	(0.04)	-0.07**	(0.03)	-0.10***	(0.03)	-0.10***	(0.03)
Marketsahre	0.17***	(0.06)	0.15**	(0.06)	0.14**	(0.06)	0.14**	(0.06)	0.13**	(0.06)	0.13**	(0.06)
Industry competitiveness	-0.10	(0.45)	-0.03	(0.42)	-0.00	(0.42)	0.57	(0.56)	0.71	(0.51)	0.71	(0.51)
Macro-economy	0.32**	(0.14)	0.46***	(0.13)	0.44***	(0.13)	0.53***	(0.14)	0.60***	(0.14)	0.60***	(0.14)
GDP per capita	-0.99***	(0.08)	-1.06***	(0.07)	-1.05***	(0.07)	-1.10***	(0.07)	-1.22***	(0.07)	-1.22***	(0.07)
<u>Independent variables</u>												
Intangible Assets (IA)			0.32***	(0.01)	-0.49***	(0.08)			0.31***	(0.01)	-0.14	(0.09)
Institutional Quality (IQ)			0.29	(0.21)	0.02	(0.22)			1.10***	(0.24)	1.04***	(0.24)
<u>Interaction effects</u>												
IA x IQ					0.36***	(0.03)					0.20***	(0.04)
Constant	8.31***	(0.81)	9.11***	(0.94)	9.65***	(0.94)	8.05***	(0.83)	7.14***	(0.96)	7.24***	(0.96)
Observations	90,182		90,182		90,182		97,089		97,089		97,089	
R-squared (within/between/overall)	0.07/0.25/0.13		0.16/0.27/0.17		0.16/0.28/0.18		0.08/0.12/0.7		0.12/0.14/0.08		0.012/0.14/0.08	
Number of firms	14,130		14,130		14,130		15, 733		15, 733		15, 733	
year dummies	Included		Included		Included		Included		Included		Included	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 8 - Empirical Chapter 1: Robustness Analysis

Method Model Firm Type	Without Control variables				Alternative Performance measure								Sensitivity Analysis							
	OLS-FE				OLS-FE				OLS-FE				GLS-RE	GLS-RE	Mixed	Mixed				
	M7	M8	M9	M10	M9	M10	M9	M10	M11	M12	M13	M14								
	MNE	NE	MNE	NE	MNE	NE	MNE	NE	MNE	NE	MNE	NE								
Dependent variable	ROA		ROA		ROE		ROE		Profitability		Profitability		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>																				
Age					-0.41***	(0.07)	-0.38***	(0.06)	-0.38***	(0.05)	-0.29***	(0.04)	0.08***	(0.02)	-0.03**	(0.01)	0.00	(0.01)	-0.07***	(0.01)
Size					0.49***	(0.04)	0.66***	(0.04)	0.50***	(0.03)	0.60***	(0.03)	0.36***	(0.01)	0.28***	(0.01)	0.41***	(0.01)	0.34***	(0.01)
Organizational slack					-0.40***	(0.01)	-0.27***	(0.01)	-0.25***	(0.01)	-0.18***	(0.01)	-0.32***	(0.01)	-0.21***	(0.01)	-0.33***	(0.01)	-0.22***	(0.00)
Capital intensity					-0.09**	(0.04)	-0.09**	(0.04)	-0.16***	(0.03)	-0.13***	(0.03)	-0.28***	(0.02)	-0.33***	(0.01)	-0.21***	(0.01)	-0.25***	(0.01)
Marketsahre					0.26***	(0.07)	0.23***	(0.08)	0.17***	(0.06)	0.20***	(0.06)	-0.13***	(0.02)	-0.04**	(0.02)	-0.19***	(0.02)	-0.08***	(0.02)
Industry competitiveness					-0.05	(0.53)	0.65	(0.66)	-0.07	(0.39)	0.43	(0.50)	0.30***	(0.06)	0.14**	(0.06)	0.27***	(0.06)	0.18***	(0.06)
Macro-economy					0.51***	(0.17)	0.71***	(0.18)	0.25**	(0.12)	0.14	(0.13)	0.24***	(0.06)	0.59***	(0.07)	0.42***	(0.11)	0.62***	(0.11)
GDP per capita					-1.24***	(0.09)	-1.55***	(0.09)	-0.95***	(0.07)	-1.22***	(0.07)	-0.41***	(0.02)	-0.43***	(0.02)	-0.90***	(0.05)	-0.86***	(0.05)
<u>Independent variables</u>																				
Intangible Assets (IA)	-0.49***	(0.08)	-0.13	(0.09)	-0.37***	(0.11)	-0.17	(0.13)	-0.62***	(0.07)	-0.37***	(0.08)	-0.55***	(0.07)	-0.23***	(0.09)	-0.55***	(0.05)	-0.23***	(0.07)
Institutional Quality (IQ)	-0.42*	(0.23)	0.33	(0.25)	-0.10	(0.28)	1.26***	(0.31)	-0.07	(0.20)	0.97***	(0.22)	0.37***	(0.10)	1.87***	(0.11)	0.10	(0.16)	1.17***	(0.19)
<u>Interaction effects</u>																				
IA x IQ	0.36***	(0.03)	0.20***	(0.04)	0.38***	(0.05)	0.29***	(0.06)	0.38***	(0.03)	0.26***	(0.04)	0.39***	(0.03)	0.24***	(0.04)	0.39***	(0.02)	0.24***	(0.03)
Constant	2.30***	(0.52)	0.67	(0.57)	11.48***	(1.21)	9.32***	(1.25)	8.37***	(0.87)	7.77***	(0.89)	3.08***	(0.31)	0.04	(0.57)	7.73***	(1.52)	5.22***	(1.14)
Observations	90,182		97,089		90,152		97,039		97,004		97,089		90,182		97,089		90,182		97,089	
R-squared (within/between/over)	0.09/0.16/0.10		0.06/0.05/0.04		0.17/0.27/0.18		0.13/0.12/0.08		0.15/0.34/0.21		0.13/0.17/0.10		0.15/0.48/0.32		0.12/0.32/0.20					
Number of firms	14,130		15, 733		14,129		15,729		14,122		15,722		14,130		15, 733		14,130		15, 733	
Number of countries																	57		54	
Wald χ^2																	22572.50		15344.32	
χ^2																	0.00		0.00	
year dummies	Included		Included		Included		Included		Included		Included		Included		Included		Included		Included	
Industry dummies													Included		Included		Included		Included	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 9 - Empirical Chapter 1: Robustness Analysis (Alternative Institutional Measures)

Method	GCI institutions (PCA)		GCI private Institutions		GCI public Institutions		Fraser Institute		World Governance Indicators		Heritage Foundation	
	OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE	
Model	M15	M16	M17	M18	M19	M20	M21	M22	M23	M24	M25	M26
Firm Type	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>												
Age	-0.37***	(0.06)	-0.27***	(0.05)	-0.34***	(0.05)	-0.27***	(0.05)	-0.34***	(0.05)	-0.28***	(0.05)
Size	0.48***	(0.03)	0.53***	(0.03)	0.42***	(0.03)	0.53***	(0.03)	0.42***	(0.03)	0.53***	(0.03)
Organizational slack	-0.37***	(0.01)	-0.26***	(0.01)	-0.36***	(0.01)	-0.26***	(0.01)	-0.36***	(0.01)	-0.26***	(0.01)
Capital intensity	-0.02	(0.04)	-0.09**	(0.04)	-0.09***	(0.04)	-0.10***	(0.03)	-0.10***	(0.04)	-0.10***	(0.03)
Market share	0.17**	(0.07)	0.18***	(0.07)	0.14**	(0.06)	0.14**	(0.06)	0.14**	(0.06)	0.14**	(0.06)
Industry competitiveness	-0.20	(0.46)	0.73	(0.48)	-0.02	(0.42)	0.87*	(0.50)	-0.01	(0.42)	0.82	(0.50)
Macro-economy	0.23	(0.15)	0.31**	(0.15)	0.39***	(0.13)	0.49***	(0.14)	0.47***	(0.13)	0.58***	(0.14)
GDP per capita	-1.11***	(0.08)	-1.21***	(0.08)	-1.04***	(0.07)	-1.18***	(0.07)	-1.04***	(0.07)	-1.21***	(0.07)
<u>Independent variables</u>												
Intangible Assets (IA)	0.33***	(0.01)	0.31***	(0.01)	0.60***	(0.08)	-0.12	(0.09)	0.32***	(0.01)	0.31***	(0.01)
Institutional Quality (IQ)	-0.10***	(0.04)	0.07*	(0.04)	1.47***	(0.25)	1.30***	(0.25)	-0.25	(0.19)	0.78***	(0.21)
<u>Interaction effects</u>												
IA x IQ	0.06***	(0.01)	0.02***	(0.01)	0.40***	(0.04)	0.19***	(0.04)	0.33***	(0.03)	0.19***	(0.04)
Constant	9.67***	(0.82)	10.08***	(0.84)	6.13***	(1.00)	6.41***	(0.99)	10.08***	(0.90)	7.80***	(0.92)
Observations	77,721		83,954		90,626		97,586		90,626		97,586	
R-squared (within/between/total)	0.16/0.25/0.16		0.12/0.12/0.08		0.16/0.30/0.19		0.12/0.14/0.09		0.16/0.28/0.28		0.12/0.13/0.08	
Number of firms	14,098		15,652		14,190		15,798		14,190		15,798	
year dummies	Included		Included		Included		Included		Included		Included	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

5. Results

reports the results of the regression models for multinational enterprises and the national enterprises. Models 1 to 6 reports group clustered Huber-White standard errors that are robust for heteroskedasticity and intra-group correlation of error terms (Wooldridge, 2010). Models 1 to 3 capture the regression results of multinational enterprises and models 4 to 6 capture the regression results of national enterprises. Model 1 and 3 includes only the direct effects of control variables on firm performance. In models 2 and 5, we introduce the direct effects of intangible assets and home-country institutional quality. In models 3 and 6, we introduce the interaction effects between intangible assets and home-country institutional quality, along with the independent variables and the control variables.

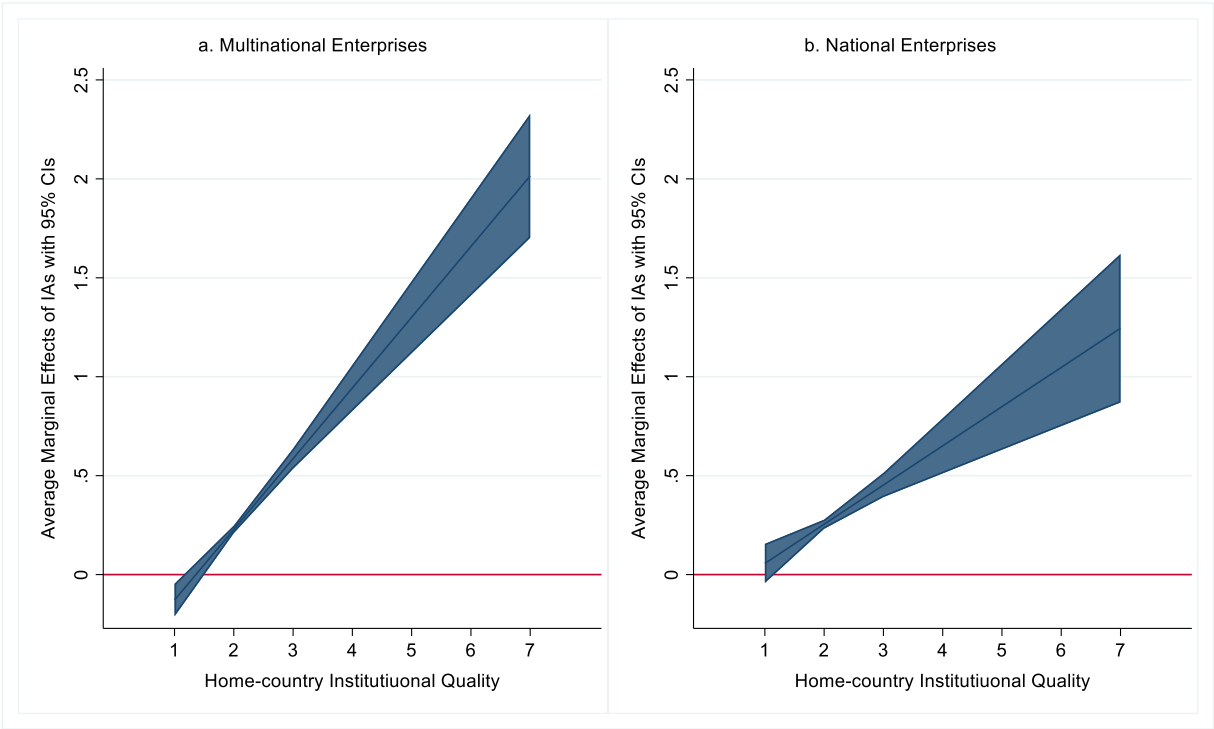
Hypothesis 1a predicts that *“The performance enhancing effects of intangible assets are stronger for Multinational Enterprises than they are for National Enterprises”*. Models 2 and 5 indicate that the direct effects of intangible assets enhancing firm performance is positive and statistically significant for both multinational enterprises and national enterprises ($\beta = 0.36, p \leq 0.01$; $\beta = 0.20, p \leq 0.01$, respectively). The results indicate that the direct of intangible assets influencing firm performance is stronger for multinational enterprises than they are for national enterprises. Thus, supporting hypothesis 1a. Furthermore, in models 2 and 5, the directs effects of home-country institutional quality influencing firm performance is positive, but statistically insignificant for multinational enterprises ($\beta = 0.29, p \leq n.sig.$, respectively) and the direct effect of home-country institutional quality influencing firm performance is positive and statistically significant for national enterprises ($\beta = 1.10, p \leq 0.01$, respectively). The findings in model 2 and 5 with regards to the influence of home-country institutional on firm performance suggests that national enterprises are likely to be more reliant on their home-country institutions than multinational enterprises. Thus, it could be argued that, although a certain

level of institutional quality is required for the functioning of a market, the reliance on institutions by firms are not homogenous and differ between different types of firms (i.e., multinational enterprises and national enterprises). Hypothesis 1b predicts that, *“the stronger the level of home-country institutional quality the greater the performance enhancing effects of intangible assets for multinational enterprises than they are for national enterprises”*. In model 3 and 6, we introduce the interaction effects between intangible assets and home-country institutional quality along with the independent and control variables. We find that the interaction effects are positive and statistically significant for both multinational enterprises and national enterprises ($\beta = 0.36, p \leq 0.01$; $\beta = 0.20, p \leq 0.01$, respectively), and the interaction effects are greater for multinational enterprises than they are for national enterprises. Thus, supporting hypothesis 1b.

Figure 2a (multinational enterprises) and Figure 2b (national enterprises) illustrates the marginal effects of intangible assets on firm performance at different levels of home-country institutional quality for multinational enterprises and national enterprises. The “Y -axes” indicate the marginal effects of intangible assets on firm performance, and the “X-axes” indicates the level of host-country institutional quality. Figures 2a and 2b includes 95% confidence intervals. Figure 2a and 2b confirm that the intangible assets for both multinational enterprises and national enterprises are positively moderated by the level of home-country institutional quality. Thus, indicating that at higher levels of home-country institutional quality, the performance enhancing effects of multinational enterprise intangible assets are greater than they are for national enterprises. Yet, the confidence interval imply that at lower levels of home-country institutional quality, the performance enhancing effects of multinational intangible assets loses its statistical significance. Whereas the performance enhancing effects of national enterprise intangible assets remain statistically significant at lower levels of home-country institutional quality. This could be deduced as, the performance enhancing effects national enterprise intangible

assets are more resilient in lower levels of institutional quality than multinational enterprise intangible assets. Thus, multinational enterprises require a certain level of home-country institutional quality to utilize their intangible assets to enhance firm performance. This could also be interpreted as, multinational enterprise are likely to exploit their internalization advantages to overcome inefficient home-country institution, as internalization is preferred by multinational enterprise in countries with inefficient institution, as lack in complementary market resources that would augment their value creation from intangible assets and an inefficient regulatory environment that would fail to protect their proprietary intangible assets.

Figure 2 - Empirical chapter 1: Marginal Effects of Multinational & National Enterprise Intangible Assets



6. Discussions and Conclusions

The main purpose of empirical chapter 1 is to offer an advanced understanding of the relationship between the performance enhancing effects of intangible assets and home-country institutions and identify performance variation between multinational enterprises and national enterprises at different levels of home-country institutional quality. We illustrate that the performance heterogeneity between multinational enterprises and national enterprises are likely the outcome of the interaction between firm-specific intangible assets and the level of home-country institutions in which they are utilized in. Our empirical analysis consists of 182,271 observations (90,182 observations for MNEs and 97,089 observations for NEs) from 66 countries for the period between 2011 to 2017.

First, we contribute international business literature that examines home-country effects on multinational enterprise and national enterprise performance . Our study advances this research stream by theorizing and empirically supporting that the, the vertical difference in home-country institutional quality is likely to influence a firm's ability to utilize their intangible assets to enhance performance. Thus, home-country institutions influence a firm's ability to utilize (i.e., accumulate, bundle and exploit) their intangible assets to create value, and the interaction between intangible assets and home-country institutional quality varies between different types of firms (i.e., multinational enterprises versus national enterprises) operating in a similar institutional setting.

Second, we contribute to the institution-based view . Our study extends the narrative that the effects of intuitions on performance are not homogenous (Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, Chari and Banalieva, 2015) and performance heterogeneity is an outcome of both intangible

assets and the institutional context in which they are utilized. Particularly, we find that the influence of home-country institutions on the performance enhancing effects of intangible assets differ between multinational enterprises and national enterprise. Our findings indicate that, the performance enhancing effects of intangible assets of both multinational and national enterprise performance are positively influenced in countries with stronger levels of home-country institutional quality, yet the positive effects are stronger for multinational enterprises than they are for national enterprises. Moreover, we find that national enterprise intangible assets are more resilient in enhancing firm performance in home-countries with lower levels of institutional quality than multinational enterprise intangible assets. Therefore, the findings align with the concept that, owning and utilizing value creating resources is not autonomous and does not guarantee competitive advantage (Mahoney and Pandian, 1992, Peteraf, 1993a, Barney and Arikan, 2001, Sirmon et al., 2007). But, managing the resource effectively would enable firms to exploit opportunities in the market while concurrently gaining and sustaining a competitive advantage (Hitt et al., 2002).

Third, we advance our understanding on the concept that institutions matter in international business (Jackson and Deeg, 2008, North, 1990, Kafouros et al., 2021). We contribute to research on institutions (Peng, 2002, Peng et al., 2009). We find that both multinational enterprises and national benefit from institutions that provide efficient and effective market mechanism (North, 1990, Williamson, 2000), access to resources and information (Shaner and Maznevski, 2011, Lu et al., 2009, Chen et al., 2015), and cost effective product and process innovations (Sakakibara and Porter, 2001, Yiu et al., 2007). we find, that, the performance enhancing effects of multinational intangible assets are stronger than they are for national enterprises in home-countries with higher levels of institutional quality, but national enterprise intangible assets were more resilient in contributing towards firm performance in lower levels of institutional quality than multinational firms. This could be attributed to the multinational

enterprise's ability to engage in internalization advantages in countries with lower levels of institutional quality, as the likelihood of exploiting internalization advantages are greater with the risks involved with inefficient institutions. Whereas national enterprises, which are limited to their home-country could benefit from political connections to overcome the absence of efficient market mechanism.

6.1 Limitations and Future Research

Firstly, our measurement of institutional quality is reliant on multiple surveys and datasets. Even though the validity of the datasets have been established in previous empirical studies, it is a given that surveys and data might contain sampling and measurement biases (Chan et al., 2008, Kafouros and Aliyev, 2016b). Furthermore, our institutional quality measure treats each location as a single country, by assuming that both formal and informal institutions are homogeneous within countries. Thus, the measure fails to capture subnational variations (Ma et al., 2012), since within-country institutional nuances exist and matter (Wang et al., 2012b). Therefore, future research should examine whether sub-national institutions influence difference influence the results. Furthermore, the measurement of institutional quality is focused on the vertical institutional difference (i.e., higher or lower levels of institutional quality). Whereas the horizontal difference (i.e., liberal versus coordinated) would allow us to distinguish further the performance variations between two firms operating in identical institutional environments.

Secondly, our study extends research on home-country institutional quality and suggest that future research examining the effects of institutions on firm resources should incorporate both formal and informal institutions. Thus, a rational follow-up to determine the impact on institutions on firm

performance would be to examine the interaction between specific intangible assets (i.e., innovation, managerial capabilities, knowledge transfers, absorptive capacity) and the quality of home-country institutions. For instance, patents can be matched against the MNEs and NEs to determine the effect of institutional quality on firm innovation and examine to what extent home-location institutions influence bundling with external market actors.

Thirdly, we acknowledge that future studies should consider other firm-specific resources and external environmental actors, and other idiosyncrasies that would influence firm performance. Although we theorize that home-country institutional quality is a significant moderator in the context of our study. We acknowledge that investigation of other external actors in the markets (i.e., R&D institutes, universities, sub-national institutions) were beyond the scope of these studies. Future studies can incorporate and control for different types of intangible assets (i.e., patents etc.) and potential transfers of knowledge and assets to and from their network of subsidiaries. Although, we demonstrate that intangible assets are influenced by different types of home-location institutions, we do not capture the effects of MNEs embeddedness in multiple institutional contexts simultaneously.

Empirical Chapter 2: Exposure to Host-country Institutional Quality,
Intangible Assets, & MNE Performance: A Comparative Study Between
Advance Economy Multinational Enterprises (AMNEs) and Emerging
Economy Multinational Enterprises (EMNEs)

1. Introduction

MNEs ability to leverage knowledge across international boundaries can be attributed as the very essence of its existence (Rugman and Verbeke, 2001, Kogut and Zander, 1992, Kogut and Zander, 1993b). MNE subsidiaries play an integral role in the parent firm's ability to access and leverage knowledge from multiple host-countries (Almeida, 1996, Almeida and Phene, 2004, Ghoshal and Bartlett, 1986, Andersson et al., 2002, Andersson et al., 2005). MNEs are organizations that engage in economic activity in their home country and foreign locations beyond their home-country (Hennart, 2001, Buckley and Casson, 2009b, Kogut and Zander, 1993b). Thus, MNEs are idiosyncratic in their ability to operate in multiple institutional contexts simultaneously (Doz et al., 2001, Ghoshal and Bartlett, 1990, Gupta and Govindarajan, 2000), which allows them to access new knowledge from host locations and recombine them with existing resources to enhance firm performance. Therefore, the parent-subsidary relationship plays a key role in shaping the MNEs performance, as firm resources and capabilities can be accumulated from foreign locations and recombined with the firm's existing resources to enhance firm performance.

The key distinguishing factor between advanced economy multinational enterprises (AMNEs) and emerging economy multinational enterprises (EMNEs) could be attributed to the level of institutional quality in their country of origin. AMNEs are from advanced economy institutional context with a higher-level institutional quality that provide firms with the necessary market resources, opportunities, the availability of consistent information, efficient and effective regulatory framework, and stable government decision making. AMNEs benefit from efficient home-country institutions that provide the essential background conditions, certainty and infrastructure support to operate efficiently. Furthermore, the consistent institutional setting in advanced economies (Chan et al., 2008, Hermelo

and Vassolo, 2010) provide AMNEs with market resources, market opportunities, and protection to engage in the accumulation, bundling, and exploitation of their firm-specific resources . On the contrary, EMNE parent firm's home countries suffer from institutional voids (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017), and inefficient institutions would not be able to offer favourable background conditions to engage in economic activity . However, EMNEs originating from countries with low levels of institutional quality use their foreign subsidiaries to expand into countries efficient institutions to enhance their competitiveness and performance .

Prior studies examining the impact of host-country institutions on MNE performance have predominantly used two theoretical lenses in resource-based view (RBV) and institutional theory (Oliver, 1997, Chacar et al., 2010, Kafouros and Aliyev, 2016b, Wang et al., 2020, Banalieva et al., 2018). RBV posits that firm-specific resources are the foundation of sustained competitive advantage (Barney, 1991, Peteraf, 1993b,). RBV theory's explanation on superior firm performance centres upon the MNEs ability to overcome cross-market imperfections by organizing and creating internal markets (Buckley and Casson, 1976, p. 34), specifically the MNEs ability to utilize and internalize their superior firm-specific intangible resources (Teece et al., 1997a, Teece, 1998, Barney, 1991). Intangible resources can be defined as, tacit, knowledge-based, and technological developments that are firm-specific, such as; intellectual property, patents, trademarks, copyrights, registered design, trade secrets, organizational know-how, networks, firm culture, and the reputation of the firm and product (Hall, 1992, Hall, 1993, Caves and Caves, 1996, Denekamp, 1995). Following Hall (1992, 1993), from here on we will be classifying intangible resources as "intangible assets" (Hall, 1993, p. 136). The RBV approach suggests that firms should formulate their competitive strategy based upon a combination of their firm-specific resources and external environment (Barney, 1991, Peteraf, 1993b, Grant, 1991). Institutional theory suggest that firm performance are contingent upon the institutional context in which firms operate

(North, 1990, Scott, 1995). Institutions set and enforce the “rules of the game” through economic, political and social constraints (North, 1990, Scott, , Scott, 1995, Scott, 2001, North, 1994). Thus, institutional environment in a given location exposes firms to both opportunities and challenges (Meyer et al., 2009a, Kostova et al., 2008, Dunning and Lundan, 2008), act as constrainters and enablers by establishing background conditions (Ingram and Silverman, 2002) and the necessary market mechanisms to operate in a given location (Cuervo-Cazurra, 2011, Khanna and Palepu, 1997). Therefore, both the formal and informal institutional contexts significantly influence firm behaviour in host-countries (Peng et al., 2008, Meyer and Peng, 2005, North, 1990, Henisz and Swaminathan, 2008). The two theoretical lenses are complementary and interdependent on one another. RBV posits that firm-specific resources are the foundation of sustained competitive advantage (Barney, 1991, Amit and Schoemaker, 1993, Peteraf, 1993b, Teece et al.,) and institutional theory posits that firm performance and competitive advantage is contingent upon the institutional context in which they are utilized (Oliver, 1997, North, 1990).

RBV posits that, firms operating in a given location are exposed to similar exogenous conditions, the manner in which firms accumulate, bundle, and exploit their firm-specific resources would contribute towards performance heterogeneity between firms operating in similar markets (Barney, 1991, Peteraf, 1993b). Since, firm-resources are context-specific, the performance enhancing effects of firm-specific resources can be influenced by the varying institutional context from one country to another (Brouthers et al., 2007, Oliver, 1997). MNEs are embedded in multiple institutional contexts simultaneously (Andersson et al., 2005, Figueiredo, 2011, Meyer et al., 2011). This could expose MNEs to diverse institutional frameworks. For instance, countries with efficient institutions would enhance value-creation and the accumulation of intangible resources (Kostova and Roth, 2002, Kostova et al., 2008) by offering competent market mechanisms (Wright et al., 2005, Berry et al., 2010, Geleilate et al., 2016,

Shaner and Maznevski, 2011). Whereas, countries with inefficient institutions would expose firms to institutional voids (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017) and uncertainty (Henisz, 2000, Henisz and Swaminathan, 2008, Henisz and Delios, 2000). In addition, dissimilarities between the MNEs home and host country institutional framework could inhibit the firm's ability to transfer their firm-specific resources to countries with dissimilar institutional framework (Kostova and Roth, 2002, Kostova et al., 2008). Therefore, drawing upon both RBV and institutional theoretical perspectives allow us to overcome the limitation in accounting for firm performance due to the theoretical limitations and differing assumptions of the two theoretical perspectives, when used on their own (Meyer et al., 2009a, Wang et al., 2012a).

The majority of the studies focusing on MNE intangible asset accumulation, bundling and exploitation has been examined from an AMNE perspective (Cantwell and Mudambi, 2005b, Cantwell and Mudambi, 2011). Although studies that have integrated EMNEs to examine home-country institutional effects of EMNEs , there is a shortage of research examining the role of host-country institutional effects on parent firm performance, and to what extent performance heterogeneity differ between AMNEs and EMNEs. By comparing both AMNEs and EMNEs would allow further our understanding on the influence of the host-country institutions on the performance enhancing effects of parent firm intangible assets. This research gap is significant in recent times due to EMNEs have been the shifters and movers of global business . In empirical chapter 2, we examine the influence of host-country institutions on the performance enhancing effects of intangible assets between AMNEs versus EMNEs. The key focus of this study is to understand the intrinsic differences between the performance enhancing effects of intangible assets between AMNEs and AMNEs' and to what extent intangible assets are influenced by the level of host-country institutional exposure. We use a combination of RBV theory and institutional theory to examine the effects of host-country institutions on MNE intangible assets. The empirical

analysis consists of 90,602 observations (71,624 AMNEs and 18,978 EMNEs) in 79 countries for the period of 2011-2017.

First, we contribute to international business literature that suggests performance variations between AMNEs and EMNEs are mainly due to the traditional ownership advantages possessed by AMNE, which are lacking in EMNEs (Ramamurti and Singh, 2009a, Ramamurti, 2012, Ramamurti and Williamson, 2019). We find that the performance enhancing effects of intangible assets are positive and significant for AMNEs and EMNEs. However, the performance enhancing effects were stronger for EMNEs than AMNEs. We argue that this is likely due to the catch-up strategies to compete with AMNEs that led to EMNEs actively seeking strategic assets in advanced economies with efficient institutions (Li et al., 2018, Deng et al., 2020, Sutherland et al., 2020, He et al., 2018) and use internalization to enhance parent-firm performance (Buckley et al., 2018, Buckley and Casson, 2019).

Second, we contribute to the institution-based view of the firm (Peng, 2002, Peng et al., 2009) by indicating that performance outcomes of MNEs are not identical for firms operating in similar host-country institutions, but vary between AMNEs and EMNEs. In addition, we contribute extant literature that examine the influence of host-country institutions (Meyer et al., 2011, Ferraris, 2014, Gaur et al., 2019b) and contribute to studies on institutions (Peng et al., 2009, Peng, 2002) by examining the influence of host-country institutions on the performance enhancing effects of intangible assets between AMNEs versus EMNEs. Our findings suggest that performance variations between AMNEs and EMNEs are likely to favour EMNEs with the increase in exposure to host-countries with higher levels of institutional quality. Our findings also extends prior research that examined the role of host-country institutions on firm performance, but does not account for the influence of host-country institutions on performance variations between AMNEs and EMNEs.

2. Theoretical Background

2.1 Resource-based view and Intangible Assets

Firm resources can be defined as organizational processes, tangible, and intangible resources that are controlled by the firm that allow the firm to implement their strategies to gain a sustained competitive advantage (Barney, 1991, p. 101, Barney, 2002, p. 105). Barney (1991) argues that resources that are *valuable* contribute towards firm efficiency and effectiveness, and resources that are *rare* which are unique to the firm produce competitive advantage. Whereas, when such resources are imitable, not substitutable, and non-transferrable, they contribute towards sustained (long-term) competitive advantage (Barney, 1991). RBV argues that firms are made up of idiosyncratic resources (Barney, 1991, Wernerfelt, 1984, Penrose, 1959) and resource heterogeneity between firms can contribute towards performance variations between firms (Barney, 1991, Peteraf, 1993b, Dierickx and Cool, 1989, Helfat, 1997, Thomke and Kuemmerle, 2002). Extant literature argues that intangible resources are more likely to yield superior performance and attain competitive advantage because due to their inimitability (i.e., causal ambiguity) (Hitt et al., 2001a, Hitt et al., 2006, Hall, 1992, Teece, 1998, Peteraf, 1993a). Intangible assets are tacit in nature (Hall, 1992, Hall, 1993, Kogut and Zander, 1992, Kogut and Zander, 1993b), thus the ability to accumulate, bundle, and exploit such assets allow firms to enhance their performance and differentiate between competing firms in similar markets (Wernerfelt, 1984, Barney, 1986, Barney, 1991, Mahoney and Pandian, 1992, Peteraf, 1993a, Dierickx and Cool, 1989). The complex nature of intangible assets makes them inimitable and immobile (Dierickx and Cool, 1989, Nelson, 1991, Teece, 1998, Barney, 1991), which enables such resources to yield greater economic rents (Peteraf, 1993b, Barney, 1991, Dierickx and Cool, 1989, Barney, 1986).

MNEs can utilize their globally distributed subsidiaries to build on their existing intangible resources by bundling with host-country actors with complementary resources (Buckley and Casson, 2009b, Buckley and Casson, 2009a). This could contribute towards extending the longevity of the competitive advantage derived from their existing resources. Furthermore, engaging in context-specific resource bundling and deployment can also enhance firm performance (Sirmon et al., 2008, Sirmon et al., 2011, Knott et al., 2003). Furthermore, resource accumulation, bundling, and exploitation are influenced by factor market imperfections such as: barriers to acquisition, imitation, and substitution (Barney, 1986, Barney, 1991, Amit and Schoemaker, 1993). These barriers prevent competitors from obtaining and duplicating a firm's key resources that contribute towards long-term differences in generating economic rents (Oliver, 1997). Extant studies argue that firm-specific resources are influenced by the context in which firms operate (Hoskisson et al., 2000, Meyer et al., 2011, Meyer and Peng, 2005). Particularly the institutional context that set the "*rules of the game*" (North, 1990). Thus, resource-based theory alone is insufficient to account for performance variation between firms (Peng et al., 2008, Peng et al., 2009), because it does not take into consideration the differences between the varying levels of institutions context the resources are utilized in, and why firms are successful in certain institutional context and not others (Peng et al., 2008, Peng et al., 2009).

2.2 Institutional Quality and Firm Performance

Extant studies argue that MNE performance across countries are influenced by the host-country institutional environment (Brouthers, 2013, Sun et al., 2015, Peng et al., 2008). North (1991) argues that, institutions are humanely devised constraints that structure political, economic, and social interactions in a given location (North, 1991). Institutions set the "*rules of the game*" (North, 1990), consist of both informal constraints (sanctions, taboos, customs, tradition, and codes of conduct), and

formal rules (constitutions, laws, regulations, property rights) (North, 1991, p. 97). Institutions act as constrainers and enablers by establishing background conditions (Ingram and Silverman, 2002), necessary infrastructure, and reduce information asymmetry and market uncertainty (Cuervo-Cazurra, 2011, Khanna and Palepu, 1997). Thus institutions play an integral role in shaping a country's market resources and thereby the resources possessed by firms operating in a particular environment (Jackson and Deeg, 2008). Institutional contexts vary from one country to another (Kostova et al., 2008, Kostova and Zaheer, 1999, Miller and Eden, 2006, Zaheer, 1995). Therefore, these variations between institutional context could also contribute towards the performance variation between firms (Khanna and Palepu, 1997, Khanna and Rivkin, 2001). Factors influencing the level of quality in institutions can include the availability of market resources, market opportunities, transaction costs, information asymmetry, and the enforcement of contractual and regulatory frameworks in each location (Wright et al., 2005, Berry et al., 2010). Furthermore, the following institutional characteristics could also impact firm operating in a particular institutional setting. For example, the distribution of infrastructure that enables the movement of inputs to manufacturers and final goods to the end customer; government institutions that champion transparency, enforce property rights, and reduce corruption; and financial institutions to enable capital movement also influence the quality of institutions in a given location (Wright et al., 2005, Berry et al., 2010, Geleilate et al., 2016).

Although every country offer a range of institutions to enable the functioning of markets, institutional contexts from one country to another differ in the manner in which they regulate economic activities (North, 1990, Jackson and Deeg, 2008). Extant literature suggests that emerging economy institutional frameworks differ from those in advance economies (Khanna and Palepu, 1997, Hoskisson et al., 2000, Meyer and Peng, 2005). Because, emerging economies with lower levels of institutional quality lack in legal protection for property rights, poor implementation of commercial laws, a non-transparent judicial

and litigation systems (Khanna and Palepu, 1997). In addition, countries with lower levels of institutional quality are prone to *institutional voids* (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017) and *institutional uncertainty* (Henisz, 2003, Henisz and Delios, 2000, Henisz, 2000). Institutional voids are a lack of pro-market in the institutions that lead to imperfect market mechanisms that reduce the efficiency of markets (Khanna and Palepu, 1997, Khanna and Palepu, 2010). Whereas, institutional uncertainty is caused by the unpredictability and inconsistency of the laws and regulations set by the state governing the business environment (Henisz and Delios, 2000, Henisz and Swaminathan, 2008). Thus, institutional voids and uncertainty are characteristics of countries with lower levels of institutional quality. On the contrary, countries with efficient institutions (high-level of institutional quality) empower firms by providing them with the necessary stability, certainty, and trust along with the efficient market mechanisms and background conditions to enhance firm performance (Shaner and Maznevski, 2011). Efficient institutions promote anti-trust laws to lower barriers for entry and foster competition, effective enforcement of laws and regulations to support competitive market activities, and increase in institutional transparency and reduce information asymmetry to lower information costs that would encourage product and process innovations (North, 1990, Williamson, 2000, Brouthers, 2013, Hoskisson et al., 2013, Chen et al., 2015, Henisz and Swaminathan, 2008). Broad access to resources and information coupled with efficient market supporting mechanisms would enhance firm performance (Sakakibara and Porter, 2001, Yiu et al., 2007).

2.3 The Multinational Enterprise

The MNEs ability to access and leverage knowledge from multiple host locations simultaneously is a major source of competitive advantage (Almeida, 1996, Almeida and Phene, 2004). MNEs expand into foreign locations by utilizing their superior intangible assets (i.e. proprietary technology-based

advantages) (Hymer, 1976, Buckley and Casson, 1976). Thus, MNEs early economic activity was driven by ownership-advantages developed by the parent firm's home location and leveraged across borders by transferring within its network of foreign subsidiaries (Buckley and Casson, 2009b, Kogut and Zander, 1993a, Vernon, 1966, Dunning, 1981). The early role of the subsidiary was to adapt resources and processes developed in the MNE's parent-firm, and adapted to the taste and needs of the host location (Cantwell and Mudambi, 2005b). In other words subsidiary were competence exploiting entities (Kuemmerle, 1999). However, subsidiary mandates (Cantwell and Mudambi, 2005b) and evolution (Birkinshaw and Hood, 1998c, Frost et al., 2002, Birkinshaw et al., 1998) has led to subsidiaries developing subsidiary-specific advantages by engaging resource bundling with the host-country external actors (Rugman and Verbeke, 2001, Birkinshaw et al., 1998). Thus, MNEs have evolved from a traditional parent-subsidiary knowledge transfers (Hymer, 1976, Vernon, 1966, Teece, 1977, Teece, 1981) to a lateral knowledge transfers within the MNE's network (Foss and Pedersen, 2002, Minbaeva and Pedersen, 2003, Mudambi and Navarra, 2015). Thus, MNEs can be viewed as a network of globally distributed network of subsidiaries that engage in knowledge transfers and recombination to accumulate, bundle, and exploit firm-specific resources in multiple host-countries (Ghoshal and Bartlett, 1990, Gupta and Govindarajan, 2000, Gupta and Govindarajan, 1994, Hedlund, 1994).

2.3.1 Emerging Economy Multinational Enterprises versus Advanced Economy Multinational Enterprises

EMNEs originate from countries that are unfavourable for producing traditional ownership advantages. EMNEs can be defined as, multinational enterprises originating from emerging economies that engage in outward foreign direct investments (OFDIs), where they exercise effective control and undertake value-added activities in one or more foreign country (Luo and Tung, 2007, p. 482). The key difference

between an advanced economy multinational enterprise (AMNE) and EMNE is that, EMNEs lack the traditional superior technological capabilities (Madhok and Keyhani, 2012, Lall et al., 1983, Wells, 1983) and firm-specific resources (Bartlett and Ghoshal, 2002) acquainted with AMNEs. For instance, EMNEs lack the proprietary ownership advantages such as knowledge-based resources and management capabilities (Mathews, 2006, Ramamurti and Singh, 2009b, Ramamurti and Singh, 2009a, Rugman, 2009). Rugman (2009) argued that, EMNEs possess no real competitive advantages that can be transferable beyond their home-country (i.e. natural resources and cheap labour), because EMNE's sources of competitive advantage hinged upon the home-country and their utilization beyond the home-country were deemed as untenable (Rugman, 2009). Whereas AMNEs succeed in expanding into foreign locations due to their superior intangible assets (Dunning, 1988a, Rugman and Verbeke, 1992, Buckley and Casson, 1976, Buckley, 2016, Dunning, 2001).

EMNEs lack in intangible assets (i.e. technological competences, brand awareness, and marketing expertise) (Awate et al., 2012, Awate et al., 2014, Kumar and Steenkamp, 2013) and have limited experience in operating in foreign locations (Luo and Tung, 2007). Thus, EMNEs are predominantly driven by their need to catch-up with AMNEs (Luo and Tung, 2018, Luo and Tung, 2007). Such ownership advantages have been traditionally viewed as the principal drivers of AMNEs' overseas expansion (Luo and Wang, 2012, Kim et al., 2015). However, EMNEs have been successfully expanding into foreign locations despite their lack of traditional ownership-advantages that are attributed to AMNEs (Cuervo-Cazurra and Genc, 2008b). Given that EMNEs' ownership advantages differ from traditional intangible advantages associated with AMNEs, these advantages can range from: networking skills, political know-how, organizational capabilities to function in challenging business environments, lower overhead costs, frugal innovation, and government relationships (Govindarajan and Ramamurti, 2011, Ramamurti and

Singh, 2009a, Cuervo-Cazurra and Genc, 2008b, Ramamurti and Singh, 2009b, Lall et al., 1983, Khanna and Palepu, 1997, Rugman and Li, 2007, Zeng and Williamson, 2007).

EMNEs have exponentially internationalized during the past two decades seeking better institutional environments than their country of origins (Buckley et al., 2007, Wang et al., 2012a, Wang et al., 2012c, Luo and Tung, 2007, Luo and Tung, 2018). EMNEs' experience and competence in operating in home countries with inefficient institutional settings act as an added advantage when expanding into foreign location with similar institutional contexts to their home-countries (Cuervo-Cazurra and Genc, 2008b). This itself can be regarded as key advantages, as AMNEs expanding into countries with inefficient institutional contexts with the absence of efficient market mechanisms, well-established infrastructure, and ineffective contracting and intellectual property rights regimes are at a disadvantage due to their lack of experience and know-how in operating in such volatile institutional conditions (Prahalad and Lieberthal, 1998). Particularly, EMNEs have increasingly internationalized to advanced economies to access intangible resources and enhance their competitiveness internationally (Luo and Tung, 2007, Ramamurti, 2012, Mathews, 2006, Elia and Santangelo, 2017). Furthermore, EMNEs also develop knowledge-based advantages by linking with market leading firms in advanced economies by leveraging the relationship to access advanced intangible resources (Mathews, 2006), which has allowed EMNEs to accumulate ownership advantages that are not available in their home-countries. Luo and Tung (2007) termed this as "springboard behaviour", where EMNEs bundle their existing resources to engage in international expansion to acquire critical assets in order to compete against global competitors (Luo and Tung, 2007). For instance, Embraer of Brazil in aircraft, Petrobras of Brazil in deep water drilling, Huawei of China in 5G mobile networking technologies, BYD of China in electric batteries, and Dr. Reddy's from India in pharmaceuticals (Ramamurti and Singh, 2009a, Ramamurti and Williamson, 2019).

However, AMNEs and EMNEs differ in their strategies of how they utilize their globally distributed subsidiaries in relation to accumulating, bundling, exploiting their intangible assets. For example, EMNE parent firm's knowledge deficit in comparison to its subsidiaries in advanced economies allow the subsidiaries to initiate the knowledge transfers, known as "*knowledge accessing*". Whereas, AMNEs adapt a "knowledge sourcing" process with their subsidiaries, as AMNE headquarters with their superior knowledge resources initiates the knowledge transfer between the parent and the subsidiary (Awate et al., 2014). As mentioned before, it is worth noting that with subsidiary evolution and changes to subsidiary mandates could result in subsidiaries developing their own advantages that could result in increase their bargaining power withing the MNEs network. However, AMNEs and EMNEs in their subsidiary mandates (Cantwell and Mudambi, 2005a). For instance, AMNEs utilize their subsidiaries for both intangible assets' accumulation and exploitation (Cantwell and Mudambi, 2005b), which contribute towards intangible assets accumulation, bundling, and exploitation (Meyer et al., 2011, Rugman and Verbeke, 2001). In contrast, EMNEs normally lack in intangible assets at their parent firm, thus use their subsidiaries to predominantly to access intangible assets in host-countries with efficient institutions. Thus, allowing EMNEs to accumulate and acquire intangible assets despite operating in a suboptimal institutional setting in their home-countries (Luo and Tung, 2018, Gao, 2019, Makino et al., 2002, Mathews, 2006). EMNEs' ability to acquire strategic resources from advanced economies plays an integral role in overcoming the ownership disadvantages of being a late entry to the market (Cuervo-Cazurra and Genc, 2008b, Cui et al., 2017, Cui et al., 2014). For example, EMNEs leapfrogged AMNEs to be at the frontier of technology by integrating and adapting technologies acquired from their subsidiaries located in advanced economies (Awate et al., 2015, Madhok and Keyhani, 2012, Cui et al., 2014, Cui et al., 2017, Wu et al., 2019b, Gao, 2019, Cuervo-Cazurra et al., 2018a, Bandeira-de-Mello et al., 2016).

3. Hypotheses Development

3.1 Intangible Assets and Multinational Enterprise Performance

Changes in the dynamics of international business has resulted in both AMNEs and EMNEs re-aligning their strategies to respond to the shifts in the global economy by expanding across borders to explore and exploit firm resources (Ramamurti, 2012). Therefore, subsidiaries are at the forefront of enhancing the competitive position of MNEs in their pursuit of performance and competitive advantage (Ambos et al., 2006, Rabbiosi and Santangelo, 2013, Nair et al., 2018, Driffield et al., 2016, Cantwell and Mudambi, 2005a, Birkinshaw and Hood, 1998c, Birkinshaw et al., 1998). As such, geographically distributed network of subsidiaries enable MNEs to accumulate, bundle, and exploit firm resources across international borders (Galunic and Rodan, 1998, Savino et al., 2017, Rugman and Verbeke, 2001, Rabbiosi and Santangelo, 2013, Driffield et al., 2016) and the ability to internalize markets within the MNE network remains a critical source of competitive advantage for the MEN parent firm.

Key differentiating factors between AMNEs and EMNEs are that: first, EMNE's possess inferior intangible assets in comparison to AMNEs (Madhok and Keyhani, 2012, Lall et al., 1983, Wells, 1983, Mathews, 2006, Ramamurti and Singh, 2009a, Ramamurti and Singh, 2009b, Rugman, 2009, Awate et al., 2012, Awate et al., 2014). Second, EMNEs expand to foreign locations with efficient institutions to accumulate and acquire intangible assets (Mathews, 2006, Luo and Tung, 2007, Luo and Tung, 2018, Casson and Wadeson, 2018, Buckley, 2018) and overcome institutional voids (Khanna and Palepu, 1997, Khanna and Palepu, 2010, Luo et al., 2010) in their home-country. Thus, EMNEs adopt a knowledge *accessing* strategy (Awate et al., 2015, Mudambi and Navarra, 2015, Cui et al., 2017, Cui et al., 2014). Whereas AMNEs adopt a knowledge *sourcing* strategy through their globally distributed network of subsidiaries,

which contribute towards intangible assets accumulation, bundling and exploitation (Cantwell and Mudambi, 2005b, Awate et al., 2015, Berry and Sakakibara, 2008). However, EMNEs' aggressive expansion into foreign locations (Buckley et al., 2007, Wang et al., 2012a, Wang et al., 2012c) seeking efficient institutions with (Luo et al., 2010, Gao, 2019, Wu et al., 2016, Luo and Tung, 2018, Luo, 2003) intangible assets (Luo and Tung, 2007, Ramamurti, 2012, Mathews, 2006, Elia and Santangelo, 2017) has enabled EMNEs to overcome the suboptimal home-country institutions (Luo and Tung, 2018, Gao, 2019, Makino et al., 2002, Mathews, 2006), and successfully compete with AMNEs (Cuervo-Cazurra and Genc, 2008b, Cui et al., 2017, Cui et al., 2014) by accumulating and bundling intangible assets from host-countries with efficient institutions (Awate et al., 2015, Madhok and Keyhani, 2012, Cui et al., 2014, Cui et al., 2017, Wu et al., 2019b, Gao, 2019, Cuervo-Cazurra et al., 2018a, Bandeira-de-Mello et al., 2016). Building on these arguments, we hypothesize that, the intangible assets positively influence multinational enterprise performance, and the performance enhancing effects of intangible assets are stronger for EMNEs than they are for AMNEs.

Hypothesis 2a. The performance enhancing effects of intangible assets are stronger for EMNEs than they are for AMNEs

3.2 The Dynamic Relationship Between Intangible Assets and Host-country Institutional Quality Influencing Firm Performance

RBV literature posits that, a firm's ability to accumulate, bundle, and exploit their intangible assets would generate superior economic rents (, Barney, 1991, Dierickx and Cool, 1989,). We synthesize that both intangible assets and the level of institutional quality in which firms operate are complementary

and integral in enhancing MNE performance a. Teece (1991) stated that “*intangible assets are the very essence of competitive advantage that can be sustained over time*” (Itami and Roehl, 1991, p. 1). Intangible assets create value (Kramer et al., 2011) and contribute towards higher performance (Barney, 1991). Whereas, firm performance is determined the firm’s intangible assets (Barney, 1991, and , Peteraf, 1993b) and the institutional context these intangible assets are utilized (i.e., accumulate, bundle, and exploit) (North, 1990, Scott, 1995, Scott, 2001). Institutional heterogeneity between countries emphasizes the importance of understanding how different levels of institutional quality might influence the performance enhancing effects of intangible assets. Because, the complex nature of intangible assets (Caves and Murphy, 1976, Hall, 1992, Hall, 1993, Teece, 1998) makes them a critical component in driving firm performance (Barney, 1991, Amit and Schoemaker, 1993, Peteraf, 1993b, Teece et al.,).

However, the effectiveness of intangible assets in augmenting parent-firm performance, reflects how well MNEs manage their intangible assets and the external environment of their home and host countries (Achcaoucaou et al., 2014, Meyer et al., 2011, Figueiredo, 2011, Andersson et al., 2002, Andersson et al., 2007). Especially, institutions play an integral role in influencing MNEs ability to exploit intangible assets in a given location and plays a significant role in determining the effectiveness of firm resources in generating economic rents (Priem and Butler, 2001a, Oliver, , Peng, 2002, Zhao et al., 2020, Barney et al., 2011, Barney and Arikan, 2001). Therefore, higher levels of institutional quality provide firms with efficient market mechanisms that include efficient regulatory framework, enforcement of property rights, access to resources and information to efficiently exploit their intangible assets (Wright et al., 2005, Berry et al., 2010, Geleilate et al., 2016, Shaner and Maznevski, 2011).

Institutional voids (i.e. imperfect market-mechanisms that consist of a lack of infrastructure, resources, efficient regulatory framework, and market opportunities) (Khanna and Palepu, 1997, Khanna and Palepu, 2010) and uncertainty (i.e. unpredictability and inconstancy caused by the government in the business environment) (Henisz and Delios, 2000, Henisz and Swaminathan, 2008) could hinder the MNEs' ability to accumulate, bundle, and exploit their intangible assets efficiently and effectively (Sirmon et al., 2011, Sirmon and Hitt, 2003, Sirmon et al., 2007) . In other words, we propose that, the firm's ability to utilize their intangible assets in relation to the institutional context in which they are embedded in would enhance our understanding on why different levels of institutional quality would have varying effects on the performance enhancing effects on intangible assets. Therefore, we examine the MNE exposure to host-country institutions and to what extent does the quality of host-country institutions influence the performance enhancing effects of intangible asset between AMNEs and EMNEs.

Resource bundling occurs when firms integrate external market resources with their internal resources to augment existing ownership advantages (Sirmon et al., 2008, Sirmon et al., 2007, Rugman and Verbeke, 2001, Henisz and Delios, 2001). Bundling is significantly influenced by the level of uncertainty in the external environment, as high levels of environmental uncertainty increases the need for firms to adapt and engage in bundling with complementary resources available in the market (Sirmon et al., 2007, Sirmon et al., 2011, Rothaermel and Hill, 2005). Complementary assets can include distributing networks and supporting infrastructure, that can be accessed through contracting. However, complementary resources are not always readily available in the market (Sirmon et al., 2007), because varying levels of institutional quality between countries (Kostova et al., 2008, Kostova and Zaheer, 1999, Miller and Eden, 2006, Zaheer, 1995) could contribute towards different opportunities and combinations (Wan and Hoskisson, 2003, Wan, 2005). Since, the level of institutional quality in each

location could impact the availability of market resources (Hermelo and Vassolo, 2010, Chan et al., 2008, Brouthers, 2013). Institutions play an integral role in a firm's ability bundle their intangible assets with the resources that are available in the market (Hennart, 2009, Rugman and Verbeke, 2001, Galunic and Rodan, 1998). Therefore, access to resources and information coupled with efficient institutions would empower firms to engage in bundling that would augment firm performance (Sakakibara and Porter, 2001, Yiu et al., 2007). Whereas, countries with lower levels of institutional quality are hampered by poor implementation of commercial law (Khanna and Palepu, 1997, Khanna and Palepu, 2010), inconsistencies in the regulation of the business environment (Henisz and Delios, 2000, Henisz and Swaminathan, 2008), information asymmetry, and increase in transaction costs (Wright et al., 2005, Berry et al., 2010), favourable background conditions (Scott, 1995). Thus, inefficient institutions could expose firms engaging in bundling to partner related risks (Madhok, 2002, Teece, 1986b, Meyer, 2001), increase in transaction costs due to the unpredictability of intermediaries, and increase in opportunistic behaviour due to a lack of contract enforcements (Peng, 2002, Peng et al., 2008, Cuervo-Cazurra and Genc, 2008b, Chan et al., 2008).

The exploitation of intangible assets are also dependent on political institutions, because increase in political instability would lead to an increase in uncertainty about market policies and regulations (Henisz, 2000, Henisz and Delios, 2000). A firm's ability to maximize their economic rent not only relies on their intangible assets, but also their ability to exert themselves in the enrichment of business-government relationships (Luo, 2001b). Thus, political institutions play an integral role in reducing uncertainty, by implementing efficient mechanisms for free-market systems (Arnold and Quelch, 1998) and reduce the risk of random decision and policy changes (Henisz, 2003). For instance, political instability could inhibit institutional mechanisms that protect property rights and contractual rights, government policies could be influenced and altered to benefit firms with political connections at the

expense of firms that lack political connections (Henisz, 2000, Knack and Keefer, 1995). Thus, the absence of market supporting institutions would lead to personal relationship influencing government policy that allow politicians and firms with strong government bonds to extract economic rents (Bunkanwanicha and Wiwattanakantang, 2009). MNEs recognize political connection as a mechanism to reduce uncertainty and enable them to gain private information concerning future policies and regulations (Hadani and Schuler, 2013). Thus, MNEs operating in inefficient institutional contexts may utilize their considerable bargaining power vis-à-vis the government (Pfeffer, 1972, Moon and Lado, 2000) which could lead to opportunistic behaviour (Meyer et al., 2009a, Peng and Heath, 1996). Whereas, efficient institutions would have efficient anti-trust laws that would regulate and prohibit discriminating opportunistic behaviour, tacit collusion, and anticompetitive conduct (Scherer and Ross, 1990).

The institutional environment plays an important role in protecting intangible assets. In other words, protection captures the interdependent relationship between intangible assets and the efficacy of the regulatory framework (i.e., enforcing contractual rights and intellectual property rights) to protect intangible assets (Teece, 2006, Teece, 1996, Khanna and Palepu, 1997, Kafouros et al., 2012, Kafouros and Aliyev, 2016b). Efficient enforcement of laws and regulations increases information asymmetry and institutional transparency that encourage product and process innovations (North, 1990, Williamson, 2000, Brouthers, 2013, Hoskisson et al., 2013, Chen et al., 2015, Henisz and Swaminathan, 2008). For instance, efficient institutions would regulate market activities through laws and regulations by using bureaucratic organizations to prevent contract breaches by legal and regulative sanctions (Greif, 2005). Furthermore, Intellectual property rights (IPR) is an effective way to protect intangible assets from imitation (Teece, 1996, Teece, 2006, Cohen and Levinthal, 2000). IPR protection allows firms to gain a temporary competitive advantage from their intangible assets (Reitzig, 2004). A stronger IPR regime

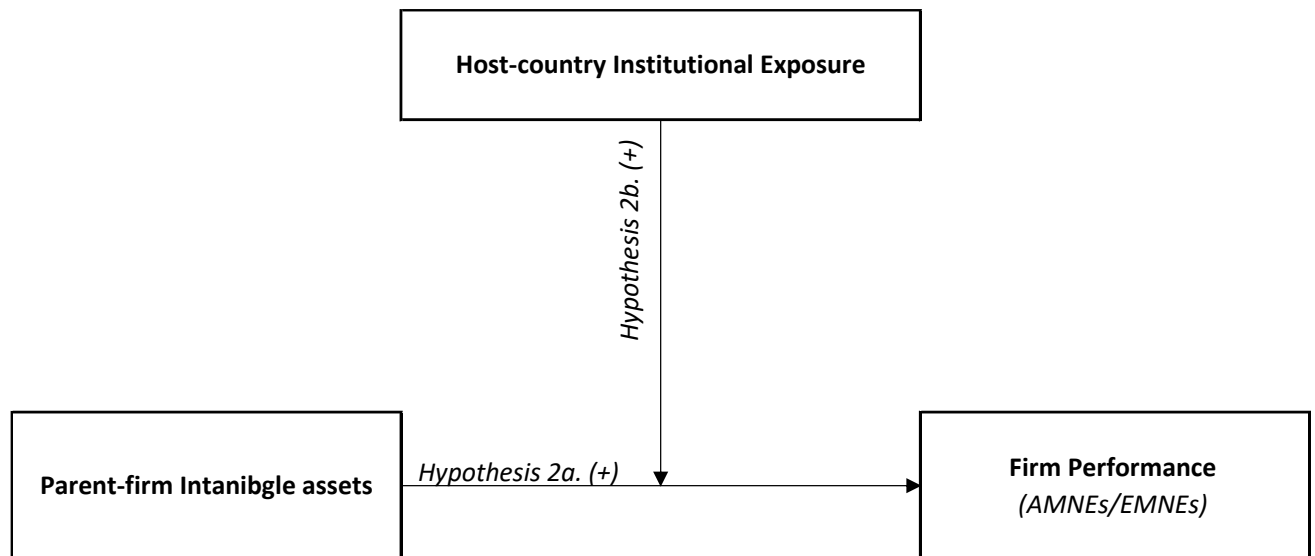
does not equate more security for the intangible assets, but a stronger IPR regime can make it costlier (i.e. allocation of more firm-resources) for the competing firms to engage in imitation (Glass and Saggi, 2002) by increasing the costs incurred would decrease the intensity of imitation (Helpman, 1992). For example, weak IPR regimes could lead to under-utilization of intangible assets and lower rent appropriation (Zhao, 2006). Moreover, lower levels of institutional quality leads to weak appropriability regimes with ineffective legal protection of intellectual property, and high levels of institutional quality with strong appropriability regimes would be effective in legally protecting intangible assets (Winter and Teece, 1998, Teece, 2006).

The intrinsic difference between AMNE and EMNE intangible assets is that AMNE intangible assets are predominantly accumulated in their parent firm and leveraged throughout their network of subsidiaries in host locations beyond their home-country (Buckley and Casson, 2009b, Kogut and Zander, 1993a, Vernon, 1966, Dunning, 1981). In comparison to AMNEs, EMNEs lack traditional intangible assets (Awate et al., 2012, Awate et al., 2014, Kumar and Steenkamp, 2013). However, EMNEs successfully internationalize (Cuervo-Cazurra and Genc, 2008b) with non-traditional competencies (Govindarajan and Ramamurti, 2011, Ramamurti and Singh, 2009a, Cuervo-Cazurra and Genc, 2008b, Ramamurti and Singh, 2009b, Lall et al., 1983, Khanna and Palepu, 1997, Rugman and Li, 2007, Zeng and Williamson, 2007). In addition, EMNEs overcome their intangible asset deficiencies at the parent firm by seeking intangible assets in foreign locations with efficient institutions. Thus, EMNEs internationalize in efficient markets due to a lack of efficient product-market in their home-country. Furthermore, EMNEs internationalize with the support of their home country institutions, when expanding to foreign countries to acquire and leverage intangible assets from advanced economies. Whereas, AMNEs operating in inefficient institutional environments with ineffective contracting and intellectual property rights regimes are at a disadvantage due to their lack of experience and know-how in operating in

volatile institutional conditions (Prahalad and Lieberthal, 1998). Furthermore, it is likely that AMNEs use internalize markets within the MNEs network in countries with inefficient market mechanisms. Based on the above arguments, it is likely that both AMNEs and EMNEs benefit from accumulating, bundling, and exploiting intangible assets in countries with higher levels of institutional quality, thus higher levels of institutional quality positively influence firm performance in both AMNEs and EMNEs. However, their subsidiary mandates might significantly differ to one another, as AMNEs are primarily driven in search of competence exploitation (Cantwell and Mudambi, 2011, Cantwell and Mudambi, 2005a). Whereas EMNEs are latecomers to international competition and driven by their need to catch to AMNEs (Luo and Tung, 2018, Luo and Tung, 2007). Thus, EMNEs benefit from expanding into foreign countries with efficient market mechanisms (Luo and Tung, 2007, Mathews, 2006, Gubbi et al., 2010) to access complementary market resources (Luo and Tung, 2007, Ramamurti, 2012, Mathews, 2006, Elia and Santangelo, 2017) by acquiring critical intangible assets that are not available in their home-country (Luo and Tung, 2007, Ramamurti, 2012, Mathews, 2006, Elia and Santangelo, 2017). Based on the above premise, we argue that exposure to higher levels of institutional quality would positively influence the performance enhancing effects of both AMNE and EMNE intangible assets. However, on average it is likely that the interaction effect between multinational enterprise intangible assets host-country institutional exposure is stronger for EMNEs than they are for AMNEs. Therefore, we hypothesize that, the greater the level host-country institutional quality, the stronger the performance enhancing effects of intangible assets for EMNEs than they are for AMNEs.

Hypothesis 2b. *the greater the level host-country institutional quality, the stronger the performance enhancing effects of intangible assets are for EMNEs than AMNEs.*

Figure 3 - Empirical Chapter 2: Conceptual Framework



4. Methodology

4.1 Data

The hypotheses were tested by using longitudinal firm-level data for AMNEs and EMNEs, and country-level data to measure institutional quality. Parent level data were obtained using ORBIS database (provided by Bureau van Dijk). ORBIS provides ownership and financial data of firms across the globe, thus allowing to engage in cross-country comparisons. The analysis is focused on the performance enhancing effects of MNE intangible assets and host country institutional exposure. MNE subsidiaries were selected by identifying subsidiaries with over 50.01% ownership held by global ultimate owners (parent-firms), as over 50.01% owned subsidiaries safeguard that the selected firms are MNE subsidiaries and not portfolio investments of the parent firm. We distinguished between AMNEs and

EMNEs by identifying the parent firm's home-country economy classification provided by International Monetary Fund's (IMF) in World Economic Outlook (WEO) database.

The World Economic Outlook (WEO) report published by The International Monetary Fund (IMF) divides the world into two major parts: advanced economies and emerging economies (IMF, 2017). We measure country-level institutional quality of MNE host-countries by using the institutions indicator provided by "Global Competitive Indices" (GCI) provided by The World Economic Forum (WEF). The final sample consists of 90,602 observations (71,624 AMNEs and 18,978 EMNEs) in 79 countries for the period of 2011-2017. We also accommodate for extreme values influencing our variables by using "inverse hyperbolic sine" (IHS) transformation instead of the logarithmic transformation to normalize our variables. The IHS approach is effective in handling negative values to the normality of the data, and down-weights extreme values (Nyberg et al., 2010, Burbidge et al., 1988, Carroll et al., 2003), and also provides a means of estimating a percentage interpretation (Pence, 2006). Table 10 provides information on the distribution of AMNEs and EMNEs by country. Table 11 provides information on multinational enterprises by their NAICS 2-digit industry classifications.

Table 10 - Empirical Chapter 2: Distributions of Multinational Enterprise by Industry

NAICS 2 Digits Core Codes	NAICS Industry Classification	AMNEs	EMNEs	Total	Percentage	Cumulative
11	<i>Agriculture, Forestry, Fishing and Hunting</i>	102	68	170	1.16%	1.2
21	<i>Mining, Quarrying, and Oil and Gas Extraction</i>	210	78	288	1.96%	3.1
22	<i>Utilities</i>	185	94	279	1.90%	5.0
23	<i>Construction</i>	500	82	582	3.96%	9.0
31	<i>Manufacturing</i>	495	278	773	5.26%	14.2
32	<i>Manufacturing</i>	950	679	1629	11.08%	25.3
33	<i>Manufacturing</i>	2059	1025	3084	20.99%	46.3
42	<i>Wholesale Trade</i>	965	171	1136	7.73%	54.0
44	<i>Retail Trade</i>	247	40	287	1.95%	56.0
45	<i>Retail Trade</i>	124	48	172	1.17%	57.2
48	<i>Transportation and Warehousing</i>	431	85	516	3.51%	60.7
49	<i>Transportation and Warehousing</i>	33	10	43	0.29%	61.0
51	<i>Information</i>	462	129	591	4.02%	65.0
52	<i>Finance and Insurance</i>	67	8	75	0.51%	65.5
53	<i>Real Estate and Rental and Leasing</i>	651	122	773	5.26%	70.8
54	<i>Professional, Scientific, and Technical Services</i>	980	200	1180	8.03%	78.8
55	<i>Management of Companies and Enterprises</i>	1,577	24	1601	10.89%	89.7
56	<i>Administrative and Support and Waste Management and Remediation</i>	457	45	502	3.42%	93.1
61	<i>Educational Services</i>	103	4	107	0.73%	93.8
62	<i>Health Care and Social Assistance</i>	266	14	280	1.91%	95.7
71	<i>Arts, Entertainment, and Recreation</i>	195	9	204	1.39%	97.1
72	<i>Accommodation and Food Services</i>	201	50	251	1.71%	98.8
81	<i>Other Services (except Public Administration)</i>	153	6	159	1.08%	99.9
92	<i>Public Administration</i>	8	6	14	0.10%	100.0
Total		11,421	3,275	14,696	100%	

Table 11 - Empirical Chapter 2: Distribution of Multinational Enterprises by Industry

a. AMNEs

<i>Country</i>	<i>Freq.</i>	<i>Percent</i>	<i>Cum.</i>
<i>Australia</i>	45	0.39	0.39
<i>Austria</i>	27	0.24	0.63
<i>Belgium</i>	135	1.18	1.81
<i>Canada</i>	60	0.53	2.34
<i>Cyprus</i>	11	0.1	2.43
<i>Czech Republic</i>	1	0.01	2.44
<i>Denmark</i>	45	0.39	2.84
<i>Estonia</i>	4	0.04	2.87
<i>Finland</i>	295	2.58	5.45
<i>France</i>	260	2.28	7.73
<i>Germany</i>	983	8.61	16.34
<i>Greece</i>	40	0.35	16.69
<i>Hong Kong</i>	53	0.46	17.15
<i>Iceland</i>	29	0.25	17.41
<i>Ireland</i>	95	0.83	18.24
<i>Israel</i>	55	0.48	18.72
<i>Italy</i>	788	6.9	25.62
<i>Japan</i>	2,030	17.77	43.39
<i>Latvia</i>	11	0.1	43.49
<i>Lithuania</i>	15	0.13	43.62
<i>Luxembourg</i>	12	0.11	43.73
<i>Malta</i>	5	0.04	43.77
<i>Netherlands</i>	445	3.9	47.67
<i>New Zealand</i>	13	0.11	47.78
<i>Norway</i>	57	0.5	48.28
<i>Portugal</i>	53	0.46	48.74
<i>Singapore</i>	49	0.43	49.17
<i>Slovakia</i>	2	0.02	49.19
<i>Slovenia</i>	2	0.02	49.21
<i>South Korea</i>	1	0.01	49.22
<i>Spain</i>	485	4.25	53.46
<i>Sweden</i>	1,072	9.39	62.85
<i>Switzerland</i>	108	0.95	63.79
<i>Taiwan</i>	110	0.96	64.76
<i>United Kingdom</i>	2,584	22.62	87.38
<i>United States</i>	1,441	12.62	100
Total	11,421	100	

b. EMNEs

<i>Country</i>	<i>Freq.</i>	<i>Percent</i>	<i>Cum.</i>
<i>Bahrain</i>	2	0.06	0.06
<i>Bangladesh</i>	1	0.03	0.09
<i>Botswana</i>	3	0.09	0.18
<i>Brazil</i>	17	0.52	0.7
<i>Bulgaria</i>	2	0.06	0.76
<i>Chile</i>	29	0.89	1.65
<i>China</i>	2,120	64.73	66.38
<i>Croatia</i>	18	0.55	66.93
<i>Egypt</i>	13	0.4	67.33
<i>Hungary</i>	22	0.67	68
<i>India</i>	410	12.52	80.52
<i>Indonesia</i>	44	1.34	81.86
<i>Jordan</i>	8	0.24	82.11
<i>Kazakhstan</i>	4	0.12	82.23
<i>Kenya</i>	4	0.12	82.35
<i>Kuwait</i>	2	0.06	82.41
<i>Malaysia</i>	92	2.81	85.22
<i>Mauritius</i>	5	0.15	85.37
<i>Mexico</i>	11	0.34	85.71
<i>Morocco</i>	1	0.03	85.74
<i>Nigeria</i>	6	0.18	85.92
<i>Oman</i>	2	0.06	85.98
<i>Pakistan</i>	29	0.89	86.87
<i>Panama</i>	3	0.09	86.96
<i>Peru</i>	4	0.12	87.08
<i>Philippines</i>	43	1.31	88.4
<i>Poland</i>	84	2.56	90.96
<i>Romania</i>	3	0.09	91.05
<i>Russia</i>	15	0.46	91.51
<i>Saudi Arabia</i>	10	0.31	91.82
<i>Senegal</i>	1	0.03	91.85
<i>Serbia</i>	2	0.06	91.91
<i>South Africa</i>	90	2.75	94.66
<i>Sri Lanka</i>	27	0.82	95.48
<i>Thailand</i>	1	0.03	95.51
<i>Turkey</i>	12	0.37	95.88
<i>Ukraine</i>	1	0.03	95.91
<i>United Arab Em.</i>	2	0.06	95.97
<i>Vietnam</i>	116	3.54	99.51
<i>Zambia</i>	1	0.03	99.54
<i>Zimbabwe</i>	15	0.46	100
Total	3,275	100	

4.2 Measurements

4.2.1 Dependent Variable

We used an extensively use measure of return on assets (ROA) to capture firm performance . Firms performance capture the firm's ability to use their resources in dynamic business environments (Eisenhardt and Martin, 2000), and adapt their resources under different institutions contexts (Uhlenbruck, 2004, Peng, 2004b). ROA was calculated as a percentage of: $ROA = \frac{\text{profit before tax}}{\text{Total asset}}$.

Furthermore, in the robustness checks, we use return on equity (ROE) measured as: $ROE = \frac{\text{Net income}}{\text{average shareholders' equity}}$, profitability (Wang et al., 2012b) measured as a ratio: $\text{profitability} = \frac{EBIT}{\text{Total assets}}$.

4.2.2 Independent Variables

Following prior studies (Chang et al., 2013b, Chang et al., 2013a, Kafouros and Aliyev, 2016b, Marrocu et al., 2011, Arrighetti et al., 2014), we compute the measure of **intangible assets** by using the book value of intangible assets reported in the balance sheet using data provided by ORBIS. In addition, we normalized intangible assets by measuring it as intangible assets as a ratio of net income ($\text{Intangible assets} = \frac{\text{Intangible assets}}{\text{Net income}}$), as this approach has been used in prior studies examining the role on intangible assets on firm performance (Kafouros and Aliyev, 2016b, Arrighetti et al., 2014, Arrighetti et al., 2015).

To capture *institutional quality* which evolves over time, we use an indicator that captures the quality of institutions in different countries over several years. Following previous studies, we use the “Global Competitive Index” (GCI) provided by the World Economic Forum (WEF) to measure the level of institutional quality (Wan and Hoskisson, 2003, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b). The GCI index captures both formal and informal institutions that influence a country’s economic prosperity for multiple years and uses a weighted combination of various aspects of institutions. Appendix 1. Illustrate the different characteristics that piece together the measure of GCI’s institutional quality indicates the various aspects of institutional quality that GCI relies upon to calculate the measures (see World Economic Forum: The Global Competitiveness Reports 2010 to 2017) (Schwab, 2017). However, in order to capture the level of MNE exposure to host-country institutions, we establish a spatial weighting procedure (Greenhill et al., 2009, Lim and Tsutsui, 2012, Rathert, 2016). Firstly, to determine the relevance of any host-country institutions on MNEs, we calculate weighting measure by dividing the number of subsidiaries in each country by the total number of subsidiaries of MNEs. Thereafter, this measure is used as a weighting variable for the institutional quality measure for each location by the GCI index, allowing us to calculate the level of institutional exposure for each MNE parent firm. $Exposure_c = \sum_1^j INST_j \times \frac{SUB_{cj}}{TOTALSUB_c}$, where c is the MNE, j is a host country, SUB is the count of subsidiaries of MNE c in country j , TOTALSUB is the total number of subsidiaries of a host company, and INST is the level of *institutional quality*.

4.2.3 Control Variables

Since, *firm size* can influence economies of scope and scale (Qian et al., 2017, Lu and Beamish, 2004), we follow previous studies (Darnall et al., 2010, Isik et al., 2017, Doğan, 2013) and control for firm size by using the logarithmic value of the number of employees. We control for parent firm and subsidiary

experience by measuring their **age** (number of years in since establishment), as newly establish firms might be at a disadvantage in comparison to established firms. We control for **organizational slack** by conforming to previous studies examining firm performance variations (Bradley et al., 2011, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b), by calculating the debt-to-equity ratio. Organizational slack can lead to underutilization of firm resources that could have performance implications for firms (Bradley et al., 2011). Since, subsidiary performance can be influenced by market power, we control for this by estimating **market share** firm-to-industry sales ratio in each year. We control for **tangible resources** by measuring the ratio of fixed assets per employee ($Tangible\ resources = fixed\ assets / employee$) (Wang et al., 2012a). Subsidiary performance can be influenced by market power (Kafouros and Aliyev, 2016b). We control for **Capital Intensity**, as it measures the amount of capital efficiency of firm using their assets to generate revenue, and the lower the capital intensity ratio the more efficient the firm is. Thus, capital intensity would contribute towards firm heterogeneity (Balasubramanian and Lieberman, 2010). To capture the effect of competitive intensity of given country and industry, we calculate **Industry competitiveness** by using Herfindahl index for each country-industry-year combination (NAICS 2 digits industry level) (Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a, George, 2005). As consumers with higher disposable income could spend more (Nielsen and Raswant, 2018, Kafouros and Aliyev, 2016a), we control for economic development by measuring **GDP per capita** obtained from the IMF World Economic Outlook. Lastly, to capture time and industry-specific idiosyncrasies in the data, we use a *year-specific dummy variable*. Following prior studies, we control for the **macroeconomic environment** (Vasylieva et al., 2018, Antwi et al., 2013) of the host-country by using the macroeconomic stability from the GCI index, which captures the level of inflation and debt dynamics of the country (WEF, 2018). Lastly, we capture time-specific idiosyncrasies in the data by using *year-specific dummy variables*.

Table 12 - Empirical Chapter 2: Variance Inflation Factors

a. Advanced-economy Multinational Enterprises

Variable	VIF	1/VIF
<i>Size</i>	2.19	0.46
<i>Tangible resources</i>	2.04	0.49
<i>Capital Intensity</i>	1.8	0.56
<i>Marketshare</i>	1.79	0.56
<i>Institutional exposure</i>	1.66	0.60
<i>Macro-economy</i>	1.43	0.70
<i>Industry comeptitiveness</i>	1.37	0.73
<i>GDP per capita</i>	1.33	0.75
<i>Organizational slack</i>	1.19	0.84
<i>Age</i>	1.1	0.91
<i>Intanigle Assets</i>	1.07	0.93
Mean VIF	1.54	

b. Emerging-economy Multinational Enterprises

Variable	VIF	1/VIF
<i>Macro-economy</i>	3.33	0.30
<i>Marketshare</i>	2.51	0.40
<i>Industry competitiveness</i>	2.25	0.44
<i>GDP per capita</i>	1.96	0.51
<i>Tangible resources</i>	1.63	0.61
<i>Size</i>	1.53	0.65
<i>Capital intensity</i>	1.47	0.68
<i>Age</i>	1.46	0.69
<i>Organizational slack</i>	1.29	0.78
<i>Institutional exposure</i>	1.23	0.82
<i>Intanibgle assets</i>	1.09	0.92
Mean VIF	1.79	

Table 13 - Empirical Chapter 2: Correlation Matrix^a

a. Advanced-economy Multinational Enterprises

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 ROA	5.240619	1.23E+02	1											
2 Age	38.29581	1132.515	0.0114**	1										
3 Size	5611.217	6.26E+08	0.0328***	0.121***	1									
4 Organizational slack	96.40205	1.67E+04	-0.134***	-0.0404***	0.0740***	1								
5 Market share	4.167994	2.17E+02	-0.002	0.0568***	0.216***	0.0330***	1							
6 Capital intensity	2235.003	2.40E+11	-0.00445	-0.00215	-0.000236	-0.000324	-0.00117	1						
7 Tangible resources	76210.03	4.26E+11	-0.0125***	-0.0269***	-0.0146***	0.0341***	0.00819*	0.000775	1					
8 Industry competitiveness	0.1824955	7.30E-02	-0.00798*	0.102***	0.0805***	0.0229***	0.473***	-0.00234	-0.0155***	1				
9 Macroeconomy	4.65E+00	7.20E-01	0.0573***	-0.0157***	-0.0212***	0.0325***	0.126***	0.00618	0.0132***	0.175***	1			
10 GDP capita	45302.47	1.07E+08	-0.00308	-0.0333***	0.0798***	0.00207	0.0273***	-0.000962	0.0519***	0.0467***	0.455***	1		
11 Intangible assets	3.824852	53981.29	-0.00246	-0.00614	0.0216***	0.00739*	0.0106**	-0.0000881	-0.00121	0.00294	0.00138	0.0029	1	
12 Institutional exposure	3.31318	4.791081	-0.0363***	-0.202***	-0.249***	-0.00173	-0.140***	-0.00516	0.0252***	-0.123***	0.0724***	-0.0265***	-0.00547	1

* p<0.05, **p<0.01, ***p<0.001
(observations - 71,624)

b. Emerging-economy Multinational Enterprises

Variables	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1 ROA	5.408517	8.316592	1											
2 Age	21.98909	17.55754	0.0381***	1										
3 Size	4522.845	14371.25	0.0224**	0.104***	1									
4 Organizational slack	66.7947	96.55598	-0.252***	0.0990***	0.0593***	1								
5 Market share	7.50549	21.23788	0.0425***	0.318***	0.205***	0.0871***	1							
6 Capital intensity	9726101	1.34E+09	-0.00498	-0.00372	-0.00213	0.0172*	-0.00257	1						
7 Tangible resources	30328.29	177234.1	-0.0230**	0.0384***	-0.0224**	0.0892***	0.0553***	-0.00107	1					
8 Industry competitiveness	0.2210468	0.3241116	0.0554***	0.399***	0.0624***	0.0959***	0.597***	0.0174*	0.0421***	1				
9 Macroeconomy	5.84E+00	7.74E-01	-0.105***	-0.500***	-0.0564***	-0.138***	-0.422***	-0.0118	-0.0451***	-0.565***	1			
10 GDP capita	6974.136	2913.972	-0.107***	-0.131***	0.0391***	-0.114***	0.0722***	-0.01	-0.0182*	-0.0072	0.407***	1		
11 Intangible assets	6.051722	203.4672	-0.00983	-0.00573	0.00118	0.00392	-0.00401	-0.00022	-0.00125	-0.0065	0.00927	0.00641	1	
12 Institutional exposure	3.638023	1.234631	-0.0787***	-0.244***	-0.237***	-0.0631***	-0.233***	0.000918	-0.0424***	-0.217***	0.300***	0.0902***	0.000832	1

* p<0.05, **p<0.01, ***p<0.001
(observations - 18,978)

4.3 Estimation Method

Table 2 represents the descriptive statistics and correlation matrix for both AMNEs and EMNEs, and the correlations between variables are within acceptable levels. Low correlations neither constrain good fit, nor affect inferences about the dependent variable (Neter et al., 1996). We mean-centred the variables in the interaction term to avoid issues pertaining to multicollinearity and enhance the interpretability of the interactions (Aiken et al., 1991). Additionally, we performed a multiple regression analysis to detect for potential multicollinearity to assess variance inflation factors. *Table 12* implies that VIFs values for all independent variables are below the cut-off point of 10 (Kutner et al., 2005, Neter et al., 1996, Bowerman et al., 2005). Therefore, multicollinearity is not a significant issue in our analysis. Furthermore, the lack of correlation between the moderator and both the independent and the dependent variables is a desirable condition for moderated effects, as it leads to easier interpretation (Baron and Kenny, 1986). We used the Hausman specification test to select between using Random Effects (RE) and Fixed Effects (FE), as the Hausman test would determine whether the unique errors are correlated with the regressors. The null hypothesis is they are not correlated. For the sample containing AMNEs, the Hausman tests returned with a $\chi^2 = 826.62$ and a *p-value* of 0.00, which is significant at $p \leq 0.05$. For the sample containing EMNEs, the Hausman test returned with a $\chi^2 = 439.94$ and *p-value* of 0.00, which is significant at $p \leq 0.05$. Therefore, FE estimation would be an appropriate estimation of the coefficients (Wooldridge, 2010). We chose to use the FE approach in our analysis and use alternative estimation methods (i.e., Generalized Least Squares method and Mixed methods) to check the robustness of our results.

4.4 Robustness Tests and Additional Analysis

Table 23 and Table 24 illustrate the models for robustness checks. First, we performed an identical analysis without the use of control variables, as running regression models without the control variables helps us understand the influence of control variables on the relationship between our independent and dependent variables (Glaser et al., 2016, Benischke et al., 2019). Models 7 and 8 indicate that our main results were unchanged by our control variables, thereby supporting the validity of our study. Second, we used alternate performance measure to firm performance (ROE and profitability) as our dependent variables. Models 9 and 10 are consistent with the finding of our main results. Third, we examine whether our findings are influenced by the choice of regression method. We examined the sensitivity to changes in estimation by using Generalized Least Square and Mixed methods analysis. Models 9 and 10 (GLS) and models 11 and 12 (Mixed) yielded similar results to our initial findings in Table 22. Fourth, in models 15 and 16 we examined whether our measure of institutional quality was influenced by the weights given to the components of institutions by World Economic Forum (WEF) (WEF, 2018). Table 24 consists of alternate measures used to calculate exposure to host-countries institutional quality by using WEF disaggregated institutional measures of both private and public institutions (models 17 and 20), the Fraser Institute Economic Freedom Index overall score (models 21 and 22), and the World Heritage Foundation's the Index of Economic Freedom (models 23 and 24). The results from model 17 to 24 substantiates our main findings.

Table 14 - Empirical Chapter 2: Regression Results

Method Model Firm Type	OLS-FE M1		OLS-FE M2 AMNEs		OLS-FE M3		OLS-FE M4		OLS-FE M5 EMNEs		OLS-FE M6	
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>												
Age	-0.17***	(0.05)	-0.15***	(0.05)	-0.15***	(0.05)	-1.26***	(0.20)	-1.19***	(0.20)	-1.21***	(0.20)
Size	-0.08**	(0.04)	-0.12***	(0.04)	-0.12***	(0.04)	0.11**	(0.04)	-0.05	(0.04)	-0.06	(0.04)
Organizational slack	-0.35***	(0.01)	-0.34***	(0.01)	-0.34***	(0.01)	-0.26***	(0.02)	-0.26***	(0.02)	-0.25***	(0.02)
Market share	0.45***	(0.09)	0.40***	(0.08)	0.40***	(0.08)	0.12	(0.11)	0.19*	(0.11)	0.20*	(0.11)
Capital intensity	-0.79***	(0.05)	-0.77***	(0.05)	-0.77***	(0.05)	-0.78***	(0.10)	-0.75***	(0.09)	-0.75***	(0.09)
Tangible resources	0.17***	(0.03)	0.13***	(0.03)	0.13***	(0.03)	0.14***	(0.04)	-0.01	(0.04)	-0.01	(0.04)
Industry competitiveness	-0.51	(0.38)	-0.27	(0.39)	-0.26	(0.39)	4.03	(2.75)	3.82	(2.69)	3.82	(2.68)
Macroeconomy	-0.94***	(0.16)	-0.87***	(0.15)	-0.87***	(0.15)	0.71*	(0.39)	0.92**	(0.38)	0.95**	(0.38)
GDP per capita	-0.58***	(0.10)	-0.56***	(0.09)	-0.56***	(0.09)	-0.08	(0.20)	-0.10	(0.19)	-0.11	(0.19)
<u>Independent variables</u>												
Intangible Assets (IA)			0.29***	(0.01)	0.26***	(0.01)			0.33***	(0.01)	0.20***	(0.04)
Institutional Exposure (IE)			-0.10	(0.28)	-0.11	(0.28)			0.55	(0.55)	0.50	(0.55)
<u>Interaction effects</u>												
IA x IE					0.02***	(0.01)					0.06***	(0.02)
Constant	15.48***	(1.12)	15.52***	(1.18)	15.56***	(1.18)	7.95***	(1.93)	8.52***	(2.27)	8.70***	(2.27)
Observations	71,624		71,624		71,624		18,978		18,978		18,978	
R-squared (within/between/overall)	0.06/0.06/0.4		0.15/0.11/0.10		0.15/0.11/0.10		0.12/0.04/0.04		0.21/0.04/0.05		0.21/0.04/0.05	
Number of firms	11,435		11,435		11,435		3,277		3,277		3,277	
year dummies	Included		Included		Included		Included		Included		Included	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 15 - Empirical Chapter 2: Robustness Analysis

	Without Control variables				Alternative Performance measure				Alternative Performance measure				Sensitivity Analysis							
													Random Effects		Mixed Effects					
Method	OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		GLS-RE		GLS-RE		Mixed		Mixed	
Model	M7		M8		M9		M10		M11		M12		M13		M14		M15		M16	
Firm Type	AMNE		EMNE		AMNE		EMNE		AMNE		EMNE		AMNE		EMNE		AMNE		EMNE	
Dependent variable	ROA		ROA		ROCE		ROCE		Profitability		Profitability		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>																				
Age					-0.16***	(0.06)	-1.12***	(0.21)	-0.17***	(0.04)	-1.17***	(0.20)	0.04***	(0.01)	-0.14***	(0.04)	0.00	(0.01)	-0.16***	(0.04)
Size (employees)					-0.08	(0.05)	-0.07	(0.05)	-0.02	(0.04)	0.15***	(0.05)	0.13***	(0.01)	0.02	(0.02)	0.16***	(0.01)	0.03**	(0.01)
Organizational slack					-0.35***	(0.02)	-0.16***	(0.02)	-0.25***	(0.01)	-0.15***	(0.02)	-0.30***	(0.01)	-0.30***	(0.01)	-0.30***	(0.01)	-0.30***	(0.01)
Market share					0.36***	(0.10)	0.31***	(0.12)	0.42***	(0.09)	0.19*	(0.11)	-0.06***	(0.02)	0.11***	(0.03)	-0.05***	(0.02)	0.07***	(0.02)
Capital intensity					-0.86***	(0.06)	-0.84***	(0.09)	-0.89***	(0.05)	-0.92***	(0.11)	-0.81***	(0.03)	-0.64***	(0.07)	-0.78***	(0.01)	-0.65***	(0.02)
Tangible resources					0.15***	(0.04)	-0.05	(0.04)	0.18***	(0.03)	0.10**	(0.04)	0.21***	(0.01)	0.02	(0.02)	0.23***	(0.01)	0.03**	(0.01)
Industry competitiveness					0.17	(0.54)	3.07	(2.57)	0.21	(0.35)	3.46	(3.13)	-0.04	(0.06)	0.07	(0.10)	0.18***	(0.06)	-0.03	(0.10)
Macroeconomy					-0.78***	(0.18)	0.96**	(0.42)	-0.66***	(0.14)	-0.19	(0.33)	0.29***	(0.09)	0.84***	(0.25)	-0.79***	(0.13)	1.25***	(0.25)
GDP per capita					-0.51***	(0.11)	-0.38*	(0.20)	-0.52***	(0.09)	-0.30	(0.18)	-0.57***	(0.06)	-0.38***	(0.05)	-0.70***	(0.07)	-0.41***	(0.08)
<u>Independent variables</u>																				
Intangible Assets (IA)	0.27***	(0.01)	0.18***	(0.03)	0.26***	(0.01)	0.24***	(0.05)	0.18***	(0.01)	0.11***	(0.04)	0.28***	(0.01)	0.19***	(0.04)	0.28***	(0.01)	0.19***	(0.03)
Institutional Exposure (IE)	-0.12	(0.23)	0.71	(0.47)	0.10	(0.34)	0.43	(0.62)	0.32	(0.27)	1.03**	(0.52)	-0.07***	(0.02)	-0.21***	(0.05)	-0.10***	(0.02)	-0.19***	(0.04)
<u>Interaction effects</u>																				
IA x IE	0.02***	(0.00)	0.06***	(0.01)	0.04***	(0.01)	0.10***	(0.03)	0.04***	(0.01)	0.05**	(0.02)	0.02***	(0.01)	0.06***	(0.02)	0.02***	(0.00)	0.06***	(0.01)
Constant	1.71***	(0.38)	0.69	(0.91)	15.14***	(1.40)	12.32***	(2.38)	13.13***	(1.11)	10.14***	(2.28)	10.08***	(0.68)	7.21***	(0.71)	13.15***	(1.07)	7.90***	(0.78)
Observations	71,624		18,978		63,158		18,796		71,621		18,978		71,624		18,978		71,624		18,978	
R-squared (within/between/overall)	0.09/0.09/0.09		0.12/0.00/0.01		0.13/0.10/0.09		0.21/0.04/0.06		0.12/0.07/0.06		0.18/0.05/0.06		0.14/0.26/0.20		0.20/0.22/0.21					
Number of firms	11,435		3,277		10,298		3,255		11,435		3,277		11,435		3,277		11,435		3,277	
Number of countries																	36		41	
Wald X ²																	13819.30		4919.40	
X ²																	0.00		0.00	
year dummies	Included		Included		Included		Included		Included		Included		Included		Included		Included		Included	
Industry dummies													Included		Included					

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 16 - Empirical Chapter 2: Robustness Analysis (Alternative Institutional Exposure)

Method Model Firm Type	GCI private Institutions				GCI public Institutions				Fraser Institute				Heritage Foundation			
	OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE	
	M17	M18	M19	M20	M21	M22	M23	M24	AMNE	EMNE	AMNE	EMNE	AMNE	EMNE	AMNE	EMNE
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>																
Age	-0.15***	(0.05)	-1.20***	(0.20)	-0.15***	(0.05)	-1.21***	(0.20)	-0.15***	(0.05)	-1.23***	(0.20)	-0.15***	(0.05)	-1.22***	(0.20)
Size	-0.12***	(0.04)	-0.05	(0.04)	-0.12***	(0.04)	-0.06	(0.04)	-0.12***	(0.04)	-0.06	(0.04)	-0.12***	(0.04)	-0.06	(0.04)
Organizational slack	-0.34***	(0.01)	-0.25***	(0.02)	-0.34***	(0.01)	-0.25***	(0.02)	-0.34***	(0.01)	-0.26***	(0.02)	-0.34***	(0.01)	-0.25***	(0.02)
Capital intensity	0.40***	(0.08)	0.20*	(0.11)	0.40***	(0.08)	0.20*	(0.11)	0.40***	(0.08)	0.20*	(0.11)	0.40***	(0.08)	0.20*	(0.11)
Tangible resources	-0.77***	(0.05)	-0.75***	(0.09)	-0.77***	(0.05)	-0.75***	(0.09)	-0.77***	(0.05)	-0.75***	(0.09)	-0.77***	(0.05)	-0.75***	(0.09)
Market share	0.13***	(0.03)	-0.01	(0.04)	0.13***	(0.03)	-0.01	(0.04)	0.13***	(0.03)	-0.01	(0.04)	0.13***	(0.03)	-0.01	(0.04)
Industry competitiveness	-0.26	(0.39)	3.81	(2.68)	-0.26	(0.39)	3.82	(2.68)	-0.25	(0.39)	3.76	(2.70)	-0.26	(0.39)	3.79	(2.68)
Macro-economy	-0.87***	(0.15)	0.87**	(0.38)	-0.87***	(0.15)	0.97**	(0.38)	-0.91***	(0.15)	0.97***	(0.37)	-0.88***	(0.15)	0.94**	(0.40)
GDP per capita	-0.55***	(0.09)	-0.08	(0.19)	-0.56***	(0.09)	-0.12	(0.19)	-0.57***	(0.09)	0.02	(0.19)	-0.56***	(0.09)	-0.10	(0.19)
<u>Independent variables</u>																
Intangible Assets (IA)	0.26***	(0.01)	0.21***	(0.04)	0.26***	(0.01)	0.20***	(0.04)	0.27***	(0.01)	0.20***	(0.05)	0.25***	(0.02)	0.14*	(0.07)
Institutional Quality (IQ)	0.24	(0.35)	0.55	(0.53)	-0.16	(0.25)	0.43	(0.53)	1.29*	(0.71)	-3.06**	(1.37)	0.26	(0.27)	0.09	(0.46)
<u>Interaction effects</u>																
IA x IQ	0.02***	(0.01)	0.06***	(0.02)	0.02***	(0.01)	0.06***	(0.02)	0.01**	(0.01)	0.06***	(0.02)	0.01***	(0.00)	0.04***	(0.02)
Constant	14.88***	(1.31)	8.45***	(2.32)	15.61***	(1.14)	8.87***	(2.22)	12.97***	(1.76)	15.43***	(3.31)	14.30***	(1.52)	9.23***	(2.90)
Observations	71,624		18,978		71,624		18,978		71,624		18,977		71,624		18,977	
R-squared (within/between/overall)	0.15/0.08/0.08		0.21/0.03/0.05		0.15/0.11/0.10		0.21/0.04/0.05		0.15/0.01/0.01		0.21/0.04/0.04		0.15/0.06/0.06		0.21/0.04/0.05	
Number of subsidiaries	11,435		3,277		11,435		3,277		11,435		3,277		11,435		3,277	
year dummies	Included		Included		Included		Included		Included		Included		Included		Included	

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

Table 14 - Empirical Chapter 2: Regression Results

Method	OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE	
Model	M1		M2		M3		M4		M5		M6	
Firm Type			AMNEs						EMNEs			
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>												
Age	-0.17***	(0.05)	-0.15***	(0.05)	-0.15***	(0.05)	-1.26***	(0.20)	-1.19***	(0.20)	-1.21***	(0.20)
Size	-0.08**	(0.04)	-0.12***	(0.04)	-0.12***	(0.04)	0.11**	(0.04)	-0.05	(0.04)	-0.06	(0.04)
Organizational slack	-0.35***	(0.01)	-0.34***	(0.01)	-0.34***	(0.01)	-0.26***	(0.02)	-0.26***	(0.02)	-0.25***	(0.02)
Market share	0.45***	(0.09)	0.40***	(0.08)	0.40***	(0.08)	0.12	(0.11)	0.19*	(0.11)	0.20*	(0.11)
Capital intensity	-0.79***	(0.05)	-0.77***	(0.05)	-0.77***	(0.05)	-0.78***	(0.10)	-0.75***	(0.09)	-0.75***	(0.09)
Tangible resources	0.17***	(0.03)	0.13***	(0.03)	0.13***	(0.03)	0.14***	(0.04)	-0.01	(0.04)	-0.01	(0.04)
Industry competitiveness	-0.51	(0.38)	-0.27	(0.39)	-0.26	(0.39)	4.03	(2.75)	3.82	(2.69)	3.82	(2.68)
Macroeconomy	-0.94***	(0.16)	-0.87***	(0.15)	-0.87***	(0.15)	0.71*	(0.39)	0.92**	(0.38)	0.95**	(0.38)
GDP per capita	-0.58***	(0.10)	-0.56***	(0.09)	-0.56***	(0.09)	-0.08	(0.20)	-0.10	(0.19)	-0.11	(0.19)
<u>Independent variables</u>												
Intangible Assets (IA)			0.29***	(0.01)	0.26***	(0.01)			0.33***	(0.01)	0.20***	(0.04)
Institutional Exposure (IE)			-0.10	(0.28)	-0.11	(0.28)			0.55	(0.55)	0.50	(0.55)
<u>Interaction effects</u>												
IA x IE					0.02***	(0.01)					0.06***	(0.02)
Constant	15.48***	(1.12)	15.52***	(1.18)	15.56***	(1.18)	7.95***	(1.93)	8.52***	(2.27)	8.70***	(2.27)
Observations	71,624		71,624		71,624		18,978		18,978		18,978	
R-squared (within/between/overall)	0.06/0.06/0.4		0.15/0.11/0.10		0.15/0.11/0.10		0.12/0.04/0.04		0.21/0.04/0.05		0.21/0.04/0.05	
Number of firms	11,435		11,435		11,435		3,277		3,277		3,277	
year dummies	Included		Included		Included		Included		Included		Included	

Robust standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

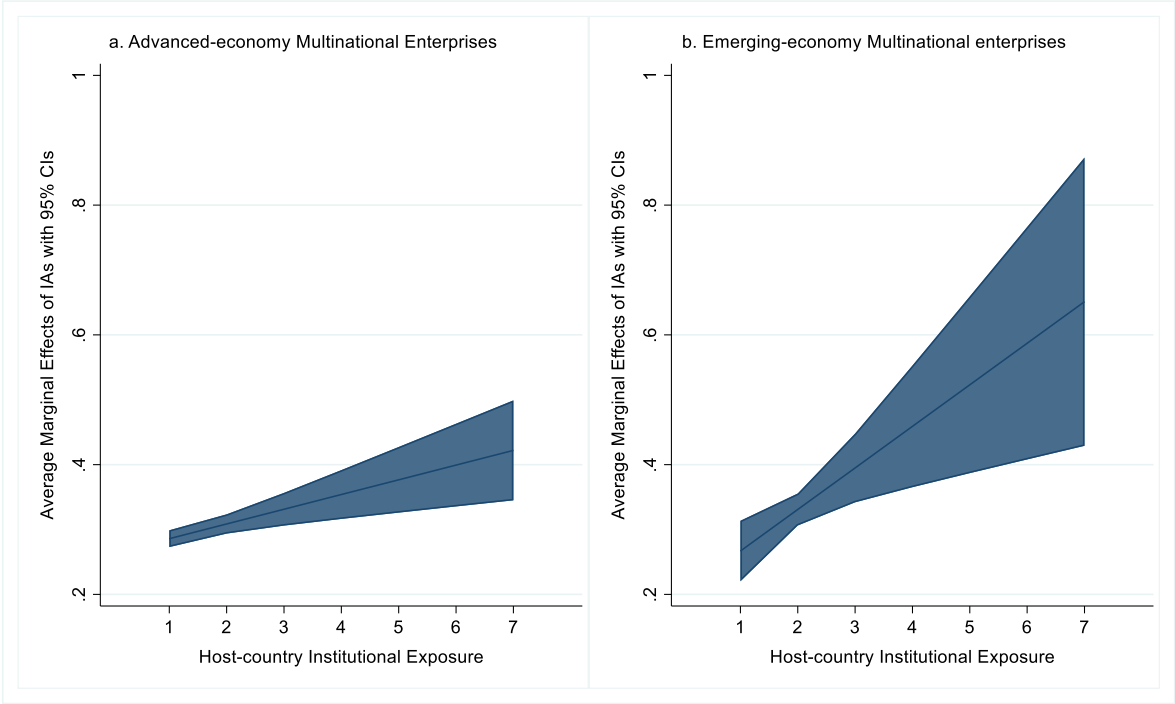
Table 15 indicates the regression results for AMNEs and EMNEs. Models 1 to 6 report acceptable levels of χ^2 , and the models also reports group clustered Huber-White standard errors that are robust for heteroskedasticity and intra-group correlation of error terms (Wooldridge, 2010). Models 1 to 3 indicate AMNEs and models 4 to 6 indicates EMNEs. In models 1 and 4, we include the direct effects of control variables. Models 2 and 4 we introduce the direct effects of intangible assets and institutional exposure along with the control variables. In models 3 and 6, we include the interaction effects between intangible assets and institutional exposure along with the independent variables and control variables.

Hypothesis 2a. *The performance enhancing effects of intangible assets are stronger for EMNEs than they are for AMNEs.* Models 2 and 4 indicate that the direct effects of intangible assets is positive and statistically significant for both AMNEs and EMNEs ($\beta = 0.29, p \leq 0.01$; $\beta = 0.33, p \leq 0.01$, respectively). The results suggest the direct effects of intangible assets enhancing firm performance is positive for both AMNEs and EMNEs, and the performance enhancing effects of intangible assets are stronger for EMNEs than they are for AMNEs. The findings support hypothesis 2a. Hypothesis 2b predicts that, *the greater the level host-country institutional quality, the stronger the performance enhancing effects of intangible assets are for EMNEs than AMNEs.* Models 3 and 6 indicate that the interaction effects between intangible assets and host-country institutional quality is positive and statistically significant for both AMNEs and EMNEs ($\beta = 0.02, p \leq 0.01$; $\beta = 0.06, p \leq 0.01$, respectively). The findings support hypothesis 2b.

Figure 4a and Figure 4b show the marginal effects of intangible assets on firm performance at different levels of host-country institutional exposure for AMNEs and EMNEs. The “Y-axes” indicate the marginal effects of intangible assets on firm performance, and the “X-axes” indicates the level of host-country

institutional exposure. Figure 4a and 4b confirm that the performance enhancing effects of intangible assets are positively influenced by host-country institutional exposure, and the performance enhancing effects of intangible assets are greater for EMNE intangible assets than it is for AMNEs at higher levels of host-country institutions. In addition, figure 4a and 4b indicate that, the performance enhancing effects of intangible assets are stronger for EMNE than they are for AMNEs. Therefore, supporting hypothesis 2b. The findings suggests, multinational enterprise exposure to similar institutional context would not influence firm homogenously, and the influence of intangible assets enhancing firm performance is likely to be contingent upon their exposure to varying levels of host-country institutional quality.

Figure 4 - Empirical Chapter 2: Marginal effects of AMNE and EMNE intangible assets



1. Discussions and Conclusions

In empirical chapter 2, we examine to what extent does the performance enhancing effects of multinational enterprise intangible assets are influenced by the exposure to host-country institutional quality. The results indicate at lower levels of institutional exposure, the performance enhancing effects of intangible asset are somewhat similar for both AMNEs and EMNEs. However, the performance enhancing effects between AMNEs and EMNEs vary with the increase in exposure to host-country institutional quality. We find that, EMNEs are likely to augment performance to a greater extent at higher levels of host country institutional quality than AMNEs. Our study address the calls for complementarity between firm resources and the institutional contexts (Peng et al., 2009, Oliver, 1997). Drawing upon RBV theory (Barney, 1991, Amit and Schoemaker, 1993, Peteraf, 1993b, Teece et al.,) and institutional theory (Davis et al., 1971, North, 1990, North, 1991, Scott, 1995, Scott, 2001) to examine the effects of host-country institutions on MNE intangible assets. The empirical analysis consists of 90,602 observations (71,624 AMNEs and 18,978 EMNEs) in 79 countries for the period of 2011-2017.

First, we contribute towards international business literature that argue, performance variations between AMNEs and EMNEs can be explained by examining the AMNEs traditional ownership advantages in comparison to EMNEs . Our study finds that, the performance enhancing effects of intangible assets are positive and significant for both AMNEs and EMNEs, yet the direct effects of intangible assets influencing firm performance were stronger for EMNEs than they were for AMNEs. This can be attributed to, EMNEs need to catch up with AMNEs has led to EMNEs actively seeking strategic assets via their subsidiaries in advanced economies with efficient institutions (Li et al., 2018,

Deng et al., 2020, Sutherland et al., 2020, He et al., 2018) to engage in competence creation (Cantwell and Mudambi, 2005a, Cantwell and Mudambi, 2011) and internalize accumulated knowledge within the MNE network to enhance parent firm performance .

Second, we contribute to the institution-based view of the firm (Peng, 2002, Peng et al., 2009) by suggesting that that performance outcomes of MNEs are not identical for firms operating in similar host-country institutions, but vary between different types of firms. In this instance, between AMNEs and EMNEs. In addition, we contribute towards literature on institutions (Meyer et al., and research examining the influence of host-country institutions on firm performance (Meyer et al., 2011, Hermelo and Vassolo, 2010, Kafouros and Aliyev, 2016a, Cuervo-Cazurra and Genc, 2008b, Yiu and Makino, 2002, Makino et al., 2002, Yan et al., 2018) by comparing the influence of home-country institutions on the performance enhancing effects of intangible assets between AMNEs and EMNEs. Our findings also adds to prior research that examine the role of host-country institutions on firm performance , but does not account for the influence of host-country institutions on performance variations between AMNEs and EMNEs.

5.1 Limitations and Future Research

Firstly, we use a composite measure to proxy for institutional quality dependent on multiple surveys and datasets. Even though the validity of the datasets have been established in previous empirical studies (Wan and Hoskisson, 2003, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b), it is a given that survey and data might contain sampling and measurement biases (Chan et al., 2008). Furthermore, our institutional quality measure treats each location as a single country, thus, the measure fails to

capture subnational variations (Ma et al., 2012), since within country institutional nuances exist and matter (Wang et al., 2012b) particularly in large emerging economy countries such as China and India. Therefore, future research should examine whether sub-national institutional differences influence the results.

In addition, the significance of different institutional characteristics might vary when determining the resources structuring process of MNEs resources (Dierickx and Cool, 1989, Helfat, 1997, Thomke and Kuemmerle, 2002, Knott et al., 2003). Therefore, future studies could examine to what extent do AMNEs and EMNEs differ in this process, and to what extent does the level of host-country institutions impact the resource structuring process. In addition, the organization structure of the MNE network and host-country subsidiary control (i.e., liberal versus coordinated) would allow us to distinguish would allow us to examine the role of different subsidiaries play from different institutional contexts to augment MNE performance. Future studies can incorporate and control for different types of intangible assets (i.e., patents, managerial capabilities, etc.) and potential transfers of intangible assets such as the role of firm capabilities, technology and R&D investments augmenting MNE performance. Although, we demonstrate that intangible assets are influenced by different types of host-country institutions, we do not capture the effects of MNEs' home-location institutional quality or the role of subsidiary intangible assets in determining the resource structuring process, as subsidiary mandates can differ from one another (Cantwell and Mudambi, 2005b). Finally, our conclusions are restricted by the size of the sample, the availability of data, and time period selected

Empirical Chapter 3: Host-country Institutions, Intangible Assets & Subsidiary Performance: A Comparative Study between Advanced Economy Multinational (AMNEs) Subsidiaries and Emerging Economy Multinational Subsidiaries

1. Introduction

Extant studies examining firm performance have used two distinctive theoretical lenses to understand firm performance. Firstly, RBV argues that firm-specific strategic resources are the foundation of sustained competitive advantage and RBV identifies intangible resources as a key contributor towards firm performance and heterogeneity (Barney, 1991, Amit and Schoemaker, 1993, Peteraf, 1993a, Teece et al., , Dierickx and Cool, 1989). However, merely owning resource-based advantages is insufficient to create value and sustainable competitive advantages (Priem and Butler, 2001a). Because, the value creation of firm resources are based on the firm's ability integrate both its internal and external environmental factors (Oliver, 1997). During the past two decades, extant research has used a combination of RBV and institutional theory to examine performance variations between firms operating in similar markets (Makino et al., 2004, Meyer et al., 2009a, Kafouros and Aliyev, 2016b, Banalieva et al., 2018, Chacar et al., 2010, Chan et al., 2008, Konara and Shirodkar, 2018). However, studies examining host-country institutional quality and its impact on firm performance is conflicting. Some studies indicate that the level of institutional quality enhances firm performance (Ngobo and Fouda, 2012, Kafouros and Aliyev, 2016b, Zhu et al., 2019, Cuervo-Cazurra et al., 2018b). Whereas other studies indicate that institutions have a negative impact on firm performance (Kafouros and Aliyev, 2016a, Chan et al., 2008, Shirodkar and Konara, 2017). Regardless of the contradictory evidence, the underlying assumption in institutional theory is that institutions are necessary for the effective functioning of firms, as it sets the "rules of the game" (North, 1990, p. 3).

In line with previous studies, we draw upon RBV (Barney, 1991, Petaref, 1993) and institutional literature(North, 1990) to examine the influence of host-country institutional quality on the performance enhancing effects intangible assets between AMNE subsidiaries versus EMNE subsidiaries.

Prior studies have examined the relationship between institutions and subsidiary intangible assets from a transitional economy context (Kafouros and Aliyev, 2016b), single country settings (Delios and Beamish, 2001), influence of host-country institutions on parent—firm intangible assets (Contractor et al., 2016), internalization advantages and subsidiary performance (Gaur et al., 2019b). Furthermore, extant literature on subsidiary performance is mostly quiet in examining the influence of vertical institutional variations (high versus low) and its influence on the performance enhancing effects of subsidiary intangible assets beyond an emerging economy perspective (Kafouros and Aliyev, 2016b). Thus, Thus, to the best of our knowledge, there are no studies contrasting the role of host- institutional quality on the performance-enhancing effects of subsidiary intangible assets between AMNEs and EMNEs subsidiaries. We argue that, this could be a major deficit in our understanding of the interdependent relationship between firm resources and institutional context in which resources are utilized (Oliver, 1997, Peng, 2002). As EMNEs play a major role in shaping today's dynamic business landscape (Ramamurti and Williamson, 2019), examining EMNEs subsidiaries in comparison AMNEs subsidiaries (Cuervo-Cazurra, 2012, Awate et al., 2015) would allow us to understand the nuances between the performance enhancing effects of subsidiary intangible assets host-country institutional quality.

We test our hypotheses from dataset consisting of 253,968 observations (243,779 observation for AMNE subsidiaries and 10,189 observations for EMNE subsidiaries) from 79 countries for the period of 2011-2017. First, we challenge the assumption that the level of host-country institutional quality influences subsidiary performance uniformly. We add to our understanding of the institution-based view (IBV) (Peng et al., 2008, Peng, 2002, Peng, 2004b, Peng et al., 2009) by suggesting that the influence of host-country institutions on subsidiary performance is not homogenous but conditional on the focal subsidiary's ability to utilize their intangible assets under varying levels of instructional

quality. This is in line with prior studies that suggest, the effectiveness of firm-specific resources is conditional on the institutional context in which the resources are utilized (Banalieva et al., 2018, Chacar et al., 2010, Cuervo-Cazurra et al., 2018b, Zhu et al., 2019, Estrin et al., 2018). Our findings indicate that the influence of host-country institutional quality is not homogenous between AMNE and EMNE subsidiaries operating in similar insertional settings. We find that both types of firms are likely to benefit from utilizing their intangible assets in host-countries with higher levels of institutional quality, but the nuances of the host-country institutional quality are slightly in favour of EMNEs subsidiaries than they are for AMNE subsidiaries.

Second, literature suggests that, EMNEs are better at adapting to turbulent institutional settings (Cuervo-Cazurra and Ramamurti, 2017, Cuervo-Cazurra and Genc, 2008b). Figure 6 suggests that at lower levels of host-country institutional quality, AMNE intangible assets were more resilient in their ability to enhance subsidiary performance. Whereas the performance enhancing effects of EMNE subsidiary intangible assets loses its significance at lower levels of host-country institutional quality. Suggesting that subsidiary mandates between AMNEs and EMNEs (Cantwell and Mudambi, 2005a, Achcaoucaou et al., 2014) and the different stages in evolution of focal subsidiary (Birkinshaw and Hood, 1998b, Birkinshaw et al., 1998, Rugman and Verbeke, 2001) are likely to play a role in the subsidiary's ability to utilize their intangible assets. furthermore, EMNE intangible assets require a certain level of host-country institutional quality to enhance subsidiary performance. Thus, allowing us to further our understanding on performance variations between subsidiaries operating in similar host-country institutional settings, and as to why the performance enhancing effects of intangible assets could vary between AMNE and EMNE subsidiaries.

Third we found that the performance enhancing effects of AMNE subsidiary intangible assets were more resilient in countries with lower levels of host-country institutional quality. This could be attributed to the internalization advantages of AMNEs, as the use of internalization advantages are greater in countries with inefficient institutions (Gaur et al., 2019b), as this would prevent leakages and lower risks of property rights infringements (Buckley and Casson, 2009b, Denekamp, 1995, Rugman and Verbeke, 2003). Whereas EMNE subsidiaries were likely to require a certain to levels of host-country institutional quality to utilize their intangible assets to enhance performance, as efficient institutions would provide their subsidiaries to access better market resources (Hennart, 2009, Rugman and Verbeke, 2001, Galunic and Rodan, 1998).

Fourth, we address the need for more nuanced understanding on institutions and their influence on firm performance (Earl and Michailova, 2021) and build on the studies that examine the influence of host-country institutions on firm performance (Meyer et al., 2011, Ferraris, 2014, Gaur et al., 2019b, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a). We achieve this by examining the influence of host-country institutions beyond emerging economies, as to the best of our knowledge, there are no studies explicitly comparing the performance enhancing effects of foreign subsidiary intangible assets between AMNE and EMNE subsidiaries with relation to host-country institutional quality. In addition, we contribute to studies on institutions (Peng, 2002, Peng et al., 2008, Peng et al., 2009, Peng et al., 2017) by explaining why the nature of the relationship between host-country institutional quality and the performance enhancing effects of subsidiary intangible assets differ between AMNE and EMNE subsidiaries.

2. Theoretical Background

2.1 Multinational Enterprise Subsidiaries

Subsidiaries play an integral role in the success of MNE (Birkinshaw and Hood, 1998a, Birkinshaw et al., 1998, Frost et al., 2002, Monteiro et al., 2008, Meyer et al., 2020, Gaur et al., 2019b). Subsidiaries can be defined as, “any operational unit controlled by the MNE that can be situated nationally or internationally in which the MNE (parent-firm) holds a majority or full ownership” (Birkinshaw et al., 1998, p. 224, Birkinshaw and Hood, 1998c, p. 774, Ghoshal and Bartlett, 1988, p. 365-368). Early studies considered subsidiaries to act as market providers or a recipient of parent firm’s technology transfers (Vernon, 1966, Hymer, 1976, Buckley and Casson, 1976). As such, MNEs primarily utilized their subsidiaries to expand across international borders to exploit their proprietary intangible assets and compete against domestic firms in foreign locations (Dunning, 1988b, Dunning, 1993, Teece, 1981, Buckley and Casson, 1976, Dunning, 1981, Vernon, 1966, Dunning, 1988a). However, Bartlett and Ghoshal (1988) argued that national subsidiaries also play a critical role in carrying out different tasks and processes through which innovations are created and institutionalised in the multinational corporation (Ghoshal and Bartlett, 1988, p. 365). Dunning (1993) argued that MNEs establish subsidiaries for different motives and differentiated these motives as: market-seeking, efficiency-seeking, natural resource-seeking, and strategic assets seeking (Dunning, 1993, Dunning and Lundan, 2008). Thus, MNEs can utilize their network of subsidiaries to establish different value chain activities (Ghoshal and Bartlett, 1988).

The MNE subsidiary is uniquely integrated within the MNEs internal network and the host-countries external network. Exposure to host-country external environment provides subsidiaries with new opportunities to integrate with local factor markets to develop and augment their intangible resources

(Birkinshaw et al., 1998, Rugman and Verbeke, 2001, Birkinshaw and Pedersen, 2009). Because, countries possess different country-specific or location advantages that are available to the firms operating in that specific location (Dunning, 1988a). Subsidiaries can access country-specific advantages by integrating with host-country external actors and enhance their performance. Existing empirical studies have found a positive relationship between firm performance and embedded relationships with host-country external environment actors (Uzzi, 1997, Zaheer et al., 1998, Andersson et al., 2002, Chen et al., 2009). For instance, subsidiaries embedded in their host-country external environment could mutually beneficial relationships leads better understanding and decreases market uncertainty, increase the understanding of external environments resource heterogeneity that could increase the possibility of value creation through efficient and effective resource bundling, identifying new opportunities in the external environment to augment performance. The efficient integration with the subsidiary's host-country external actors could lead to changes in subsidiary mandates (Cantwell and Mudambi, 2005a, Achcaoucaou et al., 2014) and the evolution of subsidiaries from a market-seeking strategy to developing their own subsidiary-specific advantages by integrating with host-country external environment actors (Uzzi, 1997, Zaheer et al., 1998, Andersson et al., 2002, Chen et al., 2009).

Subsidiaries have evolved from leveraging firm-specific advantages developed at the parent-level (Dunning, 1981, Vernon, 1966) to playing an active role as a sources of competitive advantage to the MNE (Birkinshaw and Hood, 1998c, Birkinshaw and Hood, 1997). Thus, subsidiaries are no longer passive actors in the MNEs network, instead subsidiaries are actively engaging in the development of competences (Birkinshaw et al., 1998, Birkinshaw and Hood, 1998a, Frost et al., 2002). For instance, Dunning (1993, 2008) recognized four types of motives for MNE's to establish subsidiaries in host-countries: market seeking, efficient seeking, natural resource seeking, and strategic assets seeking (Dunning, 1993, Dunning and Lundan, 2008). Kuemmerle (1997), differentiated subsidiaries into

knowledge augmenting and home base exploiting subsidiaries (Kuemmerle, 1997), which led to Cantwell and Mudambi (2005) differentiated subsidiaries into competence-creating and competence-exploiting subsidiaries (Cantwell and Mudambi, 2005a, Cantwell and Mudambi, 2011). Competence-creating subsidiaries actively engages in the process of intangible assets accumulation, bundling, and exploitation (Cantwell and Piscitello, 1999, Zander, 1998, Benito et al., 2003, Rugman and Verbeke, 2001, Phene and Almeida, 2008, Cantwell and Piscitello, 2015). Whereas competence exploiting subsidiaries utilize the intangible assets created in the subsidiary's parent firm (Cantwell and Piscitello, 1999, Zander, 1998, Benito et al., 2003, Rugman and Verbeke, 2001, Phene and Almeida, 2008, Cantwell and Piscitello, 2015). Therefore, MNEs utilize their globally distributed network of subsidiaries to access and leverage knowledge (Doz et al., 2001). the subsidiary's ability to access and source technologically intensive knowledge by accessing global knowledge reservoirs (Kafourous et al., 2012) could be regarded as a major source of competitive advantage (Almeida and Phene, 2004, Almeida, 1996, Santangelo et al., 2016, Awate et al., 2015).

MNEs from advanced economies and emerging economies share a few common advantages. For instance, their ability to accumulate and leverage intangible resources globally (Meyer et al., 2011, Doz et al., 2001). Extant literature posits that, advanced-economy multinational enterprises (AMNEs) use their subsidiaries for the purpose of competence creation or competence exploitation in the subsidiary's host-country (Cantwell and Mudambi, 2011, Cantwell and Mudambi, 2005a). Whereas emerging-economy multinational enterprise (EMNEs) lack in traditional ownership advantages (Ramamurti and Singh, 2009a, Ramamurti and Singh, 2009b) such as superior technological assets (Awate et al., 2012, Kumaraswamy et al., 2012), marketing expertise (Kumar and Steenkamp, 2013), and insufficient international experience and know-how (Luo and Tung, 2007). Thus, EMNEs subsidiaries utilize an asset seeking strategy to accumulate new intangible assets and bundling (i.e., upgrade) their existing

intangible assets to enhance firm performance (Dunning, 1993, Figueiredo, 2011, Awate et al., 2012, Awate et al., 2014). Nevertheless, EMNEs do possess non-traditional ownership advantages such as: experience in operating in institutionally volatile markets (Cuervo-Cazurra and Genc, 2008a, Khanna and Palepu, 1997, Li et al., 2018), cost-efficient product and processes (Ramamurti and Singh, 2009a, Zeng and Williamson, 2007). Similarly, some scholars have argued that EMNEs does not require traditional ownership advantages to internationalize (Mathews, 2006), as EMNEs can simultaneously develop their assets while acquiring assets abroad (Ramamurti, 2012, Cuervo-Cazurra, 2012). Therefore, EMNEs expansion into foreign locations is fundamentally driven in search of intangible assets, which are largely lacking in their home country (Ramamurti and Singh, 2009a, Zeng and Williamson, 2007, Mathews, 2006). In doing so, EMNEs are less constrained by the limitations of the factor-markets in the home country (Narula, 2012). Thus, as latecomers to international competition and the need to catch up with AMNEs, EMNEs could be more likely to benefit from expanding to advanced economies with efficient market mechanisms (Luo and Tung, 2007, Mathews, 2006, Gubbi et al., 2010), which could augment EMNE performance by acquiring strategic assets from advanced economies to gain access to superior intangible assets that are not available in their home-country external market (Williamson and Raman, 2013, Kedia et al., 2012, He et al., 2018). In sum, EMNE subsidiaries do not benefit from traditional types of intangible resources from their parent firm (Mathews, 2006, Ramamurti and Singh, 2009b, Ramamurti and Singh, 2009a, Rugman, 2009, Buckley et al., 2010). However, EMNE subsidiaries benefit from non-traditional intangible resources (i.e., networking skills, political know-how, organizational capabilities to function in challenging business environments, lower overhead costs, frugal innovation, and government relationships) from their parent firms (Govindarajan and Ramamurti, 2011, Ramamurti and Singh, 2009a, Cuervo-Cazurra and Genc, 2008b, Ramamurti and Singh, 2009b, Lall et al., 1983, Khanna and Palepu, 1997, Rugman and Li, 2007, Zeng and Williamson, 2007).

Thus, EMNEs utilize their subsidiaries to achieve two key objectives. Firstly, they are likely to locate their subsidiaries in advanced economies to access intangible resources and enhance their competitiveness against more established AMNEs (Mathews, 2006, Deng et al., 2018, Luo and Tung, 2007, Madhok and Keyhani, 2012). Secondly, EMNEs use their subsidiaries to overcome resource and institutional voids and uncertainty in their home country (Luo and Tung, 2007, Mathews, 2006, Luo and Tung, 2018, Ramamurti, 2012, Elia and Santangelo, 2017). On the contrary, AMNEs utilize their subsidiaries to exploit proprietary advantages (intangible assets) developed by the parent firm in their home-country (Buckley and Casson, 2009b, Kogut and Zander, 1993a, Vernon, 1966, Dunning, 1981). However, AMNEs have evolved from transferring intangible resources from the parent to their subsidiaries (i.e., market-seeking) (Ambos and Ambos, 2009, Kogut and Zander, 1993b, Tsai, 2001) to utilizing their subsidiaries to develop subsidiary-specific advantages (Rugman and Verbeke, 2001, Birkinshaw and Hood, 1998b, Birkinshaw et al., 1998). AMNE subsidiaries achieve this by bundling their existing resource with host-country complementary resource and seeking intangible resources that are not available in their home-country or within the MNEs internal network (Dunning, 2000, Dunning, 1988a, Rugman and Verbeke, 2001). Thus, subsidiaries to create their own mandates (Cantwell and Mudambi, 2005b, Birkinshaw et al., 1998, Rugman and Verbeke, 2001) and evolve from competence exploiting to competence creating mandates (Cantwell and Mudambi, 2005b, Awate et al., 2015). Therefore, it could be argued that the external environment of the subsidiary play and integral role in the subsidiary's ability to accumulate, bundle, and exploit their intangible assets to enhance firm performance (Delios and Beamish, 2001, Frost, 2001, Frost et al., 2002, Meyer et al., 2011).

2.1.1 Subsidiary Performance

The determinant of subsidiary performance is an integral issue in the international business environment. In this study, we examine the role of host-country institutional quality influencing the

performance enhancing effects subsidiary intangible assets. We draw upon RBV literature and Institutional literature to further our understanding on the interdependent relationship between a firm's intangible resources and institutional quality impacting subsidiary performance. The resources-based view (RBV) argue that the selection and accumulation of resources can be attributed to managerial decision making within the firm and external strategic factors. Within firm decision are driven by strategic purposes of efficiency, effectiveness and profitability (Conner, 1991, Conner and Prahalad, 1996). Whereas external industry factors are strategic industry factors that influence the firm (i.e., competition, buyer and suppliers, product and market structure) (Hansen and Wernerfelt, 1989, Wernerfelt, 1984, Rumelt, 1991). However, firm heterogeneity regarding the accumulation, bundling, and exploitation of firm resources depend on factor market imperfections (i.e., barriers to acquisition, imitation, and substitutions of key resources (Barney, 1986, Barney, 1991, Amit and Schoemaker, 1993). Thus, it is likely that subsidiary performance not only depends on the subsidiary's strategy in which they accumulate their resources, but also their ability to adapt to the host-country's institutional context (Teece, 1986a, Rosenzweig and Singh, 1991, Luo and Peng, 1999, Bartlett and Ghoshal, 1989). Particularly, the institutional environment, which sets up the "rules of the game" (North, 1991) and determines a firm's economic behaviour in each location. Furthermore, a firm's performance is not only determined by their heterogeneous firm-specific resources, but also institutional pressures (DiMaggio and Powell, 1983) in which they choose to utilize their intangible assets. Thus, the host-country institutional context in which subsidiaries operate determine the availability of market resources that includes infrastructure resources, information resources, and access to complementary market resources (Luo, 2003, Rosenzweig and Singh, 1991) and its intangible resources (i.e. labour, R&D etc.,) (Shapiro et al., 2018, Meyer et al., 2011, Gaur et al., 2019b).

2.2 Subsidiary's Host-country Institutional Quality

Institutions regulate economic activities by providing the “rules of the game” (North, 1990, p. 3). The institutional framework consists of both formal (i.e., property rights protection, judicial systems, government administration, and the political environment) and informal institutions (i.e., code of conducts, customs, and norms) (North, 1990, Williamson, 2000, Scott, 2001). In combination, both formal and informal institutions enables firms to integrate with external market actors (North, 1991, Wan and Hoskisson, 2003). For instance, political institutions in the form of governments determine policies such as: legal systems, protection of property rights, contract enforcement mechanisms, the availability and access to information provide the infrastructure for business transaction (Wan and Hoskisson, 2003) tariffs, taxes (Wang et al., 2012a, Henisz, 2000), and regulations (Shaffer, 1995, Kim and Prescott, 2005), effecting economic performance by investing in physical and human capital infrastructure (Aisen and Veiga, 2013), and enforcing trade barriers to protect firms from opportunistic behaviour (Henisz, 2000, Henisz and Delios, 2000, Contractor, 1990). Thus, providing the background conditions, and market mechanisms to reduce uncertainty, which would nurture firms to develop new resources and exploit existing resources by accessing complementary market resources (Cuervo-Cazurra, 2011, Khanna and Palepu, 1997, Ingram and Silverman, 2000, Ingram and Silverman, 2002).

“Institutional quality” can be defined as, the extent to which a country’s economic, political, and social institutions are advanced in their ability to provide the necessary infrastructure and background conditions for firms to operate both effectively and efficiently (Hermelo and Vassolo, 2010, Chan et al., 2008). Higher levels of institutional quality (i.e., efficient and effect institutions) would provide firms with access to market resources, transparency, information symmetry would provide firms with more transparency and access to information, effective regulatory institutions, effective enforcement of law

and regulations (Wright et al., 2005, Berry et al., 2010, Geleilate et al., 2016, Shaner and Maznevski, 2011), reduce uncertainty, transaction costs (North, 1990, Williamson, 2000, Brouthers, 2013, Hoskisson et al., 2013, Chen et al., 2015, Henisz and Swaminathan, 2008), provide efficient infrastructure (Ingram and Silverman, 2000) and market mechanisms (Sakakibara and Porter, 2001, Yiu et al., 2007). Efficient institutions would provide the necessary safeguard for firms to engage in economic activity and motivate subsidiaries to integrate with host-country external environment actors that would enhance the subsidiary's ability to accumulate, bundle, and exploit intangible assets, thereby enhancing firm performance (Andersson et al., 2002, Andersson et al., 2005).

On the contrary countries with lower levels of institutional quality suffer from institutional uncertainty (i.e., unpredictability and inconsistencies in law and regulation set by the state governing the business environment) (Henisz, 2003, Henisz and Delios, 2000, Henisz, 2000) and institutional voids (i.e., increase in the cost of doing business) (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017), which could result in inefficient institutions that could give rise to opportunistic behaviour due to a lack of contract enforcements, increase in transactions costs could lead inefficient market transactions, unpredictability of intermediaries could lead to an increase in market uncertainty, information asymmetry could lead to increase in search costs that would impact the focal subsidiary from utilizing complementary market resources , and a lack of property rights enforcement (Khanna and Palepu, 1997, North, 1990, Peng, 2003).

3. Hypotheses Development

3.1 Intangible Assets and Subsidiary Performance

RBV theory suggests that a firm's competitive advantages rests upon its possessing valuable, rare, inimitable, and non-substitutable resources (Barney, 1991, Wernerfelt, 1984). Intangible resources are regarded as the cornerstone of sustainable competitive advantages and performance variations between firms. Extant studies have referred to resources in many terms, i.e., capabilities (Kogut and Zander, 1992, Teece et al., , Helfat et al., 2009, Eisenhardt and Martin, 2000), core competences (Hamel and Prahalad, 1990, Prahalad, 1993, Coombs, 1996, Granstrand et al., 1997), or knowledge (Kogut and Zander, 1992, Kogut and Zander, 1993b, Grant, 1996, Teece, 1998), but for the purpose of this study and clarity we follow Hall (1992, 1993) and refer to intangible resources as "intangible assets" (Hall, 1992, Hall, 1993). Intangible assets include patents, intellectual property rights, copyrights, designs, trade secrets, contracts and licenses, the know-how of employees of the firm, brand name, databases, contracts (Hall, 1992, Hall, 1993), internalization advantages (Gaur et al., 2019b, Feinberg and Gupta, 2009, Buckley and Casson, 2019).

Intangible assets are tacit in nature, hard to imitate and codify (Kogut and Zander, 1992, Kogut and Zander, 1993b, Conner and Prahalad, 1996, Martin and Salomon, 2003) making them appropriate to trade in strategic factor markets (Barney, 1986, Kim et al., 2015). Intangible assets enable firms to yield superior economic rents (Hitt et al., 2001a, Hitt et al., 2006, Hall, 1992, Teece, 1998, Peteraf, 1993a), which could enhance firm performance and competitive advantage (Barney, 1991). Therefore, the subsidiaries' ability to effectively and efficiently accumulate (Dierickx and Cool, 1989, Helfat, 1997, Thomke and Kuemmerle, 2002, Knott et al., 2003), acquire (Barney, 1986, Barney, 1991, Mahoney and Pandian, 1992, Wernerfelt, 1984), bundle (Sirmon et al., 2007, Sirmon et al., 2011, Rugman and Verbeke,

2001). Extant studies regard MNEs as an intern-organizational network rather than unitary organization (Bartlett and Ghoshal, 1989, p. 604) and firm-specific advantages developed in subsidiaries can be utilized by the MNE network through market internalization (Birkinshaw and Pedersen, 2009, Rugman and Verbeke, 2001). Rugman and Verbeke (1992, 2001) expanded the scope of internalization advantages to the MNE subsidiary. The authors suggested that, subsidiaries develop subsidiary-specific advantages that can be utilized by the focal subsidiary and exploited through market internalization by their sister subsidiaries within their MNEs (Rugman and Verbeke, 1992, Rugman and Verbeke, 2001). Rugman and Verbeke (2003) defines subsidiary internalization as, *“the ability of management to organize and internal market”* (Rugman and Verbeke, 2003, p. 127) which is comparable to Buckley and Casson’s (1976) conceptualization of firm-specific advantage which posits that the *“ability to coordinate and organize internal markets”* (Buckley and Casson, 1976, p. 34).

Given that resource heterogeneity in firms contribute towards performance variations and their ability attain and sustained competitive advantage (Peteraf, 1993a, Barney, 1991). Firms operating in the same industry and location may vary in their performance (Barney, 2001, Peteraf and Barney, 2003). We concur with extant literature that suggests both AMNE and EMNEs accumulate and leverage their intangible assets globally (Meyer et al., 2011, Doz et al., 2001). Although there are some commonalities between AMNE and EMNEs subsidiaries, we propose that AMNE and EMNE subsidiary intangible assets would have dissimilar effects on subsidiary performance. Firstly, AMNE subsidiaries benefit from their parent firm’s superior intangible assets (Madhok and Keyhani, 2012, Lall et al., 1983, Wells, 1983, Ramamurti and Singh, 2009a, Luo and Tung, 2007, Luo and Tung, 2018), whereas, EMNE parent firms lack in superior intangible assets (Ramamurti and Singh, 2009a, Ramamurti and Singh, 2009b, Awate et al., 2015, Awate et al., 2012, Li et al., 2018) and might not possess traditional ownership advantages

(Mathews, 2006, Ramamurti and Singh, 2009b, Ramamurti and Singh, 2009a, Rugman, 2009, Buckley et al., 2010).

Second, subsidiary mandates (Cantwell and Mudambi, 2005b, Cantwell and Mudambi, 2011) between AMNE and EMNE subsidiaries are likely to differ, which could contribute towards performance variation between subsidiaries operating in similar institutional host-country institutional contexts. . Extant literature acknowledges that, AMNEs initially utilized their subsidiaries to exploit their superiors intangible assets developed in their parent firm locations (Dunning, 1988b, Dunning, 1993, Teece, 1981, Buckley and Casson, 1976, Dunning, 1981, Vernon, 1966, Dunning, 1988a), and evolved into developing their own subsidiary-specific intangible assets (Rugman and Verbeke, 2001, Birkinshaw et al., 1998) through subsidiary evolution and charter changes (Birkinshaw and Hood, 1998b, Birkinshaw, 1997), centres of excellences (Frost et al., 2002) and mandate changes (Cantwell and Mudambi, 2005a) that are likely to result in superior performance than its competitors in host locations. However, Unlike AMNEs, EMNEs are relative newcomers to global competition (Luo and Tung, 2007, Mathews, 2006, Gubbi et al., 2010), and are largely driven into foreign locations in search of intangible assets which are lacking in the parent firm's home-country (Ramamurti and Singh, 2009a, Zeng and Williamson, 2007, Mathews, 2006). Therefore EMNE subsidiaries have transformed into intangible assets seekers in their global expansion (Rugman and Li, 2007). Thus, EMNE subsidiaries overcome the lack of traditional intangible assets from their parent firms (Mathews, 2006, Ramamurti and Singh, 2009b, Ramamurti and Singh, 2009a, Rugman, 2009, Buckley et al., 2010) by using their subsidiaries to link, learn, and leverage (LLL) intangible assets (Mathews, 2002, Mathews, 2006). Building on this premise, we hypothesize that the performance enhancing effects of subsidiary intangible assets are greater for AMNEs than they are for EMNEs.

Hypothesis 3a. *“The performance enhancing effects of subsidiary intangible assets are greater for AMNEs than they for EMNEs”.*

3.2 Intangible assets and Subsidiary’s Host-country Institutional Quality

RBV theory argues that intangible assets enable firms to achieve superior performance (Barney, 1991, Barney, 2001), achieve sustained competitive advantage (Itami and Roehl, 1991) and contribute towards firm heterogeneity (Penrose, 1959, Peteraf, 1993b, Barney, 1991). Institutional theory argues that institutions set the rules of game (North, 1991), and establish the ground rules that act as the basis of production, exchange, and distribution (Davis et al., 1971). RBV assumes that firms are motivated to enhance their economic performance by utilizing their resources effectively and efficiently. Factor market imperfections (i.e., factors that inhibit imitation of resources) would contribute towards a firm heterogeneity in resources and strategies. While institutional theory assumes that firms are motivated to comply to external pressures (i.e., government rules and regulations). Every country offers a certain range of institutions to enable the functioning of markets (Khanna and Palepu, 1997), but the level of institutional quality varies from one country to another (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017). Extant literature posits that MNEs are a network of specialized interdependent units (Henisz, 2003, Henisz and Delios, 2000, Henisz, 2000), thus the role of the subsidiary is much more complex as they are simultaneously embedded in the MNEs internal network and their host-country external network (Thomke and Kuemmerle, 2002, Sirmon et al., 2007, Sirmon et al., 2008, Teece et al., , Teece, 1998). Furthermore, MNE subsidiaries are exposed to both opportunities and challenges as a result of institutional variations of their country of operation (Meyer et al., 2009a, Kostova et al., 2008, Dunning and Lundan, 2008). Thus, the value of intangible assets varies with the institutional context

(Holburn and Zelner, 2010, Meyer et al., 2009a), thereby the institutional environment in which firms operate play a crucial role in the firm's ability to appropriate rents from their intangible assets (North, 1990, Scott, 1995, Scott, 2001, Oliver,). For instance, countries with higher levels of institutional quality would simplify the access to complementary resources (Khanna and Rivkin, 2001) and enhance the performance enhancing effect of intangible assets. Whereas , host countries with lower levels of institutional quality (inefficient institutions) would expose subsidiaries to institutional voids (Khanna and Palepu, 1997, Khanna and Palepu, 2000, Doh et al., 2017) and institutional uncertainty (Henisz, 2003, Henisz and Delios, 2000, Henisz, 2000).

In this chapter, we build on the assumption that, the performance enhancing effects of subsidiary intangible assets are influenced by the level of quality on the host-country institutions. Firstly, we argue that the contributing factors for heterogenous subsidiary performance is not only a result of their firm-specific resources, but also attributed to the interactions effects of their intangible assets with the level of host-country institutional quality. Secondly, we examine to what extent the performance enhancing effects of subsidiary intangible assets differ between AMNE and EMNE subsidiaries. We analyse two mechanisms (i.e., resource bundling and exploitation) that could be influenced the by the level of host-country institutional quality, and to what extent these interactions might influence subsidiary performance. Thus, we argue that subsidiaries operating in similar institutional context might achieve varying performances as a result of the institutional quality in their country of operation. For the reason that higher levels of institutional quality would decrease the uncertainty around economic exchanges (North, 1991, Peng et al., 2009), reduce information asymmetry between contracting parties, reduce opportunistic behaviour, provide necessary background condition and infrastructure, and reduce unwanted risks and costs (North, 1990, Williamson, 2000, Peng et al., 2008).

Intangible asset bundling includes the accumulation of resources within the organization, and acquiring resources from external market sources to extend the value-creation potential of resource by engaging in incremental developments, and developing new resources altogether (Sirmon et al., 2008, Sirmon et al., 2011). Extant literature emphasise that intangible assets are a primary source to attain and sustaining competitive advantage (Barney, 1991, Grant, 1991, Grant, 1996). With the rise of subsidiary-specific advantages (Cantwell and Mudambi, 2005a, Rugman and Verbeke, 2001), subsidiaries are capable of developing their own intangible assets and are less likely to rely on their parent firm for intangible assets (Gulati, 1999, Andersson et al., 2007, Birkinshaw et al., 1998). Subsidiaries require complementary resources in their host-country external environment to develop subsidiary-specific advantages (i.e., intangible assets) (Rugman and Verbeke, 2001, Cantwell and Mudambi, 2005b, Frost et al., 2002, Birkinshaw et al., 1998). Complementary market resources can range from supporting infrastructure, enforcement of contracts, effective regulatory system, and access to market resources and information. Thus highlighting the importance of developing intangible assets internally (within the firm) (Barney, 1991, Barney and Tong, 2004, Grant, 1996), and developing intangible assets with sources external to the firm (Gulati, 1999, Andersson et al., 2002, Andersson et al., 2005). For instance, countries with higher levels of institutional quality support business activities and attract foreign subsidiaries (Zaheer et al., 1998) and reduce search costs for intangible assets embedded the host country's external environment (Meyer et al., 2009b), and reduce discriminatory costs associated of being foreign (Miller and Eden, 2006), facilitate the efficient functioning of markets (Gaur et al., 2019b) by enforcing trade barriers to protect firms from opportunistic behaviour , enforcement of laws and regulations, and free capital movement etc., (Wright et al., 2005, Berry et al., 2010, Geleilate et al., 2016, Shaner and Maznevski, 2011). Therefore, the political and legal system (i.e., structure of government, policy making, regulation of property rights, contract enforcement mechanisms etc.,) (Wan and Hoskisson, 2003), the economic system (i.e., natural factor markets, labour and capital markets (North, 1991) reduce uncertainty and provide the foundation for business activity. Thus, efficient institutions with higher

levels of institutional quality would enhance the ability to engage in asset bundling with the resources available in the market (Hennart, 2009, Rugman and Verbeke, 2001, Galunic and Rodan, 1998). Furthermore, internalization of market-based advantages (capital, product, and labour) would not be an effective way to transact in host-countries with efficient institutions. Because external markets in countries with higher levels of institutional quality provide competitors with superior access to resources (Gaur et al., 2019b). As a result, it could be argued that on average, countries with high levels of institutional quality are likely to provide subsidiaries with an environment that would be conducive to accumulate and bundle their intangible assets.

Conversely, countries with lower levels of institutional quality (inefficient institutions) would have a negative influence on firms operating in the local market, due to increase in transaction costs, ineffective regulatory systems, under-developed factor markets, and poor enforcement of law . These factors could deter the subsidiary's ability to efficiently utilize market resources. Furthermore, intangible assets can be influenced by the political institutions, as political instability would increase uncertainty about market policies and regulations (Henisz, 2000, Henisz and Delios, 2000). Weak political institutions in countries with lower levels of institutional quality would lead to weak governance policies (Uhlenbruck et al., 2006, Henisz, 2000, Henisz and Swaminathan, 2008). While efficient governance mechanisms would safeguard the focal subsidiary the risk of opportunistic behaviour by local partners (Zhou et al., 2014, Zhou and Xu, 2012, Heide, 1994). Furthermore, government impediments restricting a firm's ability to access complimentary assets would likely contribute towards premature asset depreciation (Feinberg and Gupta, 2009). Thus, underutilizing the intangible assets' usefulness in enhancing subsidiary performance. As such, political instability would lead subsidiaries to minimize their investments (Henisz and Delios, 2001). For instance, the lack of transparency and sufficient mechanisms to disseminate information would increase the costs of identifying, evaluating,

and partnering with host-country external actors. Furthermore, ineffective contract enforcement and weak property rights protection would result in the inability to protect their intangible assets from imitation (Luo, 2001a). The lack of contract enforcement would impede subsidiary's ability to efficiently source complementary assets (i.e., components, skilled labour) which can result in the underutilization of subsidiary's intangible asset's ability to enhance performance. Although, complementary resource are not always readily available in the markets with inefficient institutions (Sirmon et al., 2007, Sirmon et al., 2008), subsidiaries are likely to be established in countries with lower levels of institutional quality despite their inefficient institutions due to other factors such as lower factor costs of production and domestic market growth (Feinberg and Gupta, 2009).

The regulatory framework (i.e., contract enforcement and intellectual property rights regime) plays an integral role in exploitation and protection of intangible assets. Efficient IPR would safeguard intangible assets from imitation (Teece, 1996, Teece, 2006, Cohen and Levinthal, 2000) and encourage firms to engage in accumulation of intangible assets (Chen and Puttitanun, 2005), while increasing the costs of imitation (Helpman, 1992, Glass and Saggi, 2002, Sweet and Eterovic Maggio, 2015). Whereas, inefficient IPR regimes would lead to underutilization of intangible assets and weaken rent appropriation (Zhao, 2006). Although, efficient IPR protection does not guarantee rent appropriation from intangible assets, but a stronger IPR regime can make it costlier (i.e. allocation of more firm-resources) for competing firms to engage in imitation (Glass and Saggi, 2002). Whereas, inefficient IPR protection would make access to information less costly (Nuruzzaman et al., 2019) and would also make bundling and exploitation of intangible assets cost effective (Chan et al., 2008, Yan et al., 2018).

Subsidiaries vary depending on their mandates . Mandates can be distinguished into two: competence exploitation to competence creation (Cantwell and Mudambi, 2005a), and the host-country external actors play an integral role in the evolution of the subsidiary from market-seeking to developing subsidiary-specific advantages (Uzzi, 1997, Zaheer et al., 1998, Andersson et al., 2002, Chen et al., 2009). AMNE subsidiaries are more likely to engage in competence creation and exploitation in host-countries with high levels of institutional quality (efficient institutions). Operating in host-countries with efficient institutions would protect existing intangible assets, while letting them to utilize the available complementary resources to accumulate and bundle existing and new intangible assets, and the efficient regulatory environment would protect their intangible assets with minimal risks and cost of underutilizing their intangible assets. Furthermore, AMNE subsidiaries are likely benefit from internalization advantages in countries with lower levels of institutional quality, which can restrict the efficiency of external markets (Khanna and Palepu, 2000). importantly, the likelihood exploiting internalization advantages are greater with the risks of market failure due to inefficient institutions in the host country (Gaur et al., 2019b). For instance, AMNE subsidiaries can internalize the labour market with host-countries with lower levels of institutional quality (Gaur et al., 2007).

In comparison to AMNEs, EMNE do not possess traditional proprietary intangible assets (Awate et al., 2012, Kumaraswamy et al., 2012, Kumar et al., 2013, Luo and Tung, 2007) and their home-countries lack the complementary resources that are conducive to accumulate, bundle, and exploit intangible assets (Ramamurti and Singh, 2009a, Zeng and Williamson, 2007, Mathews, 2006). Therefore, EMNE subsidiaries opt for an asset seeking strategy when expanding to foreign locations (Dunning, 1993, Figueiredo, 2011, Awate et al., 2012, Awate et al., 2014). EMNE subsidiaries are likely to benefit from expanding to countries with higher levels of institutional quality with efficient market mechanisms (Luo and Tung, 2007, Mathews, 2006, Gubbi et al., 2010). In doing so, EMNE subsidiaries could be able

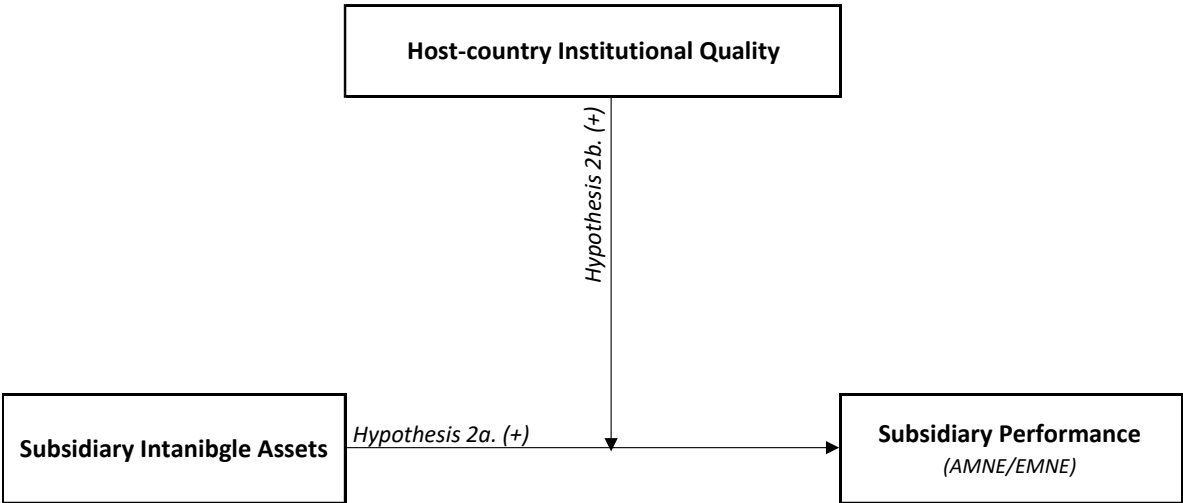
overcome the lack of complementary resources in their parent firm's home-country (Ramamurti and Singh, 2009a, Zeng and Williamson, 2007, Mathews, 2006) and accumulate and bundle intangible assets by gaining access to superior intangible assets in advanced economies with efficient institutions (Williamson and Raman, 2013, Kedia et al., 2012, He et al., 2018). Although EMNE subsidiaries lack the benefits of traditional ownership advantages from their parent firms', EMNE subsidiaries could benefit from their parent firm's non-traditional ownership advantages, such as, experience in operating in volatile institutional settings, frugal innovation, and political know-how (Govindarajan and Ramamurti, 2011, Ramamurti and Singh, 2009a, Cuervo-Cazurra and Genc, 2008b, Ramamurti and Singh, 2009b, Lall et al., 1983, Khanna and Palepu, 1997, Rugman and Li, 2007, Zeng and Williamson, 2007). EMNE subsidiaries are better positioned to utilize their intangible assets in countries with lower levels of institutional quality, as these firms are better at overcoming institutional deficiencies than AMNE subsidiaries (Cuervo-Cazurra and Genc, 2008b). Thus, the performance enhancing effects of EMNE subsidiary intangible assets are likely to be more resilient in countries with lower levels of institutional quality.

Based on the above arguments, both AMNE and EMNE subsidiaries are likely to benefit from accumulating, bundling, and exploiting their intangible assets in host-countries with higher levels of institutional quality. We propose that both AMNE and EMNE subsidiaries are expected to augment their performance enhancing effects of intangible assets in countries with higher levels of institutional quality. AMNE subsidiaries are likely to favour countries with higher levels of host-country institutional quality to accumulate, bundle, and exploit their intangible assets, as efficient institutions minimize the risks of institutional uncertainty and premature asset erosion. Whereas EMNE subsidiaries are better at adapting to turbulent institutional settings (Cuervo-Cazurra and Genc, 2008b) by internalizing advantages from their home-country institutional settings (Cuervo-Cazurra and Ramamurti, 2017).

based on the above arguments, we suggest that EMNE subsidiary intangible assets are likely to be more resilient and better adapted to host-countries with lower-levels of institutional quality due to their know-how in operating in turbulent institutional settings. Further, EMNE subsidiaries are likely to expand into foreign locations that have efficient institutions to overcome resource deficiencies in their home-country and need to catch up and compete with AMNE internationally would motive EMNEs to utilize their subsidiaries to aggressively search of complementary market resources that are more conducive to accumulating, bundling, and exploitation of intangible assets. Therefore, we hypothesize that the “the greater the level of institutional quality, the stronger the performance enhancing of intangible assets for EMNE subsidiaries than AMNE subsidiaries.

Hypothesis 3b. *“The greater the level of host-country institutional quality, the stronger the performance enhancing effects of intangible assets are for EMNE subsidiaries than AMNE subsidiaries”*

Figure 5 - Empirical Chapter3: Conceptual Framework



4. Methodology

4.1 Data

To test out hypotheses, we require subsidiary-level data and country level data on the quality of institutions for several years. We collected subsidiary-level data using ORBIS database (provided by Bureau van Dijk). ORBIS provides a thorough firm-level ownership and financial data of firms across the globe, which allows us to examine cross-country comparisons. Subsidiaries were selected by identifying those with over 50.01% ownership held by global ultimate owners (parent-firms), as over 50.01% owned subsidiaries safeguards that the selected firms are MNE subsidiaries and not portfolio investments of the parent firm. We distinguished between AMNEs and EMNEs by identifying the parent firm’s home-country economy classification provided by International Monetary Fund’s (IMF) in World Economic Outlook (WEO) database. Following extant studies (Chan et al., 2008, Shaner and Maznevski, 2011), we

measure country-level institutional quality by using the institutions indicator provided in “Global Competitive Indices” (GCI) provided by The World Economic Forum (WEF).

The final sample consists of 253,968 observations (243,779 observation for AMNE subsidiaries and 10,189 observations for EMNE subsidiaries) from 79 countries for the period of 2011-2017. We accommodate for extreme values influencing our variables by using “inverse hyperbolic sine” (IHS) transformation instead of the logarithmic transformation to normalize our variables. The IHS approach is more effective, as it handles both negative values, improves normality of the data, down-weights extreme values (Nyberg et al., 2010, Burbidge et al., 1988, Carroll et al., 2003), and provides a means of estimating a percentage interpretation (Pence, 2006).

Table 17 provides information on the distribution of the parent firms by country, and

Table 18 provide the distribution of subsidiaries by country. Table 19 provides information on subsidiaries by their NAICS 2-digit industry classifications.

4.1 Measurements

4.2.1 Dependent Variable

Performance capture the effective and efficient utilization of firm resources in dynamic business environments (Eisenhardt and Martin, 2000), and a firms ability to adapt their resources under different institutional context (Uhlenbruck, 2004, Peng, 2004b). Furthermore, in line with prior studies we use return on assets (ROS). ROA was calculated as a percentage of: $ROA = \frac{\text{profit before tax}}{\text{Total asset}}$. Furthermore, in the robustness checks, we use return on equity (ROE) measured as: $ROE = \frac{\text{Netincome}}{\text{average shareholders' equity}}$, profitability (Wang et al., 2012b) measured as a ratio: $\text{profitability} = \frac{EBIT}{\text{Total assets}}$.

4.2.2 Independent Variables

Following prior studies (Chang et al., 2013b, Chang et al., 2013a, Kafouros and Aliyev, 2016b, Marrocu et al., 2011, Arrighetti et al., 2014), we compute the measure of **intangible assets** by using the book value of intangible assets reported in the balance sheet using data provided by ORBIS. In addition, we normalize the book value of intangible assets by dividing intangible assets by turnover, as this approach has been used in prior studies examining the role on intangible assets on firm performance (Kafouros and Aliyev, 2016b, Arrighetti et al., 2014, Arrighetti et al., 2015).

To capture *institutional quality* which evolves over time, we use an indicator that captures the quality of institutions in different countries over several years. We follow studies that have used the “Global Competitive Index” (GCI) by The World Economic Forum to explore the role of institutional quality on firm resources (Wan and Hoskisson, 2003, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b). The GCI index captures both formal and informal institutions that influence a country’s economic prosperity for multiple years and uses a weighted combination of various aspects of institutions.

4.2.3 Control Variables

Since, *firm size* can influence economies of scope and scale (Qian et al., 2017, Lu and Beamish, 2004). We follow previous studies (Darnall et al., 2010, Isik et al., 2017, Doğan, 2013) and control for firm size by using the logarithmic value of total sales. We control for parent firm and subsidiary *experience* by measuring their *age* (number of years since establishment), as newly establish firm might be at a disadvantage in comparison to established firms. We control for *organizational slack* by conforming to previous studies examining firm performance variations (Bradley et al., 2011, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b), by calculating the debt to equity ratio, because organizational slack can lead to underutilization of firm resources that could have performance implications for firms (Bradley et al., 2011). We control for *Capital Intensity*, as it measures the amount of capital efficiency of firm using their assets to generate revenue, and the lower the capital intensity ratio the more efficient the firm is. Thus, capital intensity would contribute towards firm heterogeneity (Balasubramanian and Lieberman, 2010). we control for *tangible resources* by measuring the ratio of fixed assets per employee ($Tangible\ resources = fixed\ assets/employee$) (Wang et al., 2012a). Subsidiary performance can be influenced by market power (Kafouros and Aliyev, 2016b). We control for these effects by estimating the *market share* of the subsidiary as a firm-to-industry sales ratio in each year. We calculate *Industry competitiveness* by using Herfindahl index for each country-industry-year combination (NAICS 2 digits

industry level) (Kafouros and , Kafouros and Aliyev, 2016a,). As consumers with higher disposable income could spend more (, Kafouros and Aliyev, 2016a), we control for economic development by measuring **GDP per capita** obtained from the IMF World Economic Outlook Reports. Lastly, we capture time and industry-specific idiosyncrasies in the data using *year-specific dummy variables*. Following prior studies, we control for the **macroeconomic environment** (Vasylieva et al., 2018, Antwi et al., 2013) of the host-country by using the macroeconomic stability from the GCI index, which captures the level of inflation and debt dynamics of the country (WEF, 2018), and Lastly, we also include a **year-specific dummy variable** to control for time trends in the data.

Table 17 - Empirical Chapter 3: Distribution of Multinational Enterprise Parent Firms

Country	Freq.	Percent	Cum.	Country	Freq.	Percent	Cum.
<i>Australia</i>	20	0.26	0.26	<i>Bangladesh</i>	1	0.15	0.15
<i>Austria</i>	26	0.34	0.6	<i>Brazil</i>	3	0.45	0.6
<i>Belgium</i>	112	1.46	2.05	<i>Bulgaria</i>	2	0.3	0.89
<i>Canada</i>	28	0.36	2.42	<i>Chile</i>	7	1.04	1.93
<i>Cyprus</i>	7	0.09	2.51	<i>China</i>	363	54.02	55.95
<i>Denmark</i>	33	0.43	2.94	<i>Croatia</i>	14	2.08	58.04
<i>Finland</i>	240	3.12	6.06	<i>Egypt</i>	4	0.6	58.63
<i>France</i>	207	2.69	8.75	<i>Hungary</i>	16	2.38	61.01
<i>Germany</i>	566	7.36	16.1	<i>India</i>	85	12.65	73.66
<i>Greece</i>	34	0.44	16.54	<i>Indonesia</i>	8	1.19	74.85
<i>Hong Kong</i>	17	0.22	16.76	<i>Malaysia</i>	16	2.38	77.23
<i>Iceland</i>	21	0.27	17.04	<i>Mexico</i>	5	0.74	77.98
<i>Ireland</i>	46	0.6	17.63	<i>Nigeria</i>	2	0.3	78.27
<i>Israel</i>	20	0.26	17.89	<i>Pakistan</i>	6	0.89	79.17
<i>Italy</i>	682	8.86	26.76	<i>Peru</i>	1	0.15	79.32
<i>Japan</i>	1,273	16.54	43.3	<i>Philippines</i>	7	1.04	80.36
<i>Latvia</i>	7	0.09	43.39	<i>Poland</i>	59	8.78	89.14
<i>Lithuania</i>	14	0.18	43.57	<i>Russia</i>	11	1.64	90.77
<i>Luxembourg</i>	7	0.09	43.66	<i>Saudi Arabia</i>	3	0.45	91.22
<i>Netherlands</i>	231	3	46.67	<i>South Africa</i>	27	4.02	95.24
<i>New Zealand</i>	3	0.04	46.71	<i>Sri Lanka</i>	5	0.74	95.98
<i>Norway</i>	47	0.61	47.32	<i>Turkey</i>	1	0.15	96.13
<i>Portugal</i>	39	0.51	47.82	<i>Vietnam</i>	25	3.72	99.85
<i>Singapore</i>	14	0.18	48.01	<i>Zimbabwe</i>	1	0.15	100
<i>Spain</i>	421	5.47	53.48				
<i>Sweden</i>	910	11.83	65.3				
<i>Switzerland</i>	74	0.96	66.26				
<i>Taiwan</i>	17	0.22	66.48				
<i>United Kingdom</i>	1,800	23.39	89.88				
<i>United States</i>	779	10.12	100				
Total	7,695	100		Total	672	100	

Table 18 - Empirical Chapter 3: Distribution of AMNE & EMNE Subsidiaries by Country

a. AMNE subs

Country	Freq.	Percent	Cum.
<i>Albania</i>	3	0.01	0.01
<i>Australia</i>	278	0.61	0.61
<i>Austria</i>	570	1.25	1.86
<i>Bangladesh</i>	4	0.01	1.87
<i>Belgium</i>	2,035	4.45	6.32
<i>Bosnia and Herzegovina</i>	29	0.06	6.38
<i>Brazil</i>	4	0.01	6.39
<i>Bulgaria</i>	238	0.52	6.91
<i>Canada</i>	4	0.01	6.92
<i>Chile</i>	6	0.01	6.93
<i>China</i>	849	1.86	8.79
<i>Colombia</i>	3	0.01	8.8
<i>Croatia</i>	131	0.29	9.08
<i>Cyprus</i>	1	0	9.09
<i>Czech Republic</i>	949	2.08	11.16
<i>Denmark</i>	1	0	11.16
<i>Egypt</i>	4	0.01	11.17
<i>Estonia</i>	191	0.42	11.59
<i>Finland</i>	986	2.16	13.75
<i>France</i>	4,960	10.85	24.59
<i>Gabon</i>	1	0	24.59
<i>Germany</i>	2,431	5.32	29.91
<i>Ghana</i>	5	0.01	29.92
<i>Greece</i>	312	0.68	30.6
<i>Hong Kong</i>	2	0	30.61
<i>Hungary</i>	524	1.15	31.75
<i>Iceland</i>	56	0.12	31.87
<i>India</i>	86	0.19	32.06
<i>Indonesia</i>	13	0.03	32.09
<i>Ireland</i>	406	0.89	32.98
<i>Israel</i>	3	0.01	32.99
<i>Italy</i>	3,714	8.12	41.11
<i>Jamaica</i>	1	0	41.11
<i>Japan</i>	4,564	9.98	51.09
<i>Jordan</i>	1	0	51.09
<i>Kazakhstan</i>	7	0.02	51.11
<i>Kenya</i>	3	0.01	51.11
<i>Latvia</i>	169	0.37	51.48
<i>Lithuania</i>	171	0.37	51.86
<i>Luxembourg</i>	84	0.18	52.04
<i>Malaysia</i>	138	0.3	52.34
<i>Malta</i>	29	0.06	52.41
<i>Mexico</i>	2	0	52.41
<i>Moldova</i>	2	0	52.41
<i>Montenegro</i>	3	0.01	52.42
<i>Netherlands</i>	762	1.67	54.09
<i>New Zealand</i>	2	0	54.09
<i>Nigeria</i>	10	0.02	54.11
<i>Norway</i>	873	1.91	56.02
<i>Pakistan</i>	17	0.04	56.06
<i>Peru</i>	1	0	56.06
<i>Philippines</i>	4	0.01	56.07
<i>Poland</i>	1,152	2.52	58.59
<i>Portugal</i>	702	1.54	60.12
<i>Romania</i>	432	0.94	61.07
<i>Russia</i>	880	1.92	62.99
<i>Serbia</i>	124	0.27	63.26
<i>Singapore</i>	3	0.01	63.27
<i>Slovakia</i>	387	0.85	64.12
<i>Slovenia</i>	133	0.29	64.41
<i>South Africa</i>	4	0.01	64.42
<i>South Korea</i>	585	1.28	65.7
<i>Spain</i>	3,798	8.3	74
<i>Sri Lanka</i>	3	0.01	74.01
<i>Sweden</i>	3,432	7.5	81.51
<i>Switzerland</i>	13	0.03	81.54
<i>Taiwan</i>	9	0.02	81.56
<i>Tanzania</i>	2	0	81.56
<i>Thailand</i>	1	0	81.57
<i>Turkey</i>	7	0.02	81.58
<i>Ukraine</i>	171	0.37	81.96
<i>United Kingdom</i>	7,977	17.44	99.4
<i>United States</i>	245	0.54	99.93
<i>Vietnam</i>	28	0.06	100
<i>Zambia</i>	1	0	100
<i>Zimbabwe</i>	1	0	100
Total	45,732	100	

b. EMNE subs

Country	Freq.	Percent	Cum.
<i>Australia</i>	9	0.42	0.42
<i>Austria</i>	10	0.47	0.89
<i>Bangladesh</i>	2	0.09	0.99
<i>Belgium</i>	27	1.27	2.26
<i>Bolivia</i>	1	0.05	2.3
<i>Bosniaand Herzegovina</i>	4	0.19	2.49
<i>Bulgaria</i>	15	0.7	3.2
<i>Chile</i>	6	0.28	3.48
<i>China</i>	491	23.07	26.55
<i>Colombia</i>	1	0.05	26.6
<i>Croatia</i>	27	1.27	27.87
<i>Czech Republic</i>	38	1.79	29.65
<i>Egypt</i>	2	0.09	29.75
<i>Estonia</i>	3	0.14	29.89
<i>Finland</i>	9	0.42	30.31
<i>France</i>	54	2.54	32.85
<i>Germany</i>	58	2.73	35.57
<i>Greece</i>	4	0.19	35.76
<i>Hong Kong</i>	2	0.09	35.86
<i>Hungary</i>	50	2.35	38.2
<i>India</i>	43	2.02	40.23
<i>Indonesia</i>	10	0.47	40.7
<i>Ireland</i>	3	0.14	40.84
<i>Israel</i>	1	0.05	40.88
<i>Italy</i>	64	3.01	43.89
<i>Japan</i>	4	0.19	44.08
<i>Jordan</i>	1	0.05	44.13
<i>Kazakhstan</i>	1	0.05	44.17
<i>Latvia</i>	4	0.19	44.36
<i>Lithuania</i>	5	0.23	44.6
<i>Luxembourg</i>	2	0.09	44.69
<i>Malaysia</i>	8	0.38	45.07
<i>Namibia</i>	1	0.05	45.11
<i>Netherlands</i>	16	0.75	45.86
<i>Nigeria</i>	4	0.19	46.05
<i>Norway</i>	4	0.19	46.24
<i>Pakistan</i>	6	0.28	46.52
<i>Panama</i>	1	0.05	46.57
<i>Peru</i>	1	0.05	46.62
<i>Philippines</i>	11	0.52	47.13
<i>Poland</i>	229	10.76	57.89
<i>Portugal</i>	17	0.8	58.69
<i>Romania</i>	29	1.36	60.06
<i>Russia</i>	417	19.6	79.65
<i>Serbia</i>	20	0.94	80.59
<i>Slovakia</i>	20	0.94	81.53
<i>Slovenia</i>	8	0.38	81.91
<i>South Africa</i>	1	0.05	81.95
<i>South Korea</i>	12	0.56	82.52
<i>Spain</i>	80	3.76	86.28
<i>Sri Lanka</i>	18	0.85	87.12
<i>Sweden</i>	26	1.22	88.35
<i>Ukraine</i>	12	0.56	88.91
<i>United Kingdom</i>	170	7.99	96.9
<i>United States</i>	4	0.19	97.09
<i>Vietnam</i>	58	2.73	99.81
<i>Zambia</i>	1	0.05	99.86
<i>Zimbabwe</i>	3	0.14	100
Total	2,128	100	

Table 19 - Empirical Chapter 3: Distribution of Subsidiaries by Industry

NAICS 2 Digits Core Codes	NAICS Industry Classification	AMNEs	EMNEs	Total	Percentage	Cumulative
11	Agriculture, Forestry, Fishing and Hunting	271	17	288	0.6%	0.6
21	Mining, Quarrying, and Oil and Gas Extraction	435	47	482	1.0%	1.6
22	Utilities	746	129	875	1.8%	3.4
23	Construction	3070	50	3120	6.5%	10.0
31	Manufacturing	1676	125	1801	3.8%	13.7
32	Manufacturing	4181	270	4451	9.3%	23.0
33	Manufacturing	7858	515	8373	17.5%	40.5
42	Wholesale Trade	9,771	335	10106	21.1%	61.6
44	Retail Trade	1288	53	1341	2.8%	64.4
45	Retail Trade	336	8	344	0.7%	65.2
48	Transportation and Warehousing	1737	97	1834	3.8%	69.0
49	Transportation and Warehousing	248	7	255	0.5%	69.5
51	Information	1506	32	1538	3.2%	72.7
52	Finance and Insurance	433	21	454	0.9%	73.7
53	Real Estate and Rental and Leasing	956	62	1018	2.1%	75.8
54	Professional, Scientific, and Technical Services	4752	152	4904	10.2%	86.1
55	Management of Companies and Enterprises	1,036	26	1062	2.2%	88.3
56	Administrative and Support and Waste Management and Ren	2368	71	2439	5.1%	93.4
61	Educational Services	175	2	177	0.4%	93.7
62	Health Care and Social Assistance	1130	18	1148	2.4%	96.1
71	Arts, Entertainment, and Recreation	253	15	268	0.6%	96.7
72	Accommodation and Food Services	739	41	780	1.6%	98.3
81	Other Services (except Public Administration)	736	34	770	1.6%	99.9
92	Public Administration	31	1	32	0.1%	100.0
Total		45,732	2,128	47,860	100%	

Table 20 - Empirical Chapter 3: Variance Inflation Factors

a. AMNE Subsidiaries

Variable	VIF	1/VIF
GDP per capita	2.1	0.48
Institutional quality	2.02	0.49
Tangible resources	1.84	0.54
Market share	1.73	0.58
Size	1.7	0.59
Capital intensity	1.62	0.62
Industry competitiveness	1.44	0.69
Age	1.14	0.87
Organizational slack	1.13	0.89
Macro-economy	1.11	0.90
Intangible assets	1.01	0.99
Mean VIF	1.53	

b. EMNE Subsidiaries

Variable	VIF	1/VIF
Size	2.12	0.47
Market share	2.05	0.49
Tangible resources	2.04	0.49
Capital intensity	2.01	0.50
Industry competitiveness	1.75	0.57
GDP per capita	1.66	0.60
Institutional quality	1.44	0.70
Macro-economy	1.26	0.79
Organizational slack	1.16	0.86
Age	1.08	0.93
Intangible assets	1.01	0.99
Mean VIF	1.6	

Table 21 - Empirical chapter 3: Correlation Matrix^a

a. Advanced-economy Multinational Enterprise Subsidiaries

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1	ROA	8.205634	13.41076	1											
2	Age	27.97919	20.88029	-0.0514***	1										
3	Size (sales)	213859.2	1411970	-0.0170***	0.0836***	1									
4	Organizational slack	82.39884	143.9173	-0.205***	-0.00178	0.0452***	1								
5	Capital Intensity	58801.63	2.78E+07	-0.00105	-0.00178	-0.00032	0.0012	1							
6	Tangible resources	72413	1839855	-0.0139***	0.0011	0.0103***	0.0103***	0.000288	1						
7	Marketshare	1.634813	7.911443	0.00938***	-0.00687***	0.202***	0.000174	-0.000436	0.00993***	1					
8	Industry competitiveness	0.0921551	0.1781766	0.0016	-0.0620***	0.0173***	-0.0197***	-0.000942	-0.00335	0.432***	1				
9	Macro economy	4.71621	0.8216502	0.0712***	-0.117***	-0.0150***	-0.0742***	-0.000419	0.00413*	0.0504***	0.103***	1			
10	GDP per capita	37501.85	13688.57	-0.0259***	0.180***	0.0328***	0.0679***	0.00107	0.0243***	-0.110***	-0.222***	0.165***	1		
11	Intangible assets (IAs)	-92.01142	46412.25	0.00119	0.00174	0.00000862	-0.000182	0.00000428	0.0000758	0.000375	0.000855	-0.00275	-0.00157	1	
12	Institutional Quality	4.772167	0.8178077	0.0171***	0.217***	0.0263***	0.0372***	-0.000215	0.0109***	-0.0967***	-0.191***	0.162***	0.759***	-0.00114	1

* p<0.05, **p<0.01, ***p<0.001
(observations - 212,261)

a. Emerging-economy Multinational Enterprise Subsidiaries

	Variable	Mean	S.D.	1	2	3	4	5	6	7	8	9	10	11	12
1	ROA	7.284527	13.37043	1											
2	Age	20.17431	1.76E+01	-0.0369***	1										
3	Size (sales)	337987.6	1.84E+06	-0.0154	0.0136	1									
4	Organizational slack	73.0356	1.36E+02	-0.181***	-0.0149	0.0156	1								
5	Capital Intensity	36288.77	3.46E+06	-0.00696	0.00115	-0.00193	0.0311**	1							
6	Tangible resources	4.23E+04	4.16E+05	-0.0277**	-0.0351***	0.0372***	0.0369***	0.0115	1						
7	Marketshare	5.06E+00	16.84061	0.0135	0.0924***	0.158***	-0.0049	-0.00313	0.00642	1					
8	Industry competitiveness	0.1757641	0.2776733	-0.0103	0.0838***	-0.00297	0.0135	0.00155	-0.0148	0.539***	1				
9	Macro economy	5.156598	8.16E-01	0.0242*	-0.217***	0.0530***	-0.145***	0.00443	0.00474	-0.0826***	-0.108***	1			
10	GDP per capita	19072.32	1.49E+04	-0.0823***	0.159***	0.0562***	0.144***	-0.00352	-0.0141	-0.185***	-0.254***	-0.267***	1		
11	Intangible assets (IAs)	1.31275	52.30015	-0.00694	-0.00105	0.00145	0.0121	-0.000271	-0.00671	-0.00263	0.000142	-0.00546	-0.00875	1	
12	Institutional Quality	4.07792	0.7354051	-0.0594***	0.123***	0.0872***	0.0990***	-0.00853	-0.0364***	-0.0943***	-0.199***	-0.0254*	0.695***	-0.0152	1

* p<0.05, **p<0.01, ***p<0.001
(observations - 212,261)

Table 22 - Empirical chapter 3: Regression Results

Method Model Firm Type	AMNE Subsidiaries								EMNE Subsidiaries							
	OLS-FE								OLS-FE							
	M1 AMNE sub	M2 AMNE sub	M3 AMNE sub	M4 AMNE sub	M5 EMNE sub	M6 EMNE sub	M7 EMNE sub	M8 EMNE sub	M1 AMNE sub	M2 AMNE sub	M3 AMNE sub	M4 AMNE sub	M5 EMNE sub	M6 EMNE sub	M7 EMNE sub	M8 EMNE sub
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>																
Age	-0.10**	(0.04)	-0.09**	(0.04)	-0.09**	(0.04)	-0.08**	(0.04)	0.01	(0.16)	-0.02	(0.16)	0.02	(0.15)	-0.00	(0.15)
Size	0.77***	(0.03)	0.76***	(0.03)	0.76***	(0.03)	0.76***	(0.03)	0.56***	(0.09)	0.56***	(0.09)	0.55***	(0.09)	0.55***	(0.09)
Organizational slack	-0.23***	(0.00)	-0.23***	(0.00)	-0.23***	(0.00)	-0.23***	(0.00)	-0.19***	(0.02)	-0.19***	(0.02)	-0.19***	(0.02)	-0.19***	(0.02)
Capital intensity	-0.29***	(0.03)	-0.29***	(0.03)	-0.29***	(0.03)	-0.29***	(0.03)	-0.18**	(0.09)	-0.15*	(0.08)	-0.16*	(0.08)	-0.15*	(0.08)
Tangible resources	-0.08***	(0.01)	-0.09***	(0.01)	-0.09***	(0.01)	-0.09***	(0.01)	-0.08**	(0.03)	-0.10***	(0.03)	-0.10***	(0.03)	-0.10***	(0.03)
Market share	-0.14***	(0.05)	-0.16***	(0.05)	-0.16***	(0.05)	-0.16***	(0.05)	0.03	(0.14)	0.07	(0.14)	0.07	(0.14)	0.08	(0.14)
Industry competitiveness	0.50**	(0.20)	0.55***	(0.19)	0.54***	(0.19)	0.54***	(0.19)	0.76	(0.53)	0.76	(0.53)	0.70	(0.53)	0.72	(0.53)
Macro-economy	-0.46***	(0.08)	-0.45***	(0.08)	-0.42***	(0.08)	-0.41***	(0.08)	0.13	(0.32)	0.18	(0.32)	0.11	(0.32)	0.09	(0.32)
GDP per capita	-0.47***	(0.06)	-0.48***	(0.06)	-0.53***	(0.06)	-0.53***	(0.06)	-0.10	(0.18)	-0.07	(0.18)	-0.24	(0.18)	-0.25	(0.18)
<u>Independent variables</u>																
Intangible Assets (IA)			0.28***	(0.01)	0.28***	(0.01)	-0.01	(0.06)			0.27***	(0.02)	0.27***	(0.02)	-0.84**	(0.34)
Institutional Quality (IQ)					-0.54***	(0.15)	-0.56***	(0.15)					-1.41**	(0.56)	-1.48***	(0.56)
<u>Interaction effects</u>																
IA x IQ							0.13***	(0.03)							0.52***	(0.16)
Constant	3.10***	(0.65)	3.27***	(0.64)	4.88***	(0.77)	4.94***	(0.77)	-1.74	(1.61)	-2.07	(1.59)	2.73	(2.41)	3.06	(2.41)
Observations	243,779		243,779		243,779		243,779		10,189		10,189		10,189		10,189	
R-squared (within/between/overall)	0.07/0.04/0.04		0.10/0.05/0.05		0.10/0.05/0.04		0.10/0.05/0.04		0.10/0.04/0.05		0.12/0.05/0.06		0.12/0.06/0.07		0.13/0.06/0.07	
Number of firms	45,732		45,732		45,732		45,732		2,128		2,128		2,128		2,128	
year dummies	Included		Included		Included		Included		Included		Included		Included		Included	

Robust standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$

4.3 Estimation Method

Table 11 represents the descriptive statistics and correlation matrix for both AMNE subsidiaries (**a**) and EMNE subsidiaries (**b**). The correlation between variables are within acceptable levels, as low correlation neither constrain good fit nor affect inferences about the dependent variable (Neter et al., 1996). We mean-centred the variables in the interaction term to avoid issues pertaining to multicollinearity and enhance the interpretability of the interactions (Aiken et al., 1991). Following previous studies (Kang, 2018, Dezsö and Ross, 2012), to detect multicollinearity, a multiple regression analysis was performed to estimate variance inflation factors. Table 12 indicate that, VIFS values for all independent variables are within the cut-off point off 10 (Kutner et al., 2005, Neter et al., 1996, Bowerman et al., 2005). thus, multicollinearity is not a significant issue in our study.

To select between using Generalized Least Square-Random Effects (RE) and Ordinary Least Square-Fixed Effects (FE), we used the Hausman specification test (Hausman, 1978) to determine the use of Random Effects (RE) or Fixed Effects (FE). The Hausman-specification test determines whether the unique errors are correlated with the regressors, and the null hypothesis is they are not. For the sample containing AMNE subsidiaries, the Hausman tests returned with a $\chi^2 = 3988.17$ and a *p-value* of 0.00, which is significant at $p \leq 0.05$. For the sample containing EMNE subsidiaries, the Hausman test returned with a $\chi^2 = 280.29$ and *p-value* of 0.00, which is significant at $p \leq 0.05$. Thus, FE estimation would be an appropriate estimation of the coefficients (Wooldridge, 2010). We also employ alternative estimation methods (i.e., Generalized Least Square and Multilevel Mixed models) to check robustness of our research findings .

5. Results

Table 22 represents the regression results for AMNE and EMNE subsidiaries. Models 1 to 8 reports group clustered Huber-White standard errors that are robust for heteroskedasticity and intra-group correlation of error terms (Wooldridge, 2010). Models 1 to 4 capture regression results of AMNE subsidiaries, and Models 4 to 8 capture regression results of EMNE subsidiaries. Models 1 and 5 include only the direct effects of control variables. Model 2 and 6 includes the direct effects of intangible assets and control variables. Models 3 and 7, we introduce the direct effects of the host-country institutional quality along with intangible assets and the control variables. Model 4 and 8, we include the interaction effects between intangible asset and the host-country institutional quality alongside the independent variables and the control variables.

Hypothesis 3a predicts that, *“The performance enhancing effects of subsidiary intangible assets are greater for AMNEs than they for EMNEs”*. Models 2 and 6 imply that the direct effects of intangible assets on subsidiary performance is positive and statistically significant for both AMNE subsidiaries and EMNE subsidiaries ($\beta = 0.28, p \leq 0.01$; $\beta = 0.27, p \leq 0.01$, respectively). The results also show that, the direct of effects of intangible assets enhancing subsidiary performance are stronger for AMNE subsidiaries than they are for EMNE subsidiaries. Therefore, supporting hypothesis 3a. Hypothesis 3b predicts that, *the greater the level of host-country institutional quality, the stronger the performance enhancing effects of intangible assets are for EMNE subsidiaries than AMNE subsidiaries*. Models 4 and 8 indicate that, the interaction effects between subsidiary intangible assets and host-country institutional quality are positive and statistically significant for both AMNE subsidiaries and EMNE subsidiaries ($\beta = 0.13, p \leq 0.01$; $\beta = 0.52, p \leq 0.01$, respectively), and the interaction effects are greater

for EMNE subsidiary intangible assets than they are for AMNE subsidiary intangible assets. This suggests that the performance enhancing effects of intangible assets are greater for EMNE subsidiaries than AMNE subsidiaries in host countries with higher levels of host-country institutional quality. Thus, supporting hypothesis 3b.

Figure 6a and Figure 6b depicts the marginal effects of intangible assets on subsidiary performance at different levels of host-country institutional quality, for both AMNE and EMNE subsidiaries. The “Y-axes” indicate the marginal effects of intangible assets on firm performance, and the “X-axes” indicates the level of host-country institutional quality. Both figures 6a and 6b includes 95% confidence intervals. Figures 6a and 6b predicts that both AMNE and EMNE subsidiary intangible assets are positively moderated by the host-country institutional quality, and the moderation effect is greater for EMNE subsidiaries (6b) than they are for AMNE subsidiaries (6a). This suggests that at higher level of institutional quality, the contribution of EMNE subsidiary intangible assets influencing performance is greater for EMNE subsidiaries than they are for AMNE subsidiaries. Interestingly, the confidence intervals indicate that at lower levels of host-country institutional quality, the performance enhancing effects of subsidiary intangible assets are statistically significant for AMNE subsidiary intangible assets (6a), but the performance enhancing effects of EMNE subsidiary intangible assets statistically insignificant (6b) at lower levels of host-country institutional quality. Thus, suggesting that, AMNE subsidiary intangible assets are likely to be more resilient at lower levels of host-country institutional quality than EMNE subsidiary intangible assets. Whereas EMNEs subsidiaries loses its statistical significance at lower levels of host-country institutional quality. Suggesting that EMNE intangible assets require a certain level of host-country institutional quality to benefit from their intangible assets. This suggest that, at lower levels of institutional quality AMNE subsidiaries can rely on internalization advantages to overcome external market deficiencies, whereas EMNE subsidiary intangible assets are

likely to require host-countries with efficient institutions that provide access to external complementary assets to benefit from their intangible assets. This is in line with the notion that EMNEs aggressively expand to countries with efficient institutions to benefit from knowledge assets and that access to complementary market resources that are not available in their home country.

Figure 6 - Empirical Chapter 3: Marginal Effects of AMNE & EMNE Subsidiary Intangible Assets

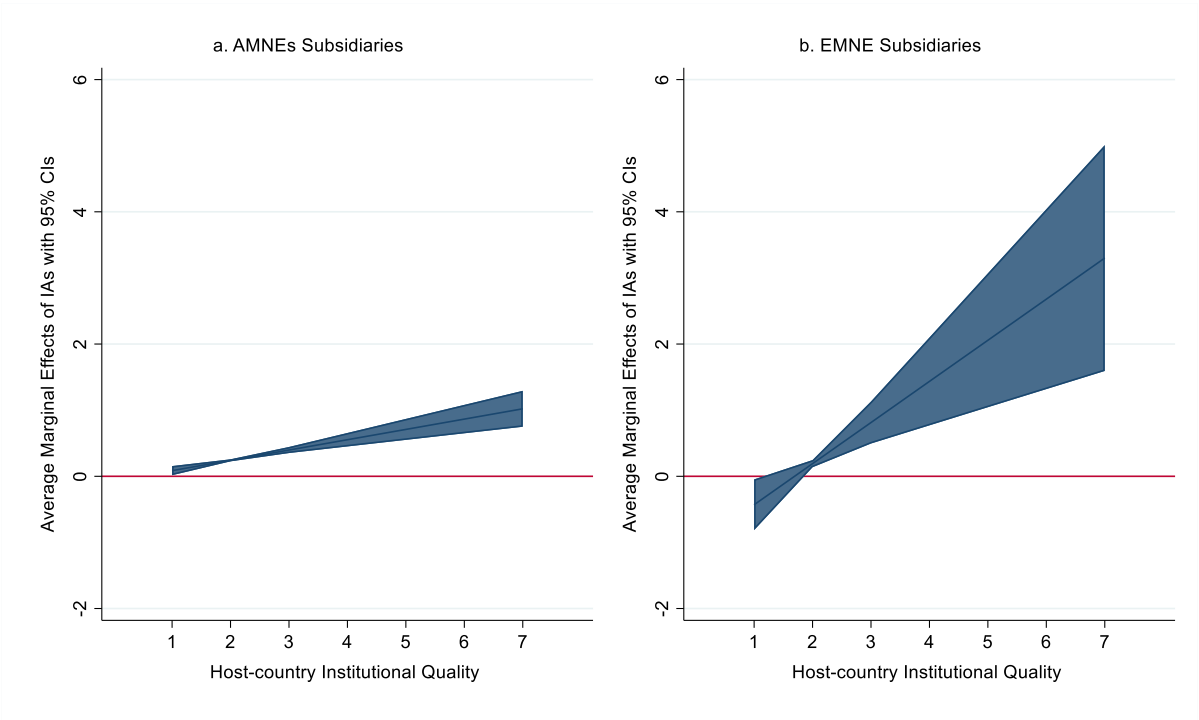


Table 23 - Empirical Chapter 3: Robustness Analysis

	Without Control variables		Alternative Performance measure		Alternative Performance measure		Sensitivity Analysis													
									Random Effects				Mixed Effects							
Method	OLS-FE	OLS-FE	OLS-FE	OLS-FE	OLS-FE	OLS-FE	OLS-FE	OLS-FE	GLS-RE	GLS-RE					Mixed	Mixed				
Model	M7	M8	M9	M10	M11	M12	M13	M14	M15	M16										
Firm Type	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub	AMNE sub	EMNE sub				
Dependent variable	ROA		ROA		ROE		ROE		Profitability		Profitability		ROA		ROA					
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.				
Control variables																				
Age					-0.23***	(0.06)	-0.07	(0.27)	-0.13***	(0.04)	-0.03	(0.15)	0.03***	(0.01)	0.11**	(0.05)	0.04***	(0.01)	0.08*	(0.04)
Size					1.09***	(0.04)	0.81***	(0.12)	0.77***	(0.03)	0.57***	(0.08)	0.21***	(0.01)	0.17***	(0.03)	0.21***	(0.01)	0.17***	(0.02)
Organizational slack					-0.23***	(0.01)	-0.19***	(0.03)	-0.19***	(0.00)	-0.15***	(0.02)	-0.23***	(0.00)	-0.18***	(0.01)	-0.24***	(0.00)	-0.18***	(0.01)
Capital intensity					-0.23***	(0.03)	-0.06	(0.11)	-0.37***	(0.03)	-0.21**	(0.09)	-0.42***	(0.01)	-0.42***	(0.05)	-0.40***	(0.01)	-0.40***	(0.03)
Tangible resources					-0.14***	(0.01)	-0.14***	(0.04)	-0.09***	(0.01)	-0.08***	(0.03)	-0.06***	(0.00)	-0.06***	(0.02)	-0.05***	(0.00)	-0.05***	(0.02)
Market share					-0.19***	(0.07)	0.17	(0.19)	-0.14***	(0.05)	0.15	(0.13)	-0.09***	(0.01)	0.02	(0.04)	-0.08***	(0.01)	-0.01	(0.04)
Industry competitiveness					0.63**	(0.26)	0.89	(0.74)	0.48***	(0.18)	1.09**	(0.55)	-0.04	(0.05)	0.00	(0.17)	-0.03	(0.05)	-0.10	(0.16)
Macro-economy					-0.56***	(0.12)	0.18	(0.46)	-0.39***	(0.08)	-0.21	(0.31)	-0.33***	(0.04)	0.15	(0.21)	-0.37***	(0.07)	0.40*	(0.22)
GDP per capita					-0.68***	(0.08)	-0.47*	(0.26)	-0.54***	(0.06)	-0.26	(0.17)	-0.14***	(0.02)	-0.15***	(0.05)	-0.16***	(0.03)	-0.18**	(0.07)
Independent variables																				
Intangible Assets (IA)	-0.01	(0.06)	-0.85**	(0.35)	0.27***	(0.10)	-1.26**	(0.54)	0.00	(0.06)	-0.73**	(0.37)	0.02	(0.06)	-0.90***	(0.31)	0.02	(0.04)	-0.86***	(0.24)
Institutional Quality (IQ)	-0.48***	(0.15)	-2.43***	(0.56)	-0.78***	(0.20)	-2.07**	(0.80)	-0.44***	(0.14)	-1.61***	(0.54)	0.38***	(0.06)	-0.51**	(0.25)	-0.44***	(0.10)	-1.11***	(0.30)
Interaction effects																				
IA x IQ	0.13***	(0.03)	0.53***	(0.17)	0.10**	(0.04)	0.83***	(0.25)	0.11***	(0.03)	0.45**	(0.18)	0.12***	(0.03)	0.55***	(0.15)	0.12***	(0.02)	0.53***	(0.11)
Constant	2.93***	(0.33)	6.79***	(1.15)	5.07***	(1.05)	3.97	(3.46)	5.08***	(0.75)	3.92*	(2.33)	4.54***	(0.27)	3.11***	(1.12)	6.54***	(0.45)	4.25***	(1.44)
Observations	243,779		10,189		243,141		10,169		243,753		10,189		243,779		10,189		243,779		10,189	
R-squared (within/between/overall)	0.03/0.01/0.02		0.04/0.02/0.02		0.09/0.04/0.04		0.012/0.05/0.06		0.10/0.05/0.04		0.13/0.05/0.06		0.09/0.013/0.11		0.12/0.016/0.15					
Number of subsidiaries	45,732		2,128		45,652		2,127		45,730		2,128		45,732		2,128		45,732		2,128	
Number of parent firms																	20,367		1,093	
Number of countries																	76		58	
Wald X ²																	25,827.57		1431.28	
χ ²																	0.00		0.00	
year dummies	Included		Included		Included		Included		Included		Included		Included		Included		Included		Included	
Industry dummies													Included		Included		Included		Included	

Table 24 - Empirical Chapter 3: Robustness Analysis (Alternative Institutional Measures)

Method	GCI institutions (PCA)				GCI private Institutions				GCI public Institutions				Fraser Institute				World Governance Indicators				Heritage Foundation			
	OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE		OLS-FE	
Model	M17		M18		M19		M20		M21		M22		M19		M20		M21		M22		M23		M24	
Firm Type	AMNE sub		EMNE sub		AMNE sub		EMNE sub		AMNE sub		EMNE sub		AMNE sub		EMNE sub		AMNE sub		EMNE sub		AMNE sub		EMNE sub	
Dependent variable	ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA		ROA	
	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.	.Coef	S.D.
<u>Control variables</u>																								
Age	-0.14***	(0.05)	-0.02	(0.16)	-0.09**	(0.04)	-0.02	(0.16)	0.00	(0.15)	-0.09**	(0.04)	-0.04	(0.16)	-0.09**	(0.04)	-0.04	(0.16)	-0.10**	(0.04)	-0.09	(0.16)		
Size	0.82***	(0.03)	0.56***	(0.09)	0.76***	(0.03)	0.55***	(0.09)	0.76***	(0.03)	0.55***	(0.09)	0.76***	(0.03)	0.57***	(0.09)	0.76***	(0.03)	0.57***	(0.09)	0.76***	(0.03)	0.57***	(0.09)
Organizational slack	-0.24***	(0.01)	-0.18***	(0.02)	-0.23***	(0.00)	-0.19***	(0.02)	-0.23***	(0.00)	-0.19***	(0.02)	0.23***	(0.00)	-0.19***	(0.02)	-0.23***	(0.00)	-0.19***	(0.02)	-0.23***	(0.00)	-0.19***	(0.02)
Capital intensity	-0.24***	(0.03)	-0.11	(0.09)	-0.29***	(0.03)	-0.16*	(0.08)	-0.29***	(0.03)	-0.15*	(0.08)	0.29***	(0.03)	-0.16*	(0.08)	-0.28***	(0.03)	-0.15*	(0.08)	-0.29***	(0.03)	-0.16*	(0.08)
Tangible resources	-0.09***	(0.01)	-0.09***	(0.04)	-0.09***	(0.01)	-0.09***	(0.03)	-0.09***	(0.01)	-0.10***	(0.03)	0.09***	(0.01)	-0.09***	(0.03)	-0.10***	(0.01)	-0.10***	(0.03)	-0.09***	(0.01)	-0.09***	(0.03)
Market share	-0.16***	(0.06)	0.11	(0.14)	-0.16***	(0.05)	0.08	(0.14)	-0.16***	(0.05)	0.08	(0.14)	0.16***	(0.05)	0.05	(0.14)	-0.15***	(0.05)	0.06	(0.14)	-0.16***	(0.05)	0.06	(0.14)
Industry competitiveness	0.67***	(0.21)	1.19**	(0.60)	0.55***	(0.19)	0.73	(0.53)	0.54***	(0.19)	0.72	(0.53)	0.55***	(0.19)	0.78	(0.54)	0.54***	(0.19)	0.72	(0.53)	0.57***	(0.19)	0.81	(0.54)
Macro-economy	-0.37***	(0.09)	0.22	(0.35)	-0.44***	(0.08)	0.21	(0.32)	-0.42***	(0.08)	0.06	(0.32)	0.45***	(0.08)	0.09	(0.32)	-0.36***	(0.08)	0.13	(0.32)	-0.29***	(0.09)	0.35	(0.32)
GDP per capita	-0.64***	(0.07)	-0.25	(0.19)	-0.50***	(0.06)	-0.29	(0.19)	-0.52***	(0.06)	-0.22	(0.18)	0.48***	(0.06)	-0.04	(0.18)	-0.42***	(0.06)	-0.04	(0.18)	-0.48***	(0.06)	-0.02	(0.18)
<u>Independent variables</u>																								
Intangible Assets (IA)	0.28***	(0.01)	0.35***	(0.04)	-0.02	(0.07)	-1.38***	(0.41)	-0.00	(0.06)	-0.66**	(0.31)	-0.84**	(0.37)	-2.55***	(0.57)	0.28***	(0.01)	0.41***	(0.04)	0.28***	(0.01)	0.37***	(0.03)
Institutional Quality (IQ)	-0.10***	(0.03)	-0.50**	(0.20)	-0.14	(0.16)	-1.46**	(0.59)	-0.59***	(0.13)	-1.35***	-0.52	0.01	(0.41)	-4.15**	(1.71)	-0.43***	(0.04)	-1.09***	(0.25)	-0.13***	(0.02)	-0.43***	(0.13)
<u>Interaction effects</u>																								
IA x IQ	0.02***	(0.00)	0.10***	(0.03)	0.13***	(0.03)	0.76***	(0.19)	0.13***	(0.03)	0.44***	(0.15)	0.41***	(0.13)	1.06***	(0.22)	0.03***	(0.01)	0.16***	(0.03)	0.06***	(0.01)	0.12***	(0.02)
Constant	4.13***	(0.70)	-1.34	(1.65)	3.73***	(0.82)	3.29	(2.60)	4.93***	(0.74)	2.50	(2.29)	3.24***	(1.22)	8.61*	(4.47)	2.35***	(0.64)	-3.50**	(1.63)	2.87***	(0.64)	-3.27**	(1.65)
Observations	206,811		8,483		243,779		10,189		243,779		10,189		243,779		10,189		243,779		10,189		243,779		10,189	
R-squared (within/between/overall)	0.10/0.04/0.04		0.12/0.05/0.05		0.10/0.05/0.05		0.13/0.06/0.07		0.10/0.05/0.04		0.12/0.06/0.07		0.10/0.05/0.05		0.13/0.05/0.06		0.10/0.04/0.04		0.13/0.05/0.06		0.10/0.05/0.05		0.13/0.05/0.06	
Number of subsidiaries	44,405		2,036		45,732		2,128		45,732		2,128		45,732		2,128		45,732		2,128		45,732		2,128	
year dummies	Included		Included		Included		Included		Included		Included		Included		Included		Included		Included		Included		Included	

5.1 Robustness Tests and Additional Analysis

First, in line with previous studies (Glaser et al., 2016, Benischke et al., 2019), we performed an identical analysis without the use of any control variables. Running the regressions without the use of any control variables allows us to better understand the influence of control variable on the relationship between independent and dependent variables (Glaser et al., 2016, Becker et al., 2016). Models 7 and 8 indicate that our main results were unaffected by the inclusion of control variables, thus supporting the validity of our findings. Second, we investigated alternative performance measures (return on equity, ROE and profitability) as our dependent variable. Models 9 to 12 indicate the analysis generated similar results to those generate in Table 13. Third, to examine whether our findings are influenced by the weights given to the component of institutional quality by the WEF (Schwab, 2017), we conducted a principal component analysis and estimated our model using the first principal component. Models 17 and 18 are consistent with our initial findings. In addition, we use WEF disaggregated institutional quality measures of private institutions (models 19 and 20) and public institutions (model 21 and 22) and find that the results are consistent with the findings in Table 13.

To confirm that our results are not the outcome of a specific way of institutional quality, we replaced the WEF GCI scores that measure institutional quality with the Fraser Institute Economic Freedom Index overall score (Models 19 and 20), in line with previous studies (van Hoorn and Maseland, 2016, Ngobo and Fouda, 2012, Ramasamy et al., 2012) we use the World Banks' World Governance Indicators (models 21 and 22) and performed a principal component analysis on the six institutional components (Voice and Accountability, Political Stability, Government Effectiveness, Regulatory Quality, Rule of Law, and Control of Corruption) and estimated the models using the first principal component as a proxy to institutional quality. In addition, as in previous studies (Kang and Jiang, 2012, Kafourous and Aliyev,

2016a), we measure institutional quality by using the 10 components (Business freedom, Financial freedom, Government integrity, government spending, investment freedom, Labour freedom, Monetary freedom, property rights, Tax burden, and Trade freedom) from the World Heritage Foundation's the Index of Economic Freedom (models 23 and 24), and calculated institutional quality by performing a principal component analysis and using the first component. Models 19 to 24 indicate that the findings corroborate with our initial results in Table 13.

6. Discussions and Conclusions

The main impetus of empirical chapter three is to examine the influence of host-country institutions on the performance enhancing effects of intangible assets between AMNE subsidiaries and EMNE subsidiaries. We show that the performance disparity between AMNE and EMNE subsidiaries are best explained by considering the influence of host-country institutional quality. The empirical analysis consisting of 253,968 observations (243,779 observation for AMNE subsidiaries and 10,189 observations for EMNE subsidiaries) from 79 countries for the period of 2011-2017, challenges the assumption that host-country influence subsidiaries uniformly. First, we contribute to the institution-based view (IBV) (Peng et al., 2008, Peng, 2002, Peng, 2004b, Peng et al., 2009). Our study extends the view that the effects of institutions on firm performance are not homogenous (Kafouros and Aliyev, 2016b, Kafouros et al., 2021), and the outcomes of firm resources is contingent on the institutional context in which they are utilized (Banalieva et al., 2018, Chacar et al., 2010, Cuervo-Cazurra et al., 2018b, Zhu et al., 2019, Estrin et al., 2018).

Particularly, we examined the relationship between the performance enhancing effects of subsidiary intangible assets and the level of host-country institutional quality and argue that the level of host-country institutional quality influence AMNE and EMNE subsidiary intangible assets in different ways. Our analysis show that at higher levels of host-country institutional quality, the performance enhancing effects of both AMNE and EMNE intangible assets increase, but the performance enhancing effects of intangible assets were stronger for EMNE subsidiaries than they were for AMNE subsidiaries. Extant literature presumes that, on average EMNE are better at adapting to turbulent institutional settings (Cuervo-Cazurra and Ramamurti, 2017, Cuervo-Cazurra and Genc, 2008b), our analysis suggests that at lower levels of host-country institutional quality, the performance enhancing effects of intangible assets loses its statistical significant. Whereas the results indicated that AMNE intangible assets were more resilient in enhancing firm performance at lower levels of home-country institutional quality. Thus, we contribute towards institutions studies on institutions (Peng, 2002, Peng et al., 2008, Peng et al., 2009, Peng et al., 2017) by explaining why the nature of the relationship between home-country institutional quality and the performance enhancing effects of intangible assets vary between different types of firms (i.e., AMNE versus EMNE subsidiaries).

In addition, our analysis help us further our understanding on why host-country institutions matter to different types of subsidiaries. Because countries with efficient institutions provide businesses with the necessary background conditions to reduce uncertainty and provide the required safeguards to access complementary resources from the host-country external environment. Therefore, increase in the level of host-country institutional quality would be conducive for subsidiaries to engage in the accumulation, bundling, and exploitation of their intangible assets. For instance, better access to complementary resources would enable firms to enhance the firm's ability to accumulate new intangible assets and engage in bundling existing intangible assets to enhance the longevity of value creation protentional of

their existing intangible assets. This is reflected in our analysis as the performance enhancing effects of subsidiary intangible assets are positive for both AMNE and EMNE intangible assets. Intriguingly, the performance enhancing effects of subsidiary intangible assets are greater for EMNE subsidiaries than they for AMNE subsidiaries with the increase in the levels of host-country institutional quality. This could be attributed differences in subsidiary mandates between AMNE and EMNE subsidiaries. For instance, on average EMNE subsidiaries utilize an asset seeking strategy (Dunning, 1993, Figueiredo, 2011, Awate et al., 2012, Awate et al., 2014) to access superior intangible when expanding into host-countries with efficient institutions (Williamson and Raman, 2013, Kedia et al., 2012, He et al., 2018).

Whereas AMNE subsidiaries are likely to expand into countries with efficient institutions with efficient market mechanisms that provide them with better access to complementary resources (Khanna and Rivkin, 2001), reduces costs (Miller and Eden, 2006, Meyer et al., 2009b), and safeguard their intangible assets (Teece, 1996, Teece, 2006, Cohen and Levinthal, 2000). In addition, we found that the performance enhancing effects of AMNE subsidiary intangible assets were more resilient in countries with lower levels of host-country institutional quality. This could be attributed to the internalization advantages of AMNEs, as the use of internalization advantages are greater in countries with inefficient institutions (Gaur et al., 2019b), as this would prevent leakages and lower risks of property rights infringements (Buckley and Casson, 2009b, Denekamp, 1995, Rugman and Verbeke, 2003). Whereas EMNE subsidiaries were likely to require a certain level of host-country institutional quality to utilize their intangible assets to enhance performance. Thus, EMNE subsidiaries are likely to perform better in countries with efficient institutions, due to their pursuit of catching up and competitive with established AMNEs. In addition, efficient institutions would provide their subsidiaries to access better market resources (Hennart, 2009, Rugman and Verbeke, 2001, Galunic and Rodan, 1998).

This study also compliments existing studies that examine subsidiary's evolution (Birkinshaw and Hood, 1998a, Birkinshaw, 1997), mandate changes (Cantwell and Mudambi, 2005a, Mudambi and Navarra, 2004), subsidiary-specific advantages (Rugman and Verbeke, 2001) but does not examine the relationship between subsidiary-specific advantages (i.e. intangible assets) and the institutional influence (the level of institutional quality) on subsidiary-specific advantages . We theorize and demonstrate that the utilization (i.e., accumulation, bundling, and exploitation) of intangible assets could be influenced by the level of host-country institutional quality, and the influence of institutions vary between AMNE subsidiaries and EMNE subsidiaries. Thus, allowing us to further our understanding on subsidiary performance variation between firms operating in similar host-country institutional settings, and as to why the performance enhancing effects of intangible assets could vary between AMNE and EMNE subsidiaries.

Furthermore, we address the need for more nuanced understanding on institutions and their influence on firm performance (Earl and Michailova, 2021) and build on the studies that examine the influence of host-country institutions on firm performance (Meyer et al., 2011, Ferraris, 2014, Gaur et al., 2019b, Kafouros and Aliyev, 2016b, Kafouros and Aliyev, 2016a). First, we do so by examining the influence of host-country institutions beyond emerging economies, as to the best of our knowledge, there are no studies explicitly comparing the performance enhancing effects of foreign subsidiary intangible assets between AMNE and EMNE subsidiaries with relation to host-country institutional quality.

6.1 Limitations and Future Research

First, the utilization (i.e., accumulation, bundling, and exploitation) of intangible assets are empirically indistinguishable, as our models do not capture how each of these different elements are influenced by the level of host-institutional quality. Second, we use a composite measure to proxy for institutional quality dependent on multiple surveys and datasets. Even though the validity of the datasets have been established in previous empirical studies (Wan and Hoskisson, 2003, Kafouros and Aliyev, 2016a, Kafouros and Aliyev, 2016b), it is a given that surveys and data might contain sampling and measurement biases (Chan et al., 2008). Third, the measure of institutions is an aggregate measure at country level and does not take into consideration the variations within regions of a country (Ma et al., 2012, Yi et al., 2015, Wang et al., 2020, Wang et al., 2012b).

7. General Conclusion

In today's international business environment, both firm-specific resources and the institutional contexts in which these resources are utilized remain integral in driving firm performance. The following section would be a summary of all the key findings from the three previous empirical chapters. Firstly, we examine the influence of home-country institutions on the performance enhancing effects of intangible assets between multinational enterprises versus national enterprises. We indicate that performance heterogeneity between multinational enterprises and national enterprises are likely to be influenced by the interaction effect between intangible assets and the home-country institutions. First, we contribute international business literature that examines home-country effects on multinational enterprise and national enterprise performance (Cuervo-Cazurra et al., 2018b, Wan and Hoskisson, 2003, Hawawini et al., 2004, Tan and Chintakananda, 2016, Marano et al., 2016, Estrin et al., 2018,

Cuervo-Cazurra et al., 2018a, Cuervo-Cazurra and Dau, 2009, Banalieva et al., 2018, Chari and Banalieva, 2015). We theorize and empirically support that, the performance enhancing effects of intangible assets are influenced by the vertical differences in the level of home-country institutions. Our findings complement the wider international business literature examining the role of home country institutional characteristics on firm performance (Cuervo-Cazurra et al., 2018b, Wan and Hoskisson, 2003, Hawawini et al., 2004, Tan and Chintakananda, 2016, Marano et al., 2016, Estrin et al., 2018, Cuervo-Cazurra et al., 2018a, Cuervo-Cazurra and Dau, 2009, Banalieva et al., 2018, Chari and Banalieva, 2015). Our study advances this research stream by theorizing and empirically supporting that the, the vertical difference in home-country institutional quality is likely to influence a firm's ability to utilize their intangible assets to enhance performance. In addition, we theorize and empirically indicate that the influence of home country institutions on firm performance is not homogenous but differ between multinational enterprises and national enterprises.

Second, we contribute to the institution-based view (et al., et al., . Our study extends the narrative that the effects of intuitions on performance are not homogenous and performance heterogeneity is an outcome of both intangible assets and the institutional context in which they are utilized. Particularly, we find that the influence of home-country institutions on the performance enhancing effects of intangible assets differ between multinational enterprises and national enterprise. Our findings indicate that, the performance enhancing effects of intangible assets of both multinational and national enterprise performance are positively influenced in countries with stronger levels of home-country institutional quality, yet the positive effects are stronger for multinational enterprises than they are for national enterprises. However, we find that national enterprise intangible assets are more resilient in enhancing firm performance in home-countries with lower levels of institutional quality than multinational enterprise intangible assets. Therefore, the findings align with the concept that, value creation from firm resources is not autonomous and does not guarantee competitive advantage (Mahoney and Pandian, 1992, Peteraf, 1993a, Barney and Arikan, 2001, Sirmon et al., 2007).

Third, we contribute towards international business literature that examines performance variation between AMNEs and EMNEs. We address the need for studies comparing AMNE and EMNE (Ramamurti and Williamson, 2019, Ramamurti and Singh, 2009a, Ramamurti, 2012, Nuruzzaman et al., 2019). Our study finds that, the performance enhancing effects of intangible assets are positive and significant for both AMNEs and EMNEs, yet the direct effects of intangible assets influencing firm performance were stronger for EMNEs than they were for AMNEs. This can be attributed to, EMNEs need to catch up with AMNEs has led to EMNEs actively seeking strategic assets via their subsidiaries in advanced economies with efficient institutions to engage in competence creation (Cantwell and Mudambi, 2005a, Cantwell and Mudambi, 2011) and internalize accumulated knowledge within the MNE network to enhance parent firm performance (Rugman and Verbeke, 1992, Rugman and Verbeke, 2001, Buckley, 2018, Buckley and Casson, 2019). In doing so, our findings challenge the assumption that, AMNEs possess superior intangible assets than EMNEs and is reflected by their superior performance vis-à-vis EMNEs (Madhok and Keyhani, 2012, Lall et al., 1983, Wells, 1983, Awate et al., 2012, Awate et al., 2014).

Fourth, we contribute to the institution-based view of the firm (Peng, 2002, Peng et al., 2009) by suggesting that that performance outcomes of MNEs are not identical for firms operating in similar host-country institutions, but vary between different types of firms. In this instance, between AMNEs and EMNEs. In addition, we contribute towards literature on institutions (Peng et al., 2009, Peng, 2002, Meyer et al., 2011). Particularly, we observed that performance variations between multinational enterprises versus national enterprises, AMNEs versus EMNEs, and AMNE subsidiaries versus EMNE subsidiaries. We argue that institutions does not influence firm homogenously, instead institutions along with firm-resources contribute towards performance heterogeneity between firms.

Fifth, we contribute towards subsidiary-level literature examining subsidiary evolution and mandate changes (Birkinshaw and Hood, 1998c, Birkinshaw, 1997, Birkinshaw et al., 1998, Rugman and Verbeke, 2001, Cantwell and Mudambi, 2005b, Frost et al., 2002) and distinguishes the significance of the institutional context in which firms utilize their resources (Oliver, 1997, Peng, 2002). Our results indicate that, EMNEs subsidiaries are more efficient in utilizing their intangible assets in countries with higher levels of institutional quality. which could lead to premature asset erosion in host-countries with lower levels of institutional quality. Whereas AMNE subsidiaries are likely to expand into countries with efficient institutions with efficient market mechanisms that provide them with better access to complementary resources (Khanna and Rivkin, 2001), reduces costs (Miller and Eden, 2006, Meyer et al., 2009b), and safeguard their intangible assets (Teece, 1996, Teece, 2006, Cohen and Levinthal, 2000). In addition, we found that the performance enhancing effects of AMNE subsidiary intangible assets were more resilient in countries with lower levels of host-country institutional quality. This could be attributed to the internalization advantages of AMNEs, as the use of internalization advantages are greater in countries with inefficient institutions (Gaur et al., 2019b), as this would prevent leakages and lower risks of property rights infringements (Buckley and Casson, 2009b, Denekamp, 1995, Rugman and Verbeke, 2003). Whereas EMNE subsidiaries were likely to require a certain to levels of host-country institutional quality to utilize their intangible assets to enhance performance. Thus, EMNE subsidiaries are likely to perform better in countries with efficient institutions, due to their pursuit of catching up and competitive with established AMNEs. In addition, efficient institutions would provide their subsidiaries to access better market resources (Hennart, 2009, Rugman and Verbeke, 2001, Galunic and Rodan, 1998).

The overall contribution of this thesis is towards international business literature and institutional-based view of the firm. IBV (Peng, 2002, Peng et al., 2009) highlights the importance of integrating a RBV and Institutional perspective to examine performance variation between different types of firms (Peng et al., 2009, Peng, 2002, Oliver, 1997). We do so by examining the dynamic relationship between intangible assets, institutions, and firm performance from AMNEs vs. NEs in their home-country perspective; AMNEs vs. EMNEs from a host-country perspective; AMNE subsidiaries vs. EMNE subsidiaries from a host-country perspective.

7.1 Limitations

Firstly, the measurement of institutional quality is reliant on multiple surveys and datasets. It is possible that surveys and data might contain sampling and measurement biases (Chan et al., 2008, Kafourous and Aliyev, 2016b). Secondly, we acknowledge that future studies should consider other firm-specific resources and external environmental actors, and other idiosyncrasies that would influence firm performance. Although we theorize that home-country institutional quality is a significant moderator in the context of our study. We acknowledge that investigation of other external actors in the markets (i.e., R&D institutes, universities, sub-national institutions) were beyond the scope of these studies. Future studies can incorporate and control for different types of intangible assets (i.e., patents etc.) and potential transfers of knowledge and assets to and from their network of subsidiaries and measure institutional quality via OPR regimes. Although, we demonstrate that intangible assets are influenced by different types of home-location institutions, we do not capture the effects of MNEs embeddedness in multiple institutional contexts simultaneously.

Thirdly, studies can incorporate and control for different types of intangible assets (i.e., patents, managerial capabilities, etc.) and potential transfers of intangible assets such as the role of firm capabilities, technology and R&D investments augmenting MNE performance. Although, we demonstrate that intangible assets are influenced by different types of host-country institutions, we do not capture both home and host country institutional simultaneously for MNEs (Cantwell and Mudambi, 2005b). Finally, our conclusions are restricted by the size of the sample, the availability of data, and time period selected

8. References

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Table 25 - WEF Institutional Quality Indicators

Institutional Quality		Weight
A. Public Institutions		75%
1.	<i>Property Rights</i>	20%
1.01	Property rights	
1.02	Intellectual property protection	
2.	<i>Ethics and Corruption</i>	20%
1.03	Diversion of public funds	
1.04	Public trust in politicians	
1.05	Irregular payments and bribes	
3.	<i>Undue Influence</i>	20%
1.06	Judicial independence	
1.07	Favouritism in decisions of government officials	
4.	<i>Government Efficiency</i>	20%
1.08	Wastefulness of government spending	
1.09	Burden of government regulation	
1.10	Efficiency of legal framework in settling disputes	
1.11	Efficiency of legal framework in challenging regulations disputes	
1.12	Transparency of government policymaking	
1.13	Provision of government services for improved business performance	
5.	<i>Security</i>	20%
1.14	Business cost of terrorism	
1.15	Business cost of crime and violence	
1.16	Organized crime	
1.17	Reliability of police services	
B. Private Institutions		25%
1.	<i>Corporate Ethics</i>	50%
1.18	Ethical behaviour of firms	
2.	<i>Accountability</i>	50%
1.19	Strength of auditing and reporting standards	
1.20	Efficacy of corporate boards	
1.21	Protection of minority shareholders' interest	
1.22	Strength of investor protection	

Source: WEF Global Competitive Indices

