MNE Location Strategy and Global Cities

Exploring the role of liability of foreignness on BRIC MNEs location strategy in global cities

Master Thesis M.Sc. Economics and Business Administration – International Business Studies Copenhagen Business School - May 17th 2016

> Authors Nargis Amini Christina Myhre Lystad

Supervisor Professor Bersant Hobdari Department of International Economics and Management

> **Number of pages and characters** 109 standard pages and 210,427 characters



Abstract

Location is described as one of the central questions that define international business research. Yet, the notion of global cities and their leading role in the geographic space has received scarce attention. Embedded in the existing literature on global cities, we argue that global cities possess distinct characteristics, namely a cosmopolitan environment, advanced producer services and interconnectedness to local and global markets. These attributes are believed to reduce the institutional distance components giving rise to the liability of foreignness (LOF), and as such, influence the location strategy of MNEs. Our study provides an empirical examination of the location strategy of MNEs from the BRIC countries, and investigates how the location decisions of these firms are influenced by LOF. By using multinomial logistic models, we illustrate that global cities play an important role when institutional distance is large. We also suggest that viewing the location behaviour of MNEs from different countries as homogeneous might be a misconception. Additionally, we look at the role of subsidiary industry, and propose that high intensity of integration and responsiveness pressures (IR) affects the location choice of MNEs. Conclusively, our study provides important insights for scholars and policymakers concerning the factors that propel MNE activity towards or away from global cities. We also address the importance of future research to improve our understanding of the MNE within geographic space.

Acronyms

BIC	Brazil, India, China
BRIC	Brazil, Russia, India, China
CBD	Central Business District
CDBA	Cost of Doing Business Abroad
FDI	Foreign Direct Investment
GaWC	Globalization and World Cities research network
GCR	Global Competitiveness Report
IR	Integration and Responsiveness
LOF	Liability of Foreignness
MNE	Multinational Enterprise
NAICS	North American Industry Classification System
SIC	Standard Industrial Classification
WEF	World Economic Forum

List of Equations

Equation 1: Cronbach Alpha

- Equation 2: Absolute Distance of Regulatory and Normative Institutions
- Equation 3: Kogut and Singh Index
- Equation 4: Mahalanobis Distance
- Equation 5: Kandogan's Modified Mahalanobis Distance
- Equation 6: Haversine Formula

List of Illustrations

Illustration 1: Structure of the Thesis

Illustration 2: Components of LOF

Illustration 3: Map of Global Cities

Illustration 4: Example of Subsidiary Coding

Illustration 5: Included Countries

Illustration 6: Distribution of Subsidiaries by Country - Regulatory and Normative Institutions

Illustration 7: Distribution of Subsidiaries by Country and Classification

List of Tables

- Table 1: Example of the Connection between Global Cities and LOF
- Table 2: Brief Description of Typical Methods in Research Philosophy
- Table 3: Description of Core Data
- Table 4: Global City Categories
- Table 5: Regulatory Institutions
- Table 6: Normative Institutions
- Table 7: Cognitive Institutions
- Table 8: Industry Classifications
- Table 9: Final Sample Data
- Table 10: Descriptive Statistics and Correlations across Hofstede's Cultural Dimensions
- Table 11: Expected Signs of Hypotheses Tested with the Multinomial Logistic Models
- Table 12: Factor Loading for Factor 1 Regulatory Institutions
- Table 13: Factor Loadings for Factor 1 Normative Institutions
- Table 14: Kandogan's Modified Mahalanobis Distance from the BRIC Countries
- Table 15: Distribution of Subsidiaries
- Table 16: Descriptive Statistics and Correlation Coefficients of the Variables in the Model
- Table 17: Variance Inflation Factors for Model 1, 2, and 3
- Table 18: Difference in Estimates of Multinomial Logistic Models of Global City Location
- Table 19: Multinomial Logistic Regression Models of Global City Location
- Table 20: Changes in the Multinomial Logistic Regressions When Excluding Russia
- Table 21: Summary of Findings

Table of Contents

Abstract	I
Acronyms	
List of Equations	III
List of Illustrations	IV
List of Tables	V
Table of Contents	VI
1. Introduction	1
1.1 Motivation	2
1.2 Problem Statement and Sub-Questions	4
1.3 The Rise of BRIC	5
1.4 Structure of the Study	7
1.5 Delimitations	9
2. Literature Review	
2.1. Agglomerations and MNE Location Strategy 2.1.1 Centripetal and Centrifugal Forces	
 2.2 Global Cities 2.2.1 Cosmopolitanism 2.2.2 Advanced Producer Services 2.2.3 Interconnectedness	
 2.2 Global Cities	
 2.2 Global Cities	

3. Methodology	
3.1 Research Design	
3.1.1 Research Philosophy	
3.1.2 Research Approach	
3.1.3 Research Choice	
3.1.4 Data Collection	
3.2 Definition of Variables	
3.2.1 Dependent Variable: Subsidiary Location	
3.2.2 Independent Variables	
3.2.3 Control Variables	
3.3 Final Sample	
3.4 Econometric Approximation	
3.4.1 Regulative and Normative Distances	
3.4.2 Cultural Distance	
3.4.3 Geographic Distance	61
3.4.4 Empirical Model	
3.5 Assessment of Research Quality	
4. Findings	
4.1 Liability of Foreignness	
4.1.1 Regulatory and Normative Institutions	
4.1.2 Cognitive Institutions	
4.2 Subsidiary Location Distribution	71
4.3 Multinomial Logistic Regression Model	
4.4 Multinomial Logistic Regression Results	77
4.4.1 Global Cities and the Liability of Foreignness	
4.4.2 Subsidiary Industry and Integration Pressures	
4.4.3 Subsidiary Industry and Responsiveness Pressures	
4.4.4 Mixed Pressures and the Liability of Foreignness	
4.4.5 Supplementary Effects	
4.5 Robustness of the Model	
4.6 Summary of Findings	
5. Discussion	
5.1 The Spread of MNEs from BRIC	
5.1.1 Attributes of Global Cities	
5.2 MNE Location Strategy and the Liability of Foreignness	

-

5.3 Subsidiary Industry and Location Strategy	
6. Limitations and Future Research	
7. Conclusion	
8. References	
9. Appendices	

1. Introduction

The notion of firm location strategy, along with the causes and consequences of the choices when expanding abroad, has long been an interest of scholars from different disciplines. Indeed, the impact of multinational enterprises (MNEs) changing strategy in terms of global economic geography is one of the major questions within the field of international business. As the globalisation of MNEs intensifies and spatial barriers abate, we become more conscious and sensitive to what the world space encompass (Harvey, 1990). Despite the curiosity, there is limited empirical work on how the characteristics of firms can impact the specific location choice of subsidiaries. More precisely, the tendency of MNEs to seek 'global cities' has been neglected by scholars (Beugelsdijk, McCann, and Mudambi, 2010; Goerzen, Asmussen, and Nielsen, 2013). This is somewhat surprising as global cities (of which New York, London, Tokyo, and Shanghai are prime examples) have a number of locational advantages that make them key nodes in the global spatial organisation of production and markets, and in the concentration and accumulation of international capital (Friedman, 1986; McCann, 2008).

The literature addressing global cities suggest that these cities are distinct in nature compared to regions, clusters, and other big cities. Nachum (2003, p. 1202) stresses that "Global cities are distinguished from other locations by their high level of global links, hosting high proportions of foreign firms and individuals. Their dynamics are driven by the global economy rather than by local or national economies, and they tend to be linked with each other more than with the national economies that host them". As such, the unique characteristics of global cities can enhance the possibility of mitigating the costs inflicted on MNEs when operating abroad. In other words, global cities are believed to hold attributes that can reduce the liability of foreignness (LOF) - the additional cost of doing business abroad, which is not experienced by local firms in the host country (Eden and Miller, 2004; Mezias, 2002a). These additional costs are driven by the institutional distance (regulatory, normative and cognitive) between two environments (Kostova and Zaheer, 1999; Xu and Shenkar, 2002). Furthermore, the costs inflicted on foreign firms are likely to influence the location choice of the MNE (Asmussen, 2009; Zaheer, 1995), and thus a prime consideration for

MNEs when conducting business abroad (Eden and Miller, 2004). Consequently, a profound understanding of the fundamental of institutions is vital.

The limited empirical research on how LOF influences the location behaviour of MNEs in global cities have primarily focused on more developed economies such as Japan and the Nordic countries (e.g., Goerzen, Asmussen, and Nielsen, 2013; Mehlsen and Wernicke, 2016). However, outward foreign direct investment (OFDI) is no longer an interest exclusively held by firms from developed countries. The expansion of MNEs from emerging markets, defined as countries from both developing markets and transition economies (Sauvant, Maschek, and McAllister, 2010), and their role in global economy are receiving increased attention. According to Sauvant, Maschek, and McAllister (2010, p. 8) the "Growing OFDI from emerging markets, and from BRIC countries' MNEs in particular, has given rise to the question whether these "new kids on the block" are fundamentally different from their developed countries' peers". The BRIC countries, referring to Brazil, Russia, India, and China, are one of the impetuses behind the acceleration of OFDI flows from emerging markets. Economic liberalisation and fundamental development in foreign trade regimes of BRIC has not only intrigued significant FDI inflows to these countries, but also provoked these countries to invest overseas, thus making important participants in the global economy (Sauvant, Maschek, and McAllister, 2010; Holtbrügge and Kreppel, 2012).

1.1 Motivation

The main purpose of this study is to combine the perspectives of LOF and MNE location strategy to examine the factors that propel MNEs toward or away from global cities. As MNEs are the dominant players in globalisation by circulating knowledge, technologies, and people across the globe - understanding globalisation requires a better understanding of the economic geography of MNEs (McCann, 2008). According to Beugelsdijk, McCann, and Mudambi (2010, p. 488), the major weakness of the convergence of economies, geography, and international business strategy literature to explain location behaviour is that "MNEs are still basically portrayed in geographical space as independent units agglomerating in certain locations, leaving the nature of the interaction between places and space as a black box". This means that an approach which "centres simultaneously on the notions of place, space and

organization [...] as a theoretically distinctive and also an empirically tractable approach" (Beugelsdijk, McCann, and Mudambi, 2010, p. 489) must be in place in order to understand MNEs in geographic space. Accordingly, the place is the global city, the space is LOF, which in this case will capture the 'distance' between parent MNE and subsidiary location, and lastly the organisation is the MNEs operations in global cities.

Mehlsen and Wernicke (2016) opened this 'black box' and investigated the relationship between global cities and the LOF, and how it influences the location of MNEs' subsidiaries. They did so by investigating MNEs from the Nordic countries, namely Norway, Sweden, Denmark and Finland, and Japan. Additionally, Goerzen, Asmussen, and Nielsen (2013) researched the location patterns for Japanese MNEs, as Japan is one of the leading countries in terms of FDI in developed and developing markets. However, to our knowledge, no one has done a research to see if the same findings apply for emerging market MNEs, more specifically the BRIC countries.

Despite the perception that MNEs from less developed countries has been perceived technologically backward and incompetent to compete against MNEs from developed countries, these less developed economies are progressively expanding their operations abroad (Cuervo-Cazzura, 2007). Especially, the spread of MNEs from emerging markets is an increasingly important phenomenon. Like their counterparts from developed countries, emerging market MNEs seek to develop a portfolio of locational assets as a source of their international competitiveness (Sauvant, Maschek, and McAllister, 2010). Nevertheless, little is known about the multi-nationalisation practices of firms from these countries, and the indicators from previous research, which has studied developed economies, may not be applicable when studying MNEs from emerging markets, such as underdevelopment of institutions, may affect these processes. Are multinationals from the BRIC countries driven by similar motivations as multinationals from developed countries, or do they pursue different distinctive rationales? We suggest that prior literature on economic geography and international business has not yet covered this issue on an empirical level.

3

By taking a global city perspective we can enable valuable insight on the modern location configuration of MNEs from the BRIC countries (Goerzen, Asmussen, and Nielsen, 2013). Hence, we propose an empirical study by examining the relation between LOF and subsidiary location in global cities. By bridging these concepts this study aims to provide insight and understanding in the modern localisation strategies from the perspective of MNEs from BRIC countries. This angle of incidence allows us to investigate if the MNE location pattern found by earlier researchers holds for MNEs from the BRICs. Consequently, this study will potentially be beneficial given the limited understanding of the geographic aspect of the behaviour of MNEs from the BRIC countries - a topic relevant for scholars, managers, and policymakers (Deng, 2012; Yang et al., 2009; Goerzen, Asmussen, and Nielsen, 2013).

1.2 Problem Statement and Sub-Questions

Based on the motivation, we arrive at the following problem statement:

How can the liability of foreignness influence subsidiary location strategy in a global city associated with the international operations of MNEs?

In order to analyse the different concepts outlined in the problem statement, four underlying sub-questions will help us answer the overall problem statement and provide the direction of the analysis. The sub-questions are as follows:

- 1. What characterises a global city?
- 2. What are the components of the LOF?
- 3. How can we construct valid measures that capture the components of the LOF?
- 4. How do the properties of a global city reduce the impact of the LOF?

To begin with, an understanding of global cities is necessary as these cities are relevant for MNE location strategy (Nachum and Wymbs, 2005) and the overall location pattern of economic activity (Beaverstock, Smith, and Taylor, 1999). According to Goerzen, Asmussen, and Nielsen (2013), the nature of global cities are distinct from regions and industry clusters, or even from megacities as they do not exhibit global city characteristics (Scott, 2001a). In short form, Sassen (2000) gives an identification of the term "global cities" as such; in the age

of globalisation, the activities of production are scattered on a global basis. These globalised production networks are complex and must be managed by new forms of financial and producer services. Thus, they are subject to agglomeration economies, and tend to cluster in a limited number of cities. The question then becomes how to identify these cities, and to define the characteristics that distinguish them from other cities.

The second and third sub-questions are an inquiry into what causes the LOF and how to measure it. Following the notion that the LOF is the core strategic issue for MNE managers (Eden and Miller, 2004), we need to identify the components of LOF and how these can be mitigated. While researchers has traditionally emphasized that LOF can be defined as all additional costs a firm operating in a market overseas incurs that a local firm would not incur (e.g. Hymer, 1960), Eden and Miller (2004) stresses that the LOF means the social costs of going abroad. These social costs arise from the unfamiliarity, relational, and discriminatory hazards that foreign firms face over those faced by local firms in the host country. Hence, the social costs arising from the LOF is seen as the core strategic issue for MNE managers. In this sense, investigating the different components of the LOF is necessary. Subsequently, we need to construct valid measures that capture the components of the LOF in order to understand how these components can be operationalised in the context of empirical analysis. The questions can be characterised as having both a theoretical and methodological character, seeking not only to investigate what causes LOF, but also how to measure it.

While the preceding three sub-questions provide us with the identification of global cities and LOF, a theoretical link between the two streams of thought is likewise essential. Hence, the last sub-question seeks to explore and conceptualise the link between the sources of benefits of global cities and the strength and existence of the LOF. Here we will formulate a number of research hypotheses to investigate the effect of LOF on MNEs' propensity to locate in global cities and concurrently answer the overall problem statement.

1.3 The Rise of BRIC

The global market of FDI has experienced momentous changes in recent years. In particular, the relevance of firms from emerging markets has remarkably expanded the last decade, and

some of these have become essential players in the global economy. Factors such as continuing liberalisation of FDI regimes worldwide and technological improvements can impact and foster OFDI from both developed and emerging markets. From 2003 to 2008, OFDI from emerging market MNEs have experienced a growth of approximately 82% on average (Sauvant, Maschek, and McAllister, 2010; Amal et al., 2013). Furthermore, the BRIC countries are viewed as one of the driving forces behind the escalation of OFDI from emerging markets, and accounted for roughly 40% of the total OFDI flows from emerging markets in 2008 (Sauvant, Maschek, and McAllister, 2010). The growth has received remarkable attention, thus increased the interest for examining if these countries are fundamentally different from developing countries (ibid). Although the amount of OFDI flows from the BRIC countries is humble from an international point of view (a combined "market share" of 5% in the global context in 2007), the rise of these economies is believed to transform the world economy (Sauvant, 2005; Sauvant, Maschek, and McAllister, 2010). Together these countries are projected to contribute approximately 49% of the global GDP growth by 2020 (Mathur and Dasgupta, 2013).

The BRIC countries are a relatively heterogeneous group when considering the main outward investing industries. For instance, Brazil has a high presence in energy and mining industries, Russia in oil, gas, and telecommunication, India invest heavily in pharmaceutical, software and IT, and China in manufacturing, trade and services (Gammeltoft, 2008). Also, the government support for OFDI among the BRIC countries differs. Quoting Sauvant (2005, pp. 652-653) "The Government of China has an established policy ("Go Global") to encourage OFDI, which dates back to 2000. Brazil's leadership wants to create global players, but there is not yet a policy in place to advance this objective. India is liberalising, but its focus is now on attracting more inward FDI. The Russian Federation does not have a specific policy promoting OFDI, and capital controls exist". Nevertheless, firms originating from the BRICs possess unique strengths and desires that enable them to seek an internationalisation strategy, not only by investing in their neighbouring countries, but also in highly developed economies (Holtbrügge and Kreppel, 2012).

1.4 Structure of the Study

This study is structured into seven chapters. Chapter 1 comprises of an introduction that provides insight to the background and motivation of the study, explanation for the choice of home countries included in the research, problem statement and sub-questions, and structure of the study. Lastly, the chapter presents the delimitations of the thesis.

Chapter 2 covers a literature review by emphasizing on theories concerning firm location strategy, global cities, the LOF, and institutional distance. The chapter aims to provide an insight in the already existing literature, which has provided the basis for our sub-questions and the formulation of hypotheses.

Chapter 3 presents the choice of methodology, including the research design, data collection, the choice of dependent, independent, and control variables. The chapter also discloses the econometric approximation used to test the outlined hypotheses. Lastly, the validity and reliability of the methodology are given attention to assess the research quality.

Chapter 4 presents the findings from the empirical testing in form of written texts and figures, and systematically answers the hypotheses and specifies which results were expected and unexpected. The disclosure of the findings provides basis for the subsequent discussion.

Chapter 5 discusses the results and provides justification for the empirical findings. The overall aim of the chapter is to bridge our findings with the existing literature concerning MNE location strategy, global cities, LOF, and institutional distance.

Chapter 6 discusses the potential limitations of this study. By taking a critical approach to this study, the chapter aims to disclose possible constraints and restrictions that might have influenced the findings of this study. Moreover, the chapter makes suggestions for further research by proposing new approaches and perspectives.

Chapter 7 seeks to answer the overall problem statement and sub-questions presented in the first chapter. The objective of the chapter is to compile the most important findings and provide concluding remarks on the sub-questions in this study.

7

To obtain an enhanced overview of the composition of the thesis, a visualisation of the structure is provided in Illustration 1.



Illustration 1: Structure of the Thesis

1.5 Delimitations

The delimitations in this thesis are a result of the specific choices made by the researchers. Firstly, this study concerns the nations that are included in the collective term "BRIC countries", namely Brazil, Russia, India, and China. This implies that the empirical findings only permit us to start discussion addressing these countries, and the results may not be used to draw inferences about other countries. Secondly, the variables used to evaluate the MNEs choice of subsidiary location are based on the preferences of the researchers through careful review of existing literature and prior studies. Hence, other academics might define other variables as more or equally important. Additionally, our dataset provided somewhat limited information about the MNEs and their subsidiaries, and therefore put further restrictions on our options of independent variables. For example, the MNEs year of foundation was not available, hence, ruling out the possibility of including this information in our empirical testing.

2. Literature Review

In the following chapter we will conduct a thorough review of the most relevant theories in relation to MNE location strategy, global cities, LOF, and institutional distance. Our study builds on several theoretical streams, including international business theory, economic geography, emergence and evolution of global cities, and international trade theory. Each research stream brings its own unique tool in studying the problem statement, and all together they will confine into a theoretical argument that will form the basis for the hypotheses to answer the overall problem statement. Hence, this review will serve as a reference point to our hypotheses and in the discussion of our findings.

2.1. Agglomerations and MNE Location Strategy

The externalities that can stem from the localisation of industry, i.e. agglomeration economies have long been recognized. Researchers have examined various types of agglomerations, including industrial districts or clusters, regions and cities (Goerzen, Asmussen, and Nielsen, 2013). One of the earliest was Marshall (1930), who highlighted three external economies that might stem from industry localization: (i) knowledge spillovers among competitors, (ii) industry demand that creates a pool of specialised labour, and (iii) industry demand that creates a pool of specialised input providers. These positive externalities have the potential to enhance the performance of firms that agglomerate. The concept of industrial agglomeration, in this case clusters, has later been studied by Porter (1998). He stresses that competitive advantage is embedded in locational features of knowledge, relationships, and motivation unique to this particular cluster of geographically concentrated companies and institutions that spur innovation and competitive success. Porter claims that clusters have the potential to affect competition in three ways: by increasing the productivity of the companies in the cluster, by driving innovation in the field, and by stimulating new businesses in the field. According to Porter, in the modern global economy, comparative advantage - how certain locations have special endowments (i.e. harbour, cheap labour) to overcome heavy input costs - is less relevant. Now, competitive advantage - how companies make productive use of inputs, requiring continual innovation - is more important.

In the management literature on location strategy, several authors have examined the notion that proximity matters. Proximity to host-country is central as subsidiaries are increasingly embedded in country knowledge networks and that FDI may in part be driven by the desire to gain knowledge from unique institutional contexts (Almeida and Phene, 2004; Frost 2001). However, as several researchers point out, the primary perspective of the literature on these specialised producer communities has been that of industrial district, and not of the agglomeration benefits that are unique to the economic geography of cities (Goerzen, Asmussen, and Nielsen 2013; Mehlsen and Wernicke 2016).

One of the early theorists to focus specifically on the nature of cities was Jacobs (1969, 1984, 2000), who attributed the growth of cities to the diverse activities within them that are also subject to economies of scale due to collocation. Jacobs, whose work was built on Marshall's (1930) theories about agglomerations, defined cities as a process. The process is an import replacement, which she describes as "a process of immense, even awesome, economic force" (Jacobs 1969, p. 150). In the broader literature, the internal and external relations of cities are usually treated as agglomeration/cluster processes and network/connectivity processes respectively that provide cities with specific economic advantage (Taylor, 2013). In Jacobs' work the process encompasses two sub-processes, which she refers to as the 'little movements' within city economies, and 'the great wheels of economic life'. Jacobs' discussion of these 'little' interactions within cities at the heart of this economic dynamism is a foundation text of economic clustering theory. As such, a city in Jacobs' view can be understood as an ecosystem that naturally organizes diverse human activities (the "little movements") to facilitate deliberate as well as incidental learning and innovation within an environment that in turn lead to complex relations with other cities (the "big wheels" of commerce) (Goerzen, Asmussen, and Nielsen, 2013).

Jacobs (1969) advanced the idea that cities enjoy advantages because of their economic and social diversity. According to Storper and Venables (2004) this diversity, because it is highly packed into limited space, facilitates haphazard and serendipitous contact among people. In Jacobs's intuition, urban diversity is central to different kinds of economic creativity because of specific advantages of unplanned and haphazard inter-network contact. Collocation is especially important to these processes because it provides a low-cost way for new ideas and

talent to make their way into existing activities, by facilitating access for newcomers and by lowering the costs of evaluation on the part of those already in the relevant loops. Hence, new relationships are made easier and more effective than without collocation (ibid).

Although both the Marshallian and Jacobean traditions focus on the concept of geographic proximity, they differ in the sense that "Marshall centres on belonging to a specialized producer community which diffuses the 'secrets' of industry, not the kind of cosmopolitan and haphazard city life described by Jacobs" (Storper and Venables, 2004, p. 353). In other words, Marshall (1930) focuses on specialisation in particular sectors and industries while Jacobs focuses on diversity of related and mutually supporting local activities. In geographic proximity this difference has imperative implications for the way firms make specific location choices with respect to their international subsidiaries. As Mehlsen and Wernicke (2016) highlight, the implication of this distinction is that urban agglomerations in the Jacobeans sense make cities function as centres of learning, creativity, and innovation. This is because they are home to many interdependent activities that are rooted in the endless occurrence of transactional encounters and experiences and in the creation and circulation of enormous quantities of information (Scott, 2001b).

Hence, the discrepancy between urban agglomerations and pure industrial clusters is that the former fosters creativity and innovation based on a multitude of interdependent activities. As such, because cities are highly integrated into various spheres of economic activity, their attractiveness will depend on the relation to their peripheral environment and international trade relations.

2.1.1 Centripetal and Centrifugal Forces

In an economic geography model, it is essential to take into account the tension between the "centripetal" forces that tend to pull population and production into agglomerations and the "centrifugal" forces that tend to break such agglomerations up (Audirac, 2005; Krugman and Elizondo, 1996). According to Krugman (1994), the centripetal forces that pull population and production into urban concentrations can broadly be categorized as the natural advantages of particular sites such as access to markets, products, and labour markets, as well as knowledge spillovers. Conversely, the centrifugal forces hampering the city's attraction to

people and firms and as such, restricting the city size are: commuting costs, urban land rent, pull of dispersed resources, congestion, and pollution.

Inspired by Fujita and Thisse (1996), we give an illustration of the fundamental mechanism of agglomeration involving both firms and people by giving a concrete example of the agglomeration force of knowledge spillovers: Fujita and Thisse (1996) stress that an important characteristic of information is its public-good nature: the use of a piece of information by a firm does not reduce its content for other firms. Hence, the diffusion of information within a set of firms generates externality-like benefits to each of them. The benefits of communication will increase as the number of firms involved increases, given that the information owned by firms is different. Moreover, the quality of information will decline as the distance between firms increase, hence, the benefits will be greater if firms locate closer to each other. Consequently, holding all else equal, each firm has an incentive to be close to others, which in turn fosters the agglomeration of firms. However, the clustering of many firms in a single area will increase the average commuting distance for their workers. This will also increase the wages and land rent in the area surrounding the cluster. These effects tend to discourage the agglomeration of firms in the same area. As a consequence, the balance of these opposite forces will determine the equilibrium distribution of firms and people.

Following the notion that the process of globalisation has made the world economy become increasingly interdependent and reduced the barriers of trade, MNEs might be inclined to locate outside the city in order to avoid the higher costs associated with the metropolitan areas. Consequently, this would mean that MNEs can relocate their operations and move back-office operations to outlying suburbs where real estate and labour costs are low (Mehlsen and Wernicke, 2016). Nevertheless, Sassen (1991, 1994, and 2001) and others suggest clearly that urban agglomerations such as global cities have a significant impact on the location strategies of MNEs. Thus, the findings have implications for the international movement of people as well as on the global movement of capital. Through the process of globalisation via cities, the interrelationships between local social issues, such as wage disparity, skill development, and the economic renewal of urban centres to MNE location choice, are critical issues to public policymakers.

2.2 Global Cities

Strategic location of MNEs and their accompanying subsidiaries are of great curiosity for researchers within the field of international business. However, Goerzen, Asmussen, and Nielsen (2013) allege there is an underdeveloped insight in the geographic aspect of MNEs, or more explicitly, the motive for MNEs to seek "global cities". They argue that the application of a global city perspective enable us to gain insight into MNE behaviour and their modern economic location configuration.

Cities with considerable size has been of inquisitiveness to academics for a long time, initiating different classifications, including world cities, imperial cities, primate cities, megacities, and global cities (Beaverstock, Smith, and Taylor, 1999). These numerous labels are believed to be a reflection of the diversity in the nature of cities, as well as the different approaches applied to the study of cities. The literature suggests two distinctive approaches, namely the demographic tradition and the functionalistic tradition. The demographic tradition addresses human and ecological implications of great population concentration, whereas the functional tradition concerns how cities serves as fundamentals to the modern globalization development and as centres in a broader web of global linkages (Beaverstock, Smith, and Taylor, 1999; Goerzen, Asmussen, and Nielsen, 2013). Due to the objective of this paper to examine the relationship between global cities, LOF and location strategies of MNEs, the functional tradition approach is adopted to enhance our understanding of the connection between geographically separated activities, and the connection between geographic positioning and international management (Goerzen, Asmussen, and Nielsen, 2013).

The literature assigns the notion of global cities with three interconnected characteristics that distinguish them from other classifications such as megacities, industrial cluster and regions. These are: a *cosmopolitan* environment, high levels of *advanced producer services*, and a high level of *interconnectedness* to local and global markets. These three distinct characteristics minimize the cost for MNEs to operate abroad. To achieve a better understanding of global cities, these are presented separately below (Goerzen, Asmussen, and Nielsen, 2013).

2.2.1 Cosmopolitanism

Some cities obtain characteristics derived from social elements such as politics, education and culture, and consequently construct a cosmopolitan environment (Goerzen, Asmussen, and Nielsen, 2013). The notion of cosmopolitanism originates from the Greek term "kosmopolitês" which can be translated to "citizen of the world" (Jazeel, 2007). Despite a long history of being embedded in internationally oriented urban centres, cosmopolitanism is somewhat new in academic discussion (Warf, 2015). Vertovec and Cohen (2002) describe cosmopolitanism as a long side-lined notion recently reactivated by a variety of theorists. An evoking explained by new politics to the left, incorporating middle-path options between ethnocentric nationalism and particularistic multiculturalism. Warf (2015) draws parallels to regions where people have access to various lifestyles, constantly meeting diversity and a tolerant mind-set to social and ethnic disparities. In simple form, the terminology "cosmopolitanism" can be defined as "ethical, moral, and political philosophy that uncouples ethical and moral allegiances from geographic location, arguing that each person is bound up with, and obligated to, humanity as a whole" (Warf, 2015, p. 928).

The agglomeration of social factors, institutions and multinational firms causes the formation of cosmopolitan environments that leads to the localisation of specialised managerial capabilities and to enticing talent that permits economic growth and innovation (Florida, 2004). Also, in conjunction with the features of a cosmopolitan environment, cosmopolitan customers are described as unprejudiced, with consumption orientation transcending any culture and with appreciation towards product and service diversity.

In short, global cities are viewed as more diverse, accepting and cosmopolitan across several dimensions compared to small and rural regions. These cities tend to teach their citizens cosmopolitan values, which stresses the respect for differences (Warf, 2015).

2.2.2 Advanced Producer Services

A central theme in the functional tradition is the view of global cities as hubs in a wider web of global connections, leading to a co-evolution of MNE extension and development of global cities. Geographic dispersion of financial activities across countries increases the complexity of firm's central functions, and escalates the importance of handling and coordinating the network in which the firm operates. As a result of this intricacy, global firms outsource central functions, such as accounting, public relations, advertising and banking, to highly specialized service firms. The complexity of the service offered, the uncertainty in the markets of which they operate in and the growing pressure for rapidity, compose a new agglomeration dynamic. These advanced producer service firms tend to locate in areas where sufficient talent and expertise can accommodate their requirements, which are found in global cities (Sassen, 2004; Friedmann, 1986). Additionally, these firms necessitate information-rich environments to be ahead in their industry and therefore tend to cluster in these regions. This producer-service concentration can also be explained by the collection of potential customers that are found in these cities, including headquarters, government divisions and other foreign firms. The agglomerations of advanced producer services intensify knowledge and learning of MNEs by providing them with professional advises (Goerzen, Asmussen, and Nielsen, 2013; Beaverstock, Smith, and Taylor, 1999).

Nevertheless, the need for information does not cause these firms to cluster in just a few centres but rather all major regions as it enables them to provide their service whenever and wherever they are requested. As their clients are becoming global, these service firms also need to grow their global presence, pursuing locations that strengthen their operations (Brown et al., 2010). The creation of these worldwide networks in major cities permits and facilitates international business (Brown et al., 2010; Goerzen, Asmussen, and Nielsen, 2013).

2.2.3 Interconnectedness

Until the late mid twentieth century, large movement of goods occurred between cities within a nation, while there was little movement between cities that crossed national boundaries. This balance altered when firms started to conduct business in other nations. Once the linkages between cities became global networks, nations became reliant upon their cities for associations to the rest of the world. Paris was of paramount importance for France, Tokyo for Japan, and so forth. Consequently, the function and status of cities within their nations becomes a function of the international links of cities (Abrahamson, 2004).

As stated, clusters do not only relate to competition and trade, but also resource flows such as technology, knowledge and capital. The dynamics of globalisation have intensified the

magnitude of competition, but also boosted potential profits from trade due to resource flows between enterprises located in diverse clusters. Global cities have a tendency to create inbound and outbound networks for resource streams, referred to as external global linkages (Lorenzen and Mudambi, 2013). They hold a high level of interconnectedness due to their function as central nodes and their centrality in the network of resource flows (Brown et al., 2010). The environment is complemented with infrastructure, both physical (e.g. airports) and informational (e.g. mass media), that enhances the movement of human resources and relationship formation across geographic areas (Goerzen, Asmussen, and Nielsen, 2013).

2.2.4 Global City Composition

As discussed, there are different classifications of cities, and there is also an overlap between them. For example, New York is both a mega city and a global city, while Zurich is a global city, but not a megacity. Whereas megacities can be clearly defined in terms of population size, a roster of global cities is more challenging to construct (Beaverstock, Smith, and Taylor, 1999). However, global cities constitutes as comprehensive global networks and are characterized by cosmopolitanism, advanced producer service and interconnectedness, which distinguish them from other cities and further impact MNE location choice (Goerzen, Asmussen, and Nielsen, 2013).

The growth and development of foreign investments and trade, along with the need for financing and handling such activities has served the growth of these functions in major cities (Sassen, 1994). The root of global cities role in the international economy is to operate as grounds for interaction, enabling face-to-face contact, political networks and the exchange of tacit knowledge. Through the conglomeration of broad webs of foreign investment, resource flow and capital, global cities allow for dense networks of interaction that is necessary to ensure headquarters performance of MNEs (Warf, 2015). Even though contemporary globalization has seen an increase in interlinked global cities (Warf, 2015), the number of global cities that exist is an on-going deliberation. Conversely, there exists a growing consensus that particular cities are increasingly important as key nodes of economic coordination and control due to their network-building attributes (Goerzen, Asmussen, and Nielsen, 2013).

2.3 Liability of Foreignness

The *cost of doing business abroad* abridged CDBA, is a widely known concept in the international business literature. The term refers to the disadvantage or the additional cost inflicted on MNEs when doing business abroad, which is not experienced by local firms in the host country (Eden and Miller, 2004). CDBA is often applied interchangeably with the notion of LOF. However, Eden and Miller (2004) stress the difference between the terminologies, and argue that CDBA addresses both social and economic costs of conducting business abroad, while LOF only concerns the social cost. Hence, LOF can be understood as a subset of CDBA. As the economic costs related to geographic distance (including production, distribution and marketing) are often understood and to some extent predictable, LOF is often the fundamental strategic concern for MNEs (Eden and Miller, 2004), and thus, main focus of this study. Yet, both components of operating abroad are likely to impact the geographic location choices made by MNEs and later the performance level based on these choices (Asmussen, 2009; Zaheer, 1995).

Researchers suggest that foreign subsidiaries face a disadvantage over local firms, that is, they are subject to LOF (Mezias, 2002a). Hymer first introduced the terminology in 1976 where he argued that domestic firms have the advantage of superior information regarding their country, including its economy, language, politics and law (Mezias, 2002b). Hence, "It is not the general treatment that is important: this affects the domestic firms as well as the foreign firms, but it does not give one firm an advantage over another. What is important is the fact that in given countries, foreigners and nationals may receive very different treatment" (Hymer, 1976, pp. 34-35). Arguably, the benefits possessed by local firms originate from their proximity to the local market and the potentially favourable treatment from host-country governments, consumers and suppliers (Mehlsen and Wernicke, 2016).

Following Eden and Miller (2004), LOF can be separated into three hazards that influence foreign firms disproportionately to local firms, respectively unfamiliarity, discriminatory and relational hazards. The scholars claim that these hazards are driven by institutional distance, referring to the cognitive, regulatory, and normative distance between home and host countries, and will be elaborated in section 2.4. These distances are believed to affect the social costs for MNEs to operate abroad, and can further be seen as an explanation for MNEs

location strategy. Moreover, scholars argue that global cities can mitigate these hazards. Therefore, by connecting the two concepts, we give examples of how the attributes of global cities can reduce LOF.

2.3.1 Unfamiliarity Hazards

Unfamiliarity hazard relates to foreign firms lack of experience and knowledge of the host country. The hazard causes disadvantages for foreign firms, and is measured by the additional costs to gain host-market understanding and information, compared to local firms (Eden and Miller, 2004). Zaheer and Mosakowski (1997) propose that a prolonged duration of firms operations in a foreign country causes a steadily integration. The unfamiliarity disadvantage is therefore often correlated with the tenure of the MNEs operation in the host country. Notable, unfamiliarity hazards does not relate to the age of the MNE, but rather to the firm's experience in the host country, the cost should therefore reduce over time (Eden and Miller, 2004). Additionally, Mehlsen and Wernicke (2016) argue that global cities can moderate this unfamiliarity, as these cities are believed to provide a cosmopolitan environment characterized by diversity and acceptance. Also, due to the agglomeration of advanced producer services in these cities, foreign MNEs can benefit from their advice and further expedite the information and learning process.

2.3.2 Discriminatory Hazards

The discrimination hazard refers to the behaviour towards foreign firms relative to local firms, inflicted by governments, customers or the general public in the host country. It focuses on the cost associated with the challenges of achieving external legitimacy (Eden and Miller, 2004). Kostova and Zaheer (1999) assert several challenges for MNEs to obtain legitimacy due to foreignness, including host country's lack of information about foreign MNE, application of stereotype labels in viewing these firms and vulnerability of MNEs to be prey for interest group in the host country. Therefore, foreign firm's lack of embeddedness in the host country compared with local firms might result in discriminatory behaviour by host-country stakeholders. Although laws and regulations might protect foreign firms against biased treatment, informal discrimination might arise if the subsidiary is deemed an outsider (Eden and Miller, 2004). The scholars also allege that MNEs will hold a poorer understanding

of the host environment and legitimacy requirements the greater the institutional distance (Kostova and Zaheer, 1999). However, Mehlsen and Wernicke (2016) argue that cosmopolitan environments of global cities along with interconnectedness and advanced producer services can make foreign firms more legitimate from the perspective of the local stakeholders.

2.3.3 Relational Hazards

The third hazard that might increase the LOF is referred to as relational hazards (Eden and Miller, 2004). Foreign MNEs are expected to encounter greater uncertainty compared to local firms, both in terms of internal and external uncertainty. The former refers to the unpredictability such as political instability and economic fluctuations, while the latter concerns the challenges of managing employees at a distance and with diverse cultural backgrounds (Anderson and Gatignon, 1986; Eden and Miller, 2004). These uncertainties may increase the organizational cost of handling the relationship between all the parties concerned in the operations, and hence foster LOF.

However, Mehlsen and Wernicke (2016) argue that the characteristics of global cities will reduce the relational hazards. First, the cosmopolitan environment possessed by global cities assists MNEs to form relationships with other international firms and innovative talent, in addition to obtain coordination and control within the MNE by employing expatriates. Second, advanced producer services permit MNEs to cooperate with the same service contributors on a global level, which contributes a reduction in coordination costs. Lastly, they argue that the global city characteristic of interconnectedness will ease the transfer of "capital, people, goods and information to and from local subsidiaries faster, cheaper, and more accurate and thus enables better intra- and inter-firm relations" (Mehlsen and Wernicke, 2016, p. 83).

2.3.4 Compiling Liability of Foreignness

Following Eden and Miller (2004), CDBA consists of two components, respectively the economic cost and the social cost, with the latter referred to as LOF. LOF generates extra cost for firms operating abroad, and is composed of hazards that are driven by the institutional

distance between nations. However, the level of LOF may vary between industries and firms, and among countries (Zaheer, 1995).

Regardless of its source, LOF suggests, *ceteris paribus*, a lower profitability for foreign firms compared to local firms (Zaheer, 1995). Nevertheless, it should be noted that not all dimensions of LOF are static. LOF can be viewed as a dynamic concept, implying that foreign firms that have operated in a location long enough and developed local dominance may become insiders themselves, and as such decrease or eliminate LOF (Zaheer and Mosakowski, 1997). Hence, it is important to comprehend that LOF is not necessarily an inevitable result of being foreign. However, such positioning is time-consuming and increasingly challenging with greater institutional distance between host and home location (Cantwell, 2009; Eden and Molot, 2002). Zaheer (2002) suggests that MNEs can reduce LOF and compete with local firms by either conveying firm-specific advantages from the parent, or try to imitate practices from successful firms in the host-country. Also, Petersen and Pedersen (2002) find that most firms tend to master a quick reduction in LOF, likely due to market research prior to entry. Thus, despite the outlined challenges possessed by foreigners, it is therefore important to highlight that host countries are not inevitably hostile environments as subsidiaries may also identify benefits from a broader scope of operations (Mezias, 2002b).

To provide a more holistic overview of the relation between global cities and LOF, Table 1 provides simple examples of the connection between these two terminologies by mapping some of the characteristics of global cities against the hazards that gives rise to LOF.

	Global city characteristics that can reduce LOF
Unfamiliarity hazards	Advanced producer services can accelerate learning by supplying MNEs with consulting and advice.
Discriminatory hazards	Cosmopolitanism can provide legitimacy through openness and diversity.
Relational hazards	Interconnectedness can ease the transfer of capital, people, goods and information, i.e. faster, cheaper and more accurate.

Table 1: Example of the Connection between Global Cities and LOF

Source: Own configuration based on the outlined theory

2.4 Institutional Distance

Institutions are "humanly devised constraints that structure political, economic and social interaction. They comprise of both informal constraints (sanctions, taboos, customs, traditions, and codes of conduct), and formal rule (constitutions, laws, property rights)" (North, 1991, p. 97). As earlier mentioned, the institutional distance between home and host countries of an MNE can be seen as "the difference or similarity between the regulatory, cognitive, and normative institutional environment" (Kostova and Zaheer, 1999, p. 68). According to institutional theory, the institutional environment is key determinant of firm structure and behaviour (DiMaggio and Powell, 1983). One of the fundamentals in this theory is that organizations are strongly influenced by a collective understanding of proper conduct (Zucker, 1983). The larger institutional distance between two countries, the more challenging it will be for an MNE to comprehend the foreign environment and establish legitimacy. Hence, institutional distance suggests a possible explanation for MNE structure and behaviour (Xu and Shenkar, 2002).

Countries may be distant from each other in a number of dimensions, and not only in the geographic sense. Diverse types of distance might influence firms and managerial assessments differently depending on the distance under examination. It is therefore necessary to emphasize the importance of defining and assessing institutional distance along its dimensions. As discussed earlier, researchers argue that institutional distance is the key driver behind LOF by influencing the unfamiliarity, discriminatory and relational hazards (Eden and Miller, 20014), and therefore highlights the importance of understanding the fundamental of institutions. Berry, Guillén, and Zhou (2010) allege a better understanding of managerial decisions and country trade patterns by examining and operationalizing distance. In order to broaden our understanding, we follow the existing literature and decompose the institutional environment into three pillars (Xu and Shenkar, 2002).

2.4.1 Regulatory Distance

The regulatory distance concerns the "setting, monitoring and enforcement of rules" (Xu and Shenkar, 2002, p. 610). This involves rules and laws intended to establish or maintain stability and order in the community (Kostova and Zaheer, 1999). The regular pillar therefore manages rewards or sanctions for compliance or deviation from these rules (Eden and Miller, 2004).

However, Xu and Shenkar (2002) believe differences in the regulatory pillar will not have significant influence on MNEs choice of market as these differences are codified and implemented into their routines. Nonetheless, an exception applies if the regulative requirements are considered to undermine the core strategy of the MNE.

2.4.2 Normative Distance

The normative pillar is rooted in social beliefs, and concerns the values and norms possessed by individuals in a given society (Kostova, 1999; Xu and Shenkar, 2002). It indicates how things should or should not be done, and these perceptions are often deeply culturally embedded. Thus, conflicting and contrasting perceptions of how things should be done can amplify the hazards that gives rise to LOF. This pillar is viewed as tacit and challenging for foreigners to sense and understand. Hence, normative institutional distance implies a positive correlation with LOF (Eden and Miller, 2004).

2.4.3 Cognitive Distance

The cognitive component of institutional distance is social in nature and reflects how schemas and frames influence the way people interpret and understand stimuli from the environment (Kostova, 1999). It deals with stereotypes and diverse standards in judging MNEs versus local firms, often due to the local's lack of information about the MNE (Kostova and Zaheer, 1999). Following Xu and Shenkar (2010, p. 610), this pillar "highlights the internal representation of the environment by actors; legitimacy is anchored in cultural orthodoxy". An increase in the cognitive distance between home and host countries will cause growth in LOF for MNEs and, hence, intensify the pressure for MNEs to comply with host-country practices (Eden and Miller, 2004).

2.4.4 Institutional Distance Composition

As MNEs disperse their operations and functions in different countries, they need to interface several institutional environments (Xu and Shenkar, 2002). Institutional distance theory can be used to explain the pressures faced by MNEs (ibid), and in turn, their strategies and operations. However, these three pillars differ in the extent to which they are clearly codified so that observers, such as foreign companies, can understand them. Kostova and Zaheer

(1999) suggest that the regulatory pillar is the easiest to interpret and comprehend as it is formalized in laws and regulations. In the opposite end, the normative pillar is positioned. This dimension is a part of a country's deep structure and is therefore perceived as challenging to sense and interpret for foreigners. The cognitive pillar is deemed to be positioned in between the preceding pillars in terms of how difficult they are to interpret and understand. Overall, these three institutional pillars affect LOF through unfamiliarity, discriminatory, and relational hazards (Eden and Miller, 2004), and are therefore of interest for MNEs in their location strategies. Without going into lengthy discussion, it should be mentioned that new distance dimensions have been developed in recent times, including administrative distance and political distance (Berry, Guillén, and Zhou, 2010). However, due to the scope of the thesis, these dimensions are not included.

With the aim of providing a holistic understanding of the connection between institutional distance and LOF, an illustration is provided below. As seen in Illustration 2, LOF is caused by institutional distance, which in turn has an effect on the cost of doing business abroad.





Source: Own configuration based on the outlined theory

2.5 Hypotheses

Based on the existing literature on MNE location strategy, global cities and LOF, we have defined five hypotheses with the purpose of answering our overall problem statement. According to Kothari (2004, p. 184,) a hypothesis can be defined as "a proposition or a set of

propositions set forth as an explanation for the occurrence of some specified group of phenomena either asserted merely as a provisional conjecture to guide some investigation or accepted as highly probable in the light of established facts". By utilizing hypothesis testing we are empowered to make probability statements about the population parameters. Even though a hypothesis may not be proved fully, it is accepted if it has withstood a critical testing (Kothari, 2004).

MNEs are operating under intense pressure to enhance productivity of their complex structures to rationalize for greater transaction costs that are associated with international business. As discussed, global cities represent appealing sites for MNEs given the characteristics possessed, namely cosmopolitanism, advanced producer services, and interconnectedness. These characteristics are considered to minimize the cost of firms operating abroad, and as such, attract MNEs to global cities. Hence, giving that the network of global cities provides an increasing number of locations supporting firm internationalisation; our first hypothesis is, *ceteris paribus*:

Hypothesis 1: An MNE is more likely to locate its foreign subsidiary within a global city or in the metropolitan area than in other locations.

The hypothesis implies that MNEs gravitate towards global cities when locating their foreign subsidiaries. However, due to the centrifugal forces of agglomeration, this does not exclusively mean within the global cities, but close enough to benefit from the natural advantages of the global city, such as access to markets, products, and labour.

Following the notion that the attributes of global cities are expected to reduce the barriers of doing business in a foreign country – reduced in the form of lower social costs arising from institutional distance, we suggest that:

Hypothesis 2: An MNE is more likely to locate its foreign subsidiary in a global city when the institutional distance is large.

However, MNE location strategy does not only reflect possible benefits, but also potential costs or risks (Alcácer and Chung, 2007). Consequently, highlighting the potential additional economic costs of being located in global cities is essential. For some MNEs, the costs of locating their foreign subsidiary in a global city are probable to offset the possible benefits (Goerzen, Asmussen, and Nielsen, 2013). Alcácer and Chung (2007) argue that location choices are endogenous to knowledge spillovers. Knowledge generating activities and proximity grows the probability for spillovers, and therefore collocating may not benefit all MNEs to the same extent. In fact, some firms may choose to locate away from competitors as a way to protect and preserve their competitive advantage. R&D activities are often scale sensitive, leading MNEs to only establish a few global centres worldwide (Yip, 1995). Moreover, R&D facilities often require space, and the costs of being located within a global city are likely to outweigh any potential benefit (Goerzen, Asmussen, and Nielsen, 2013). In line with the literature, we propose that LOF-reducing advantages found in global cities may play a smaller role for subsidiaries that concentrate on development of scale and scope benefits in production, rather than to serve the local market through sales (ibid). Thus, we arrive at the third hypothesis:

Hypothesis 3: An MNE is more likely to locate its foreign subsidiary outside a global city if the subsidiary operates within a highly R&D-intensive industry under pressure for global integration.

Firms can exploit locations either to improve or to preserve their competitive position in an industry (Alcácer and Chung, 2007). In contrast to R&D-intensive industries, MNEs with subsidiaries operating within demand driven industries dependent on competence exploiting facilities, are expected to gravitate towards global cities. MNEs are better positioned to acquire higher returns on marketing capabilities if they locate their marketing subsidiaries in a global city as it will increase the fit between strategy and resources (Goerzen, Asmussen, and Nielsen, 2013). Hence, the fourth hypothesis states that:

Hypothesis 4: An MNE is more likely to locate its foreign subsidiary within a global city if the subsidiary operates within a highly advertising-intensive industry under pressure for local responsiveness.

As proposed in hypothesis three and four; subsidiaries in industries under pressure for global integration are likely to be located outside a global city, while subsidiaries in industries under pressure for local responsiveness are likely to be located within a global city. However, for subsidiaries in industries with high external pressure for both global integration and local responsiveness, the strategic location decision might be more complex. Arguably, this would mean that in countries where institutional distance is low, the MNE might prefer to locate its subsidiary outside a global city. Conversely, in countries where institutional distance is high, the MNE will have a larger tendency to locate its subsidiary within a global city:

Hypothesis 5: Subsidiaries operating within industries marked by high pressures for both global integration and local responsiveness are more likely to be located within global cities when the institutional distance is large.

Altogether, the hypotheses opens up for an empirical study of our overall problem statement and the arguments outlined by the existing literature on the relationship between MNEs location strategy, LOF, and the beneficial aspects of global cities.
3. Methodology

Methodology can be seen as systematic procedures that help us develop knowledge (Gripsrud, Silkoset and Olsson, 2010), and forms the basis for further research, thus ensuring verifiability. The aim of this chapter is to provide insight and justification for the methodology used in this study. Accordingly, we will first explain the research design, including research philosophy, research approach, and research choice, before providing an overview of the sources for data collection. The second section gives a comprehensive definition of the variables included and how these are treated. Moreover, section three presents the final sample used in the econometric approximation in section four. Lastly in section six, we will do an assessment of the research quality discussing the validity and reliability of the research.

3.1 Research Design

Before deciding on the techniques to obtain data, we have to address the research philosophy, the research approach, and methodological choice. This will increase the validity of the research and the conclusions (Saunders, Lewis, and Thornhill, 2016).

3.1.1 Research Philosophy

In every stage of the research, we have to make numerous assumptions as researchers. These include assumptions about human knowledge (epistemological assumption), realities encountered in the research (ontological assumptions) and how our own values impact the research procedure (axiological assumptions) (Saunders, Lewis and Thornhill, 2016). These beliefs will shape how we as researchers understand and shape our research questions. Consistent and well-considered assumptions will create a credible research philosophy, and form the basis for choice of methodology, research strategy and techniques of data collection and analysis. Hence, we need to be conscious of the philosophical commitments that we make through defining the research strategy, as these choices will have remarkable influence on what we do and how we understand what we are doing (ibid). Saunders, Lewis and Thornhill (2016) identify five philosophies in the field of business and management as illustrated in Table 2. This study has focused on discovering observable and measurable facts and

regularities, and used existing theory to develop hypotheses. Additionally, as we have used a highly structured methodology to facilitate replication, this study falls under the category of positivistic philosophy.

Philosophy	Typical methods
Positivism	Typically deductive, highly structured, large samples, measurement, typically quantitative methods of analysis.
Critical realism	Retroductive, in-depth historically situated analysis of pre-existing structures.
Interpretivism	Typically inductive, small samples, in- depth investigations, qualitative methods of analysis.
Postmodernism	Typically deconstructive, reading texts and realities against themselves, in- depth investigations of anomalies, silences and absences.
Pragmatism	Following research problem and research question, range of methods: mixed, multiple, qualitative, quantitative, action research. Emphasis on practical solutions and outcomes.

Table 2: Brief Descri	ption of Typical	Methods in	Research	Philosophy

Source: Saunders, Lewis and Thornhill (2016)

3.1.2 Research Approach

There are three ways to establish what is true or false and further draw conclusions, namely through induction, deduction, or abduction (Saunders, Lewis, and Thornhill, 2016). Induction draws general conclusions from empirical observations and is often found in qualitative research; deduction draws conclusions from logical reasoning and is often used in quantitative research; and abduction is a combination of the two former approaches. Furthermore, induction represents a systematic process where we draw conclusions based on empirical evidence and further incorporate the findings into the existing literature. Deduction on the other hand, involves building hypothesis from existing literature, which can be subject to empirical scrutiny in the form of testing, and thus be accepted or rejected (Ghauri and Grønhaug, 2010). Abduction combines induction and deduction, and involves an approach that moves back and forth from data to theory. In simple form, induction concerns theory building, deduction concerns theory testing, and abduction concerns theory generation or modification (Saunders, Lewis, and Thornhill, 2016). In this research we have studied

accessible literature concerning MNE location strategy, global cities, LOF and institutional distance, gathered applicable datasets on the BRIC countries, designed hypotheses and tested whether the theory on MNEs also apply for MNEs from the BRIC countries. Consequently, our study suggests an abductive approach.

3.1.3 Research Choice

The first methodological choice addresses the choice between a quantitative, qualitative, or a combined research method. Quantitative and qualitative methods refer to differences in both data collection techniques and data analysis procedures. Quantitative research method is applied if numerical data forms the foundation for the data collection or data analysis, whereas qualitative research methods generates or use non-numerical data (Saunders, Lewis, and Thornhill, 2016). Our study is based on a quantitative research method where we have tested the outlined hypotheses, which have helped us to present, describe, and examine relationships within our data (ibid). Ought to be mentioned, this study could also have applied a qualitative research approach by interviewing senior managers of MNEs in the countries of interest. Yet, this approach was not preferred due to the risk of receiving and further building the research on biased information. Additionally, the difficulty of establishing contact with managers holding sufficient information could have resulted in a small sample. Thus, the results would not be applicable to a broader and larger population. Also, such qualitative study could have led to difficulties in replicating or comparing results over time or across studies. Collectively, these reasons pushed us in the direction of a quantitative approach.

3.1.4 Data Collection

In the process of collecting data, the literature distinguishes between primary and secondary data (Ghauri and Grønhaug, 2010). While primary data concerns information collected by the investigators that carry out the research, secondary data is information already available and gathered for other purposes by other researchers. Malhotra, Birks and Wills (2012) argue that collecting secondary data is an essential component in creating a solid research and should be retrieved and analysed prior to collecting primary data. The justification is that it can provide extensive knowledge and low-cost insights on a given subject. Moreover, they also stress that

researchers should focus on gathering secondary data until these sources have been exhausted and no longer assist in answering the research problem at hand (ibid).

As we employ information that has been gathered for other purposes and collected by other researchers to address our objectives, we rely on secondary data in this study. This includes both raw data in form of datasets as well as published summaries (Saunders, Lewis, and Thornhill, 2016). Secondary data can be either internal, that is, information provided by an organisation to assist the researcher in the analysis, or external which implies that the information is available to the public, either free or through a fee. In this study, we do not collaborate with any organisation, hence, all data is external secondary data. The data covers information about MNEs from the BRIC countries and the location of their subsidiaries, institutional distance, and LOF. How this information was processed is explained in the three upcoming sub-sections.

Subsidiary Location

In order to answer our sub-questions and test the outlined hypotheses, we compiled a dataset consisting of MNEs from emerging markets, more specifically the BRIC countries. The data was obtained from LexisNexis (2013) and was originally designed as four separate datasets. Collectively, the datasets provided information about 783 parents and a total of 3,349 subsidiaries. This information consisted of company name, company type (e.g. 'member', 'parent'), address, ultimate parent company, family role (e.g. 'division', 'subsidiary' etc.), employee count, NAICS (North American Industry Classification System) and SIC (Standard Industrial Classification) codes, business description and year of foundation.

Liability of Foreignness

To test the hypotheses regarding institutional distance and the LOF, our research requires information regarding the institutional environment in all the home and host countries, respectively the regulative, normative and cognitive institutions. The information about the regulative and normative institution was collected through World Economic Forum (WEF), while the information about the cognitive institution was collected through Hofstede Centre

(Hofstede, Hofstede and Minkov, 2010; Schwab and Sala-i-Martín, 2015). The information from the countries was further matched against our core data.

Control Variables

In this study we find it necessary to include control variables to not exclude factors that have a substantial impact on subsidiary location. These are defined as geographic distance and economic distance. To measure geographic distance, we utilised a dataset from CEPII, which provided information about the longitudes and latitudes of the economic centre in 225 countries in the world (Mayer and Zignago, 2011). To arrive at the economic distance between the countries in our sample, we used GNI per capita based on purchasing power parity (PPP) from The World Bank Group (2016). Again, the information from the countries was matched against our core data.

3.2 Definition of Variables

Clarifying and measuring cross-national distance along multiple dimensions is important as different types of distance can influence firms and managerial decisions in various ways (Berry, Guillén and Zhou, 2010). In the preceding sections the dependent, independent and control variables will be clarified. First, we will address subsidiary locations, which include explanation for global cities specifications, delineation of city boundaries and the approach for coding subsidiary location. Secondly, this section provides a description of the independent variables, by justifying the sources applied to create measurements of LOF, and how subsidiary industry has been classified. Lastly, the control variables are presented. The overall purpose of this section is to disclose all the variables in detail and give justification for how the variables are measured. The econometric approximation for these measurements is to be found in section 3.4.

3.2.1 Dependent Variable: Subsidiary Location

To facilitate discussion concerning our problem statement, clarification about the dependent variable, the subsidiary location, is necessary. This involves specification of global cities, which is, how to define global cities, delineation of the city boundaries, and how to classify the subsidiary location. The following sections will address these specifications.

Data Processing

Quantitative data that has not yet been processed and studied, that is, data in raw form, convey minimal meaning for most people. Therefore, this data needed to be processed in order to be transformed into useful information (Saunders, Lewis, and Thornhill, 2016). For the purpose of this research, we manually compiled and organized the information into one comprehensive dataset and excluded irrelevant information. Non-consistent information such as year of foundation and number of employees were excluded, as this information was only available for a limited number of companies. Additionally, subsidiaries that did not provide information regarding location were removed from the dataset. In those cases where the parent company was left with zero subsidiaries, the company was totally removed from the dataset. Moreover, based on our objective to investigate the location strategy of MNEs foreign subsidiaries, we excluded subsidiaries operating in the same country as their parent. As regards to Hong Kong and the relation to China, we treated Hong Kong as independent from China due to its high degree of autonomy (BBC, 2016). We also excluded subsidiaries that were not categorized as "member" but as joint venture, plant, affiliate, branch, division, holding or unit. This was done in order to reduce any uncertainty with ownership status, implying that our dataset only contain subsidiaries where the parent company owns more than half of the voting power, and therefore have substantial control of the subsidiary (BDO International, 2006).

The final processed dataset provided us with information about 322 MNEs and their 1,441 accompanying subsidiaries, their address, and industry of operation in form of NAICS codes. This processing resulted in a reduction of 1,908 subsidiaries, i.e., 57% compared to the merged number from the four initial datasets. An overview of our final data is provided below in Table 3.

Table 3: Description of Core Data

	Brazil	Russia	India	China	Total
Parents	22	20	163	117	322
Percentage parents	7%	6%	51%	36%	100%
Subsidiaries	135	108	798	400	1,441
Percentage subsidiaries	9%	7%	55%	28%	100%
Average number of foreign subsidiaries	6.1	5.4	4.9	3.4	4.5
Countries	44	42	94	53	119

Source: Own analysis

As presented in Table 3, China and India represent a significant share of both parents and subsidiaries. However, this is not surprising, as they are considered to have some of the most aggressive outward investing firms within the emerging region over the last decade. Between 2000 and 2007, the Chinese and Indian outward foreign direct investment (OFDI) flows expanded by respectively 150% and 168%, hence proposing that a new internationalisation process is taking place in these emerging economies (Pradhan, 2011). Moreover, among the 322 MNEs, 51% are derived from India; hence it is not surprising that the largest portion of subsidiaries has India as home country. However, it may seem somewhat unexpected that China is far behind India when it comes to the number of parent MNEs and subsidiaries in our dataset as China had twice as much OFDI (measured in US billion) as opposed to India in the time period 2000 to 20007 (ibid). However, a possible explanation is that approximately 231 of the observations from China were omitted because they did not have any "member" or "parent" title and because there was lack of information regarding the address of the subsidiaries.

On the lower end, we find Brazil and Russia with modest shares of parent MNEs and subsidiaries. The large differences between the four countries may paint a picture of the domestic policy framework. Government support for OFDI varies across the four countries. As disclosed in the introduction, while the government of both China and India established a 'Go Global' policy to encourage OFDI back in 2000, no such government support exists yet in Brazil and Russia. Brazil's leadership wants to create global players, but there is not yet a policy in place to promote this objective. Lastly, the Russian Federation does not have a

specific policy promoting OFDI, and capital controls exist (Sauvant, 2005).

The Indian MNEs are the most geographically dispersed with presence in 94 countries. This implies that Indian MNEs are highly exposed to the foreign environment and is the most internationalized country in our dataset. By comparing the number of subsidiaries and the number of countries the MNEs are present in, it is evident that China stands out. Despite that these MNEs possess over 400 subsidiaries the Chinese MNEs are only present in 54 countries. This might suggest that the Chinese MNEs have a preference for specific countries or continents. Additionally, as seen from the table, the Chinese MNEs are also the ones with the lowest average number of foreign subsidiaries.

Specification of Global Cities

Beaverstock, Taylor, and Smith (1999) highlight the difficulties of creating a roster of world/global cities as these cities has not been distinctly defined, in contrast to terminologies such as mega-cities, which can be defined relative to a given population threshold. Therefore, these researchers have aimed to construct a roster of world cities that includes different city classifications based on their level of integration in the world network (GaWC, 2016). Building on their work, Globalization and World Cities research network (GaWC) have published "The World According to GaWC 2012", where they provide an updated overview of world cities (GaWC, 2014).

The roster provided by GaWC classifies cities in distinct levels in terms of their "advanced producer services using the interlocking network model. Indirect measures of flows are derived to compute a city's network connectivity – this measure a city's integration into the world city network. The connectivity measures are used to classify cities into levels of world city network integration" (GaWC, 2016). The GaWC Research Network works as the leading think-tank on cities in globalization (ibid) and the description of world cities is closely related to the outlined theory concerning global cities. Hence, we find it suitable to apply this particular roster in our study and therefore refer to these cities as "global cities". Moreover, Goerzen, Asmussen, and Nielsen (2013, p. 436) review this roster as "theoretically transparent and empirically rigorous", thus strengthening the credibility of the roster. Ought to be mentioned, other researcher has also defined lists of global cities, however, these works

recognize fewer cities. Some of these researchers are, among others, The Economist Intelligence Unit (2012) who benchmark global city competitiveness, and A.T. Kearney (Hales et al., 2015) who provide a Global City Index.

GaWC published their first global city roster in 2000, and have since then published updated versions in 2004, 2008, 2010 and lastly in 2012. The roster from 2012, also the one applied in this study, is based on the office networks of 175 advanced producer service firms in 526 cities. Based on this material, the researchers identified a total of 307 world cities. In more detail, the classification recognizes 45 alpha cities, 77 beta cities, 59 gamma cities, 41 high sufficiency cities, and 84 sufficiency cities (GaWC, 2014). An explanation of these classifications in descending order can be found in Table 4, and a visualisation of the global cities identified by GaWC (2014) is presented in Illustration 3. Additionally, an exhaustive roster of cities that are assigned these definitions can be found in Appendix 1.

Classification	Description
Alpha++ cities	More integrated than all other cities and constitute their own high level of integration
Alpha+ cities	Highly integrated cities, largely filling in advanced service needs for the Pacific Asia
Alpha and alpha- cities	Important global cities that link major economic regions and states into the world economy
Beta level cities	Important global cities that are instrumental in linking their region or state into the world economy
Gamma level cities	Cities linking smaller regions or states into the world economy, or whose major global capacity is not in advanced producer services
Sufficiency cities	Smaller capital cities, and traditional centres of manufacturing regions.

Table 4: Global City Categories

Source: GaWC (2016)

Illustration 3: Map of Global Cities



Source: Own configuration based on the global city roster provided by GaWC (2014)

Delineation of Global City Boundaries

In relation to their economic function, cities allow for agglomeration economies and immense concentration of information on the most recent developments. Historically, cities have provided the society with something we can refer to as centrality, and remain an essential characteristic of today's global economy. However, one might question how new technologies of communications can change the definition and delineation of centrality (Sassen, 2004). Previously, centrality was tantamount with the downtown or the central business district, abbreviated CBD. Today, however, as a consequence of the evolution of modern advanced communication technologies, one finds a distortion of the spatial coordinates of centrality. As noted by Sassen (2004), the centre can take diverse geographic forms such as the metropolitan area in terms of grid of nodes of high business activity. These different nodes are joined through digital highways, and therefore represent "a new geographic correlate of the most advanced type of centre" (Sassen, 2004, p. 37). Also Friedman (1986) noted that world cities

does not only encompass the central city, but also the entire economic areas surrounding the city.

Researchers have different distinctions between the inner city and the areas surrounding the city. Goerzen, Asmussen, and Nielsen (2013) initially argued that the dynamics assigned to cities are much localised in nature, and used official city boundaries to differentiate global cities from other locations. They also referred to Gordon and McCann (2000) who find that the inner city of London, characterised by finance and media industries, was in contrast to the metropolitan area surrounding the city. Due to the blurred boundaries of centrality, the empirical question is how precise classification of location choice to apply. Hence, Goerzen, Asmussen, and Nielsen (2013) included the metropolitan area as a third category to obtain a more nuanced understanding of MNE positioning. Following their approach, we included the inner city, the metropolitan area surrounding the city, and the periphery as three distinct categories. This categorisation and their accompanying codifications are further explained in the following sub-section.

Coding of Subsidiary Location

Following the procedure of Goerzen, Asmussen, and Nielsen (2013), we coded the subsidiaries according to whether they were located in a given city or not. This implies that our dependent variable is situated in one of three categories:

- 2 located within a global city proper
- 1 located in a metropolitan area surrounding a global city
- 0-located in the periphery, i.e. anywhere else

We followed the approach of Mehlsen and Wernicke (2016) in terms of defining city boundaries, and operationalised the classification as follows: The inner global city classification is delineated to a radius of maximum 10 kilometres. This implies that all subsidiaries that were located within this distance are situated in category 2. However, the territorial basis of cities does not only comprise of the centre of the city, but also the metropolitan area surrounding the city (Goerzen, Asmussen, and Nielsen, 2013; Sassen, 2004). Consequently, subsidiaries located outside the inner city but within a radius of 60

kilometres are considered to be located in the metropolitan area surrounding a global city. This implies that these subsidiaries are situated in category 1. The final category, i.e. 0, concerns subsidiaries located in periphery (anywhere else), implying that their location exceeding a radius of 60 kilometres from the inner global city. To determine the distance between a subsidiary location and a global city, we applied Google Maps. We mapped the global cities and the addresses of the 1,441 subsidiaries, before manually measuring the distance between different points in space by using the tools accessible in this mapping service. Despite careful assessment, this approach can make the study vulnerable to processing error by the researchers.

Notable, we only measured the distance between subsidiaries and global cities that were located in the same country. As an example of this; two subsidiaries were located only 5.5 kilometres and 8.6 kilometres from the beta city Detroit in United States. However, the subsidiaries were located within the official country boundaries of Canada, hence accommodating the rules and regulations of the Canadian government. Therefore, the subsidiaries were coded as being located in the periphery as the radius exceeds 60 kilometres from the nearest Canadian global city. An illustration of this example is provided below in Illustration 4. Moreover, when a subsidiary was located between two global cities, we assigned the subsidiary a location code relative to the nearest city within that country.

This approach resulted in 225 subsidiaries categorised as 0 (i.e. located in the periphery), 499 categorised as 1 (i.e. located in a metropolitan area surrounding a global city), and 682 categorised as 2 (i.e. located within a global city proper). Additionally, 165 subsidiaries were located in countries that did not possess global cities.



Illustration 4: Example of Subsidiary Coding

Source: Own configuration in Google Maps

3.2.2 Independent Variables

Based on our problem statement we have identified two independent variables, respectively LOF and subsidiary industry. This implies that a change in one of these variables is expected to cause a change in our explanatory variable; subsidiary location (Saunders, Lewis and Thornhill, 2016). The following section will investigate how we can construct valid measures that capture the components of the LOF, and also provide an overview of how subsidiary industry can be assessed in terms of pressures towards global integration and/or local responsiveness.

Liability of Foreignness

LOF has been demonstrated empirically in a number of studies (e.g. Zaheer, 1995; Mezias, 2002a), and several sources of LOF have been identified. These sources include local stakeholder discrimination against foreign firms, the MNE's uncertainty about host market

conditions, and the complexity of doing business over a geographic distance (Zaheer, 1995). While the LOF has traditionally been seen as a consequence of internationalization - a cost incurred as soon as the MNE goes outside its domestic market - it may vary significantly between different international markets depending on the diversity and distance between home and host markets (ibid). Our aim is to examine the connection between subsidiary location and the LOF driven by regulatory, normative, and cognitive institutional distances (Eden and Miller, 2004). First, we will first present and justify the sources of information regarding the components of institutional distance, before we examine the measurement instruments for the three institutional dimensions.

Sources of Regulative and Normative Institutions

Following Xu, Pan, and Beamish (2004) and Mehlsen and Wernicke (2016), we used the Global Competitiveness Report (GCR) published by WEF as our source of regulatory and normative institutions. GCR ranks countries based on the Global Competitiveness Index, which integrates the macroeconomic and the micro/business aspects of competitiveness into a single index. The report determines the ability of countries to provide high levels of prosperity to their citizens, depending on how productively the country uses available resources. Hence, the Global Competitiveness Index defines competitiveness as the set of institutions, policies, and factors that determine the level of productivity of an economy. This in turn sets the level of economic prosperity (Schwab and Sala-i-Martín, 2015). The report includes statistical data from internationally recognized agencies in addition to data from the WEF's annual Executive Opinion Survey. This survey was administered to over 13,000 business leaders in 140 economies who responded the questions on a seven-point scale from worst to best (ibid). The survey captures valuable information on a broad range of factors that are critical for a country's competitiveness and sustainable development, and for which data sources are scarce or, frequently, non-existent on a global scale.

We measured institutional distance between the home country of an MNE and the host country of its subsidiary using the sub-dimensions of regulative and normative distances. To develop these measures, we used available data from 2010 to 2013, and compiled nine indicators related to the regulative aspects of institutional distance, and eight indicators related the normative aspect. As large positive or negative fluctuations can occur over long

periods of time, using single year data can fail in capturing the actual trend (Simonoff, 2012). Hence, we made a four-year average to represent the institutional environment of a given country.

We acknowledge that the questions in the survey are not designed to directly reflect the institutional environment of a given country, and that the indicators does not amount the totality of the regulatory and normative institutions in each country. However, given the large scale of the WEF survey, we believe the indicators provide a relatively good measurement of both the regulative and normative environments surrounding business operations in each country market, as they cover topics of interest for this study (Xu, Pan, and Beamish, 2004).

Source of Cognitive Institutions

To measure the cognitive institutions, we applied national culture as a proxy. While culture may be closely related to both normative and cognitive institutional pillars (Eden and Miller, 2004), we argue cognitive institutions are most closely associated with culture (Jepperson, 1991). This is due to the fact that the cognitive institutional pillar reflects the belief and values shared by the people in a given country, and affect the way people notice, characterise, and interpret stimuli from the environment (Kostova, 1999), which is related to Hofstede's definition of national culture; "the collective programming of the mind distinguishing the members of one group or category of people from others" (Hofstede, Hofstede, and Minkov, 2010, p. 6). The dimensions of national culture, often conceptualised as cultural distance, is widely used in international business research primarily because of its scalability of the complex, intangible and subtle structure of culture (Shenkar, 2001).

The most widely used approach to cultural distance is based on Geert Hofstede's four measures of national culture (Berry, Guillén, and Zhou, 2010), albeit scholars have developed alternative measures such as Schwartz' (1994) cultural values framework and the Global Leadership and Organizational Behaviour Effectiveness (GLOBE) (House et al., 2004). International business scholars find Hofstede's approach appealing due to the size of sample and the codification of cultural traits along a numerical index (Kogut and Singh, 1988; Berry, Guillén, and Zhou, 2010). Hofstede analysed a large database of employee value scores obtained between 1967 and 1973 from more than 117,000 IBM employees working in more

than 70 different countries. He then performed a factor analysis and proposed power distance, uncertainty avoidance, individualism, and masculinity as the key distinguishing aspects of national culture (Hofstede, Hofstede, and Minkov, 2010; Drogendijk and Slangen, 2006; Berry, Guillén, and Zhou, 2010). In this study, we will use Hofstede's indices in measuring cultural distance as we find it more applicable than the alternative measures, and due to the fact that the data covers a large number of countries. Furthermore, to arrive at the cultural distance between the home and host countries in our sample, we build our approach on the Kogut and Singh cultural distance index (1988) - a composite index based on the deviation from four of Hofstede's national culture scales.

Although the standard measure of cultural distance proposed by Kogut and Singh (1988), based on Hofstede's cultural dimensions remain the most extensively used measure of culture, the cultural scores have received criticism as the scores can be ambiguous and contradictory (Shenkar, 2001; Berry, Guillén, and Zhou, 2010). According to Shenkar (2001), the methodology used in measuring cultural distance comprises several hidden assumptions underlying its use, including generic limitations such as the assumptions of symmetry and temporal stability. The assumption of symmetry suggest that economic actors in country A will view their counterparts in country B exactly the same way that country B actors will view those in country A. The assumption of temporal stability refers to the idea that cultural distance dimensions and scores are invariant to time considerations, i.e. they are 'anchored' in time (Merchant, Tung, and Verbeke, 2012). It is reasonable to argue that the assumptions do not always directly affect the quality of strategic analysis, whether conceptual or empirical, but caution is still needed when cultural symmetry is simply assumed. Consequently, we keep in mind its limits and peculiarity when applying this framework.

To alleviate these generic challenges, Merchant, Tung, and Verbeke (2012) recommend that one should include several countries in the research and study the phenomenon from different perspectives. Hence, we selected four home countries and several host countries, which allowed us to measure distance from the home countries to different points in space. We recognize that this may not fully account for the conceptual challenges, but may construct more viable measurements. Also of significance when addressing cognitive distance is that MNEs from strong institutional economics might have an advantage over MNEs from weaker institutional environments. However, Xu, Pan, and Beamish (2004) argue that when a firm from a strong institution is situated in a weak environment, it may still experience the LOF because its behaviour deviates from normal expectations in that environment.

Defining Regulatory Institution

The regulatory institution concerns the "setting, monitoring, and enforcement of rules" (Xu and Shenkar, 2002, p. 610) where distances between the home country of the MNE and host country of its subsidiary might increase both discriminatory, relational, and unfamiliarity hazards, which in turn can result in increased LOF. The definition involves rules and laws intended to establish or maintain stability and order in the community (Kostova and Zaheer, 1999). This means that all possible aspects of regulation is incorporated, hence, it is very difficult to cover empirically. However, by selecting a wide range of variables we argue that we cover the regulatory institutions well. Following Xu, Pan, and Beamish's (2004) suggestion, we selected nine items from the Global Competitiveness Report to describe the regulatory environment of a country. These are outlined in Table 5.

Institutional Feature	WEF Global Competitiveness Report Indicators
Setting	1.07 Favouritism in decisions of government officials
Setting	1.12 Transparency of government policy making
	1.06 Judicial independence
Monitoring	1.10 Efficiency of legal framework in settling disputes
	1.11 Efficiency of legal framework in challenging regulations
	1.01 Property rights
Enforcement	1.02 Intellectual property rights
Eniorcement	1.16 Reliability of police services
	6.03 Effectiveness of anti-monopoly policy

Table 5: Regulatory Institutions

Source: Schwab and Sala-i-Martín (2015)

The two GCR indicators that cover the institutional feature "setting" assesses favouritism shown by government officials in an country to well-connected firms and individuals when deciding upon policies and contracts. It also concerns the ease of which businesses can obtain information about change in government policies and regulations affecting their activities (Schwab and Sala-i-Martín, 2015). Arguably, home country firms are likely to have better insight, familiarity and understanding of governmental systems and procedures.

To detect the institutional features of monitoring, we selected three indicators that address the independence of the judiciary from influences of members of government, citizens or firms, and the efficiency of the legal framework for private businesses in settling disputes. The former allows for efficient and unbiased monitoring of the law as well as a levelled playing field for foreign MNEs, while the latter ensures that informal channels are not prevalent in settling disputes. Additionally, efficiency of legal framework in challenging regulations looks at to what extent individuals, institutions and businesses can obtain justice through the judicial system.

To help us uncover the enforcement of basic requirements for doing business, we selected four indicators, namely the protection of property rights, intellectual property rights, reliability of police services, and the effectiveness of promotions of anti-monopoly competition. It is more likely that economic agents will invest in countries where they believe they will reap expected benefits and returns without needing to spend excessive amounts of time and money protecting their property. Formally, this will depend on the capability of institutions to ensure a fundamental level of security and enforcing property rights (Schwab and Sala-i-Martín, 2015).

Defining Normative Institutions

The normative institution consists of work norms and habits in the institutional environment, and specifies how things should or should not be done, reflecting the values and norms of a society (Eden and Miller, 2004). This dimension specifies how MNEs should interact with external stakeholder on a societal, customer, and employee/management level. As the normative pillar is rooted in social beliefs one can argue that foreigners who are not a part of the host country's society, will experience greater difficulties in terms of understanding "how thing should be done" in the country they choose to invest in. Conflicting and contrasting

norms can further intensify the hazards that promote LOF. For example, if a subsidiary is considered as an outsider, it might intensify the challenges of obtaining external legitimacy, and informal discrimination might arise (ibid). Presented below are the indicators used to describe the normative pillar.

Institutional Feature	WEF Global Competitiveness Report Indicators
Societal	1.17 Ethical behaviour of firms
Societai	1.18 Strength of auditing and reporting standards
Customor	6.15 Degree of customer orientation
Customer	6.16 Buyer sophistication
	7.01 Cooperation in labour-employer relations
Employee/management	7.06 Pay and productivity
Employee/management	7.07 Reliance on professional management
	11.09 Willingness to delegate authority

Table 6:	Normative	Institutions
----------	-----------	--------------

Source: Schwab and Sala-i-Martín (2015)

The first indicator concerning the societal institutional feature discusses the corporate ethics of companies and highlights the ethical behaviour of companies in interaction with public officials, politicians, and other firms. The second indicator addresses financial auditing and reporting in terms of quality. One might argue that a high score on this indicator can reduce the unfamiliarity hazard as reported information about stakeholders and competitors is considered as trustworthy.

Moving on to the second institutional feature, the first indicator concerns how well companies treat customers. A high score implies that firms are particularly responsive and seek customer retention. Significant difference in the scores between the home and host country might contribute to increase the challenges of achieving external legitimacy as the firms might have different approach to the importance of customer interaction. The second indicator, buyer sophistication, refers to what basis buyers make purchasing decisions. A high score on this indicator may reflect demanding customers in some countries, which in turn forces companies

to be more customer-oriented, and hence imposes the discipline necessary for efficiency to be achieved in the market. On the other hand, a low score would reflect a tendency for customers to base their preferences solely on the lowest price (Schwab and Sala-i-Martín, 2015).

To detect the institutional features of employee/management, we selected four indicators. The first concerns how the labour-employer relation is characterized, ranging from confrontational to cooperative. The second examines to what extent pay is related to employee productivity. Reliance on professional management looks at who holds the senior management positions. A low score indicates that friends and relatives, without regards to merits, often hold management positions, while a high score implies that managers are chosen based on merits and qualifications. The fourth indicator concerns the willingness of firms to delegate authority to subordinates. Altogether, these 'pillars' specifies values and norms for employees and management teams. Higher normative institutional distance is positively related to LOF (Eden and Miller, 2004). Hence, knowing the values and norms of the host-market is believed to be critical for ensuring that workers are allocated to their most effective use in the economy and that they are given incentives to work by their best ability.

Defining Cognitive Institutions

The cognitive institutional pillar reflects the belief and values shared by the people in a given country, and affect the way people notice, characterize, and interpret stimuli from the environment (Kostova, 1999). As mentioned earlier, we used Hofstede's cultural dimensions to portray cognitive institutions. The cultural dimensions represent independent preferences for one state of affairs over another that distinguish countries from each other. The original theory proposed four dimensions of which cultural values could be analysed. Hofstede has later incorporated two more dimensions, namely long-term orientation and indulgence versus self-restraint. However, these two dimensions are often omitted in studies incorporating a composite index of cultural distance due to lack of measurement for many countries (Kandogan, 2012). The four dimensions included deals with stereotypes and symbols in terms of power distance, individualism, masculinity, and uncertainty avoidance, and are defined in Table 7.

Table 7: Cognitive Institutions

Dimensions	Explanation
Power distance	The extent to which the less powerful members of institutions and organisations within a country expect and accept that power is distributed unequally.
Individualism vs. collectivism	The degree of interdependence a society maintains among its members.
Masculinity vs. feminism	Masculine society measure of success is achievement and winning. Feminine society measures success by quality of life. Standing out from the crowd is not admirable.
Uncertainty avoidance	The extent to which a society shows a pragmatic future-oriented perspective rather than a conventional historical short-term points of view.

Source: Hofstede, Hofstede, and Minkov (2010)

Power distance indicates greater fear of and deference to bosses. Societies with a large degree of power distance accept a hierarchical order where everybody has a place and needs no further justification. Contrary, in societies with low power distance, people strive to equalise the distribution of power and demand justification for inequalities of power. The next dimension distinguishes between societies with different preferences of individualism and collectivism. Individualism pertains to societies where the ties between individuals are loose, meaning that everyone is expected to look after him - or herself and his or her immediate family. Collectivism as its opposite pertains to societies where people from birth onward are integrated into strong, cohesive in-groups, which throughout people's lifetime continue to protect them in exchange for unquestioning loyalty. In the third dimension, masculine society represents a preference for achievement, heroism, assertiveness and material rewards for success. Its opposite, femininity, stands for a preference for cooperation, modesty, caring for the weak and quality of life. The last dimension, uncertainty avoidance, indicates a desire to avoid insecurity by following rules, continuing employment, and reducing stress. Countries that exhibit strong uncertainty avoidance maintain rigid codes of belief and behaviour, whereas weak societies maintain a more relaxed attitude (Hofstede, Hofstede and Minkov, 2010).

Collectively, the cultural distance measurement between two countries captures the dimensions of cognitive institutions. Moreover, Hofstede, Hofstede and Minkov (2010) argue that national culture is often an effect of the combination of the identified dimensions. This means that for us to extract meaningful information about the cultural differences between countries, we ought to treat the dimensions simultaneously. Hence, we apply a composite index that accounts for all the cultural dimensions as a whole.

As a closing comment in the discussions of LOF, it is important to highlight that these institutional features and the cultural dimensions, does not cover all aspects of the regulatory, normative and cognitive institutions. Additionally, we do not assume that these indicators are relevant for all business operations to the same extent. Nonetheless, we hold the belief that the indicators will collectively provide us with a nuanced view of the institutional environments in the countries of interest. How these institutions are measured will be elaborated under section 3.4.

Subsidiary Industry

The second independent variable is identified as subsidiary industry. As expressed in hypothesis 3, we propose that subsidiaries operating within highly R&D-intensive industries under pressure for global integration are more likely to locate outside a global city. Contrasting, a subsidiary operating within highly advertising-intensive industries under pressure for local responsiveness, are believed to locate within a global city. Also, subsidiaries operating within industries marked by high pressures for *both* global integration and local responsiveness are more likely to be located within a global city if the institutional distance is large. This notion is based on the work of Fortanier, Muller, and van Tudler (2007), who measured the pressures towards global integration and local responsiveness (i.e. IR pressures) based on a sample of 336 non-financial triad-based firms from Fortune Global 500 firms. The researchers used the level of R&D and advertising intensity to assess the relative level of IR pressures towards local responsiveness (i.e. advertising intensity). Contrasting, automotive, chemicals and machinery industries are identified as being prone to high integration pressures (i.e. R&D intensity). Pharmaceutical is the only industry that is

identified with high pressure for both global integration and local responsiveness, while the petroleum and construction industry are marked with low score on both R&D and advertising intensity. As these findings are similar to the suggestions of other researchers in terms of integration and responsiveness pressures, we argue that their findings are valid, and hence, applicable in this study.

Notable, we chose to classify subsidiary industry instead of parent industry. We justify this choice based on the observation that many of the MNEs operate within several industries. For example, the Indian based company Banco Products Ltd, have one subsidiary managing manufacturing and another managing wholesales. Hence, we argue that classifying subsidiary industry over parent industry will give better insight in the strategic location choice of subsidiaries.

Industry	NAICS Co	Level	
Integration pressures			
Automotive	336100	336300	4.level
Chemicals	325100	325900	4.level
Computers & related	334000	334000	3.level
Electric Equipment	335100	335900	4.level
Machinery	333000	333000	3.level
Other transport	336000	336000	4.level
Responsiveness pressures			
Retail	440000	440000	2.level
Telecommunications	517000	517000	3.level
Wholesale	420000	420000	2.level
Mixed pressures			
Pharmaceutical	325400	325400	4.level

Table 8: Industry Classification

Source: Classification of industries based on the work of Fortanier, Muller, and van Tulder (2007) and NAICS classifications from The United Census Bureau (2016a).

NAICS is a hierarchical classification system consisting of a six-digit code, offering five levels of detail. The more digits in a code, the more detailed information is provided. The

interpretation is as follows; the first two numbers identify the economic sector, the third number represent the subsector, the fourth number designate the industry group, the fifth number identify the NAICS industry, and the last number reflects the national industry (The United States Census Bureau, 2016b). As shown in Table 8, we have assigned the industries with different levels to match the identification portrayed by Fortanier, Muller, and van Tudler (2007). Some of the industries are classified in level 2, such as wholesale and retail. Hence, it is important to inform that such general classification might cause oppression of small industries, as the result will be dominated by the larger industries within the wholesale or retail sector.

Based on the information provided in the table, we defined three dummy variables and coded the industries based on whether they were dominated by integration, responsiveness, or mixed pressures. The industries belonging to each of the three categories are all identified as being dominated by 'high pressures' of integration, responsiveness, or both by Fortanier, Muller, and van Tudler (2007). The remaining industries that are not identified in the table are believed to be under lower pressures as opposed to those listed in Table 8. This implies that we are very restricted to the industries identified by these researchers, i.e. there are industries in our sample that are not included in their study. These include, among others, finance and insurance, and oil and gas extraction. Also, we excluded industries that were not considered to be prone to significant integration and/or responsiveness pressures (i.e. only moderate). This was done to avoid including industries that are not assumed to be representable for significant integration and/or responsiveness pressure.

3.2.3 Control Variables

We identified LOF and subsidiary industry as two independent variables, and therefore expect these to have an influence on MNEs choice of subsidiary location. However, we believe that there are other factors that influence the choice of subsidiary location, and therefore find it necessary to include two control variables we believe will influence the experiment results. In other words, the control variables are included to control for other factors influencing the dependent variable. Inspired by Ghemawat's (2007) "CAGE framework" - a framework in which four types of distances are identified, respectively cultural, administrative, geographic and economic - we controlled for geographic and economic distance. Other control variables

such as the MNE international experience, measured as the average subsidiary age (Goerzen, Asmussen, and Nielsen, 2013) could also be identified. The implication is that the longer experience the foreign subsidiaries have in the specific host country, the smaller will the LOF be. However, information about the age of each subsidiary was not provided in the datasets from LexisNexis, and ruled out as a control variable. In addition, as emphasized by Beugelsdijk and Mudambi (2013), many of the distance dimensions are highly correlated (Berry, Guillén, and Zhou, 2010), which further implies that including too many dimensions can increase the difficulty of extracting their individual effects (Zaheer, Schomaker, and Nachum, 2012). Therefore, we restricted the number of control variable to two.

Geographic Distance

Holding all else equal, the further away a country is, the more challenging it will be to conduct business in that country. The most obvious consequence of geographic distance is the costs incurred due to physical transportation, which has a significant impact on trade. However, gravity models indicate that geographic distance also tend to have an influence on FDI, implying that FDI tends to subside as distance increases, reflecting that geographic distance gives rise to both communication and transportation costs (Ghemawat, 2007). Researchers have found that proximity matters as knowledge moves slowly across geographic boundaries, and geographic separation has shown to impede trust and relationship-building and cause problems concerning information asymmetry (Goerzen, Asmussen, and Nielsen, 2013). Furthermore, geographic dispersion of financial activities across countries increases the complexity of a firm's central functions and escalates the importance of handling and coordinating the network in which the firm operates in (Sassen, 2004). Consequently, we believe the geographic distance between these different points will have an impact on the choice of subsidiary location. Hence, we included geographic distance as a control variable.

Arguably, the optimal approach for calculating geographic distance would be to measure all the individual distances between the MNE's headquarter and their respective subsidiaries, i.e. the same methodological approach applied when classifying subsidiary location. However, we consider this process to be unnecessary time consuming and therefore prefer a statistical approximation. The literature suggests different ways of measuring geographic distance. We followed the method of Berry, Guillén, and Zhou (2010, p. 1465) who measured geographic

distance as the "great circle distance between two countries according to the coordinates of the geographic centre of the countries". To calculate the geographic distance between countries, we decided upon a reference point in each country. Mayer and Zignago (2011) describe a simple measure for calculating geodesic distance¹ by only considering the main city of each country, i.e. the "economic centre". Usually, the capital is considered to be the main city in a country, however, in some cases the capitals are not populated enough to be represented as the centre. As an example, Sao Paulo is considered to be the economic centre in Brazil, and not the capital Brasilia. To obtain coordinates of these cities, we utilised "GeoDist" - CEPII's database on distance, which is largely cited in the gravity literature (Mayer and Zignago, 2011).

Economic Distance

Multiple studies within the field of international business have investigated the impact of economic distance on the choice of foreign market. In simple form, economic distance can be defined as the "difference in economic development and macroeconomic characteristics" (Berry, Guillén, and Zhou, 2010, p. 1464). The literature has often focused on three indicators in terms of economic distance, respectively GDP per capita, prevailing inflation rates, and the intensity of trade with the rest of the world (measured as the sum of export and import as a percentage of GDP). These indicators are seen as important due to their correlation with consumer purchasing power and preference, as well as macroeconomic stability and the openness of the economy in terms of external impacts. In turn, these indicators are said to impact, among others, firm performance and survival (Berry, Guillén, and Zhou, 2010). Arguably, to be able to draw inferences on the MNE's choice of subsidiary location, we find it appropriate and necessary to include economic distance as a control variable.

Campa and Guillén (1999) have, among others, developed a measure for calculating economic distance index. They used Gross National Income (GNI) per capita (formerly GNP per capita), adjusted by purchasing power. Based on their method we collected the GNI per capita based on purchasing power parity (PPP) for all the countries of interest. This

¹ Geodesic, also called great circle path, is the shortest distance between two points (Mwemezi and Huang, 2011)

information was obtained from The World Bank Group (2016) and the numbers concerns 2013. Although these numbers were available for 2014, we found it more correct to apply numbers from 2013 to correspond with the firm level data from LexisNexis. We calculated the economic distance by taking the GNI per capita for each home country subtracted by the GNI per capita from the host countries. Notable, The World Bank did not provide the GNI for Argentina and Taiwan, meaning that these two countries were removed from the dataset.

3.3 Final Sample

The dataset presented in section 3.2.1 will be used to answer our first hypothesis concerning the tendency of MNEs to locate their subsidiaries within a global city or not. However, to allow for testing of the remaining hypotheses, the dataset required further processing. Based on the objective of the second hypothesis to investigate MNEs tendency to locate its foreign subsidiary in a global city when the institutional distance is large, we excluded countries that did not possess global cities. Additionally, Hofstede, Hofstede and Minkov (2010) did not provide information regarding institutional distance on certain countries and The World Bank Group (2016) did not provide the GNI per capita for Argentina and Taiwan. Hence, these countries were also excluded from the dataset.

After this processing, the dataset consisted of 1,327 subsidiaries distributed in 73 countries. This implies a reduction of 114 subsidiaries and 46 countries compared to the dataset used to test the first hypothesis. A visualisation of this information is provided below. As displayed in Illustration 5, the included countries are largely spread, implying that we are able to cover a great deal of institutions, and that we are well positioned to answer the hypotheses.

Table 9: Final Sample Data

	Brazil	Russia	India	China	Total
Parents	20	20	159	111	310
Subsidiaries	108	94	750	375	1,327
Percentage subsidiaries	8%	7%	57%	28%	100%
Countries	34	33	64	39	73

Source: Own analysis

Illustration 5: Included Countries



Source: Own configuration from Mapchart (2016)

3.4 Econometric Approximation

As the choice of econometric approach will influence the validity and reliability of the research, we follow acknowledged methods and procedures within the field to ensure research quality. In this section, we present the econometric approach used to test and further answer our hypotheses. The findings obtained from the econometric approximation are represented in the subsequent chapter.

3.4.1 Regulative and Normative Distances

To create measurements on the regulatory and normative distance between the home country of the MNE and the country of its subsidiary, we followed the procedure of Xu, Pan, and Beamish (2004). This implies that we made use of factor analysis, where the distance was measured as the absolute difference between the scores on the countries regulatory and normative dimensions. To conduct this analysis we applied Stata 14.

Factor analysis is a method used for the purpose of data reduction. The basic idea is to a have small number of latent variables (factors) to represent a larger set of variables (Torres-Reyna, 2016). In other words, the reasoning for applying a factor analysis in this study was to check whether the defined indices and dimensions concerning regulatory and normative institutions, can be compiled into a single index. To enable this, the variables must be correlated to some extent to avoid the number of factors to be the same as the number of variables (Cornish, 2007). Therefore, a proper analysis starts with the construction of a correlation matrix of the variable involved (Mulaik, 2010), and forms the basis of the factor analysis.

It is important to put emphasis on how many factors to retain as including too few may result in loss of information, while including too many may lead to inclusion of unimportant and random information. In turn, both of these errors can give rise to misleading results (Ledesma and Valero-Mora, 2007). There are several heuristic rules of thumb to determine the number of factors, such as Kaiser's Eigenvalues-Greater-Than-One Rule, Cattell's Scree Criterion, and Parallel Analysis, which are described by Mulaik (2010). Kaiser Rule suggests retaining factors with eigenvalues equal to, or above 1 (Torres-Reyna, 2016). The eigenvalue is the variance of the factor, i.e. it expresses how much of the variance from the observed variables the factor explains. Any factor with eigenvalue above 1 is said to explain more variance than a single observed variable. Hence, factors that explain at least the same amount of variance as a single variable are worth retaining. Cattell's Scree Criterion is an "eyeball" test where we create a graphic visualisation of the connection between the eigenvalues and the number of factors. According to this scree plot, the number of factors to keep is where the plot line stops descending sharply and the subsequent eigenvalues levels off gradually (Mulaik, 2010). Lastly, Parallel Analysis (PA) is a method intended to adjust for sampling error of the eigenvalues. The approach is used to compare the observed eigenvalues with those acquired from uncorrelated normal variables. If the eigenvalues from the real data is greater than the eigenvalues from the PA, one retains the corresponding factor (ibid).

By applying these heuristic rules of thumb, we can suggest that the one factor is sufficient to represent a larger set of variables. However, it is also necessary to calculate the factor loadings, sometimes referred to as scores (Cornish, 2007). The factor loadings represent how the variables are weighted for each factor, as well as the correlation between the variables and the factor (UCLA: Statistical Consulting Group, 2016a). The further away from zero, i.e. the higher the load, the more relevant it is in explaining the factors dimensionality (Torres-Reyna, 2016).

Following Xu, Pan, and Beamish (2004), we created a measure for internal consistency (reliability). It is argued that researchers should estimate the internal consistency before the test can be used in subsequent analysis, and hence, add validity and accuracy to the interpretation of the data (Tavakol and Dennick, 2011). We therefore employed Cronbach's Alpha as a measurement of internal consistency, which describes "the extent to which all the items in a test measure the concept or construct" (Tavakol and Dennick, 2011, p. 53). It can be written as a function of the number of items to be tested and the average inter-correlation between these (UCLA: Statistical Consulting Group, 2016b).

Equation 1: Cronbach Alpha

$$\alpha = \frac{N * \bar{c}}{\bar{v} + (N-1) * \bar{c}}$$

Where α denotes Cronbach's alpha, *N* is the number of items, \bar{c} is the average inter-item covariance among these items, and \bar{v} is the average variance. As seen from Equation 1, an increase in the average inter-item covariance among the items (\bar{c}), *ceteris paribus*, will result in an increased alpha. In other words, if the average inter-item correlation is low, alpha will be low (UCLA: Statistical Consulting Group, 2016b), which might suggest poor inter-relatedness between variables or heterogeneous constructs (Tavakol and Dennick, 2011). Cronbach's alpha is expressed as a number between 0 and 1, and different values of what is considered to acceptable has been suggested, ranging from 0.70 to 0.95 (ibid). However, using a threshold

of 0.7 is considered to be acceptable in most research situations (UCLA: Statistical Consulting Group, 2016b).

After performing the factor analysis and using Cronbach alpha as a test for internal consistency, we formulated the regulatory and normative indices as a simple numerical average for each country of interest. These indices were further used to calculate the absolute regulatory and normative distance between the parent country of the MNE and the country of its subsidiary. The equation applied is statistically formulated as:

Equation 2: Absolute Distance of Regulative and Normative Institutions

$$D_{ij} = \left| \frac{\sum var_i}{N} - \frac{\sum var_j}{N} \right|$$

Where *D_{ij}* is the absolute distance between home country *i* and host country *j*, *var_{ij}* is the sum of the scores for home country *i* and host country *j* from the included indicators, and *N* is total the number of indicators.

3.4.2 Cultural Distance

One of the most widely employed measures of cultural distance in international business is the Kogut and Singh's (1988) cultural distance index (Berry, Guillén and Zhou, 2010; Shenkar, 2001). The index is based on Hofstede's cultural dimensions (Hofstede, Hofstede, and Minkov, 2010), has received acceptance from different disciplines and is a favourable measure to integrate in statistical analysis (Kandogan, 2012; Yeganeh, 2014). Mathematically, the Kogut and Singh index is calculated as follows:

Equation 3: Kogut and Singh Index

$$CD_{j} = \sum_{i=1}^{4} \left\{ \left(I_{ij} - I_{iu} \right)^{2} / V_{i} \right\} / 4$$

Where CD_j is the cultural distance between country *j* and *u*, I_{ij} is the index for the *ith* cultural dimension and *jth* country, V_i is the variance of the index of the *ith* dimension, and *u* indicates the home country. Hence, the formula presents the cultural distance between base country *u*

and partner country j as the sum of squared differences between country u's culture dimension scores and the culture dimension scores of the partner country, corrected for differences in the variances of each dimension.

In recent years, scholars have become increasingly critical of Kogut and Singh's index (e.g. Schwartz, 1994; Shenkar, 2001; Berry, Guillén and Zhou, 2010; Kandogan, 2012). One of the methodological limitations highlighted by Kandogan (2012) is that the Kogut and Singh (1988) method assumes the zero covariance across all dimensions. He states that significant positive and negative correlations are present among Hofstede's cultural dimensions, and "the method could under- or over-estimate the cultural distance as much as 60%" (Kandogan, 2012, p.197). The index tend to overestimate the difference between the countries that are either very alike or very distance, and underestimate the distance among countries that have minor differences in culture (ibid). To account for the correlations, Kandogan (2012) suggests adopting a modified version of the Mahalanobis distance. The key feature of the Mahalanobis distance index is that it assigns weights to the separate dimensions of national culture based on the intercorrelations between these dimensions (van Hoorn and Maseland, 2014). Yeganeh (2014) supports this view and stresses that by accounting for the ranges of variances between variables and compensating for covariance among them, the method provides a more accurate measure of distance than the Kogut and Singh index. Arguably, due to the multidimensional nature of distance and in order to overcome the methodological limitations of the Kogut and Singh index, we measured cultural distance by applying Kandogan's (2012) modified Mahalanobis distance to arrive at the cultural distance between the 73 countries in our sample. To emphasize that the criticism from Kandogan actually is valid, Table 10 illustrates the correlation across Hofstede's cultural dimensions.

Dimensions	Mean	Variance	1.	2.	3.	4.
1. Power Distance	61.9	450.6	-			
2. Individualism vs Collectivism	41.5	554.4	-0.69**	-		
3. Masculinity vs Feminism	48.3	357	0.05	0.08	-	
4. Uncertainty Avoidance	66.2	474.7	0.21*	-0.21*	0.01	-

Table 10: Descriptive Statistics and Correlations across Hofstede's Cultural Dimensions

* Correlation is significant at the 0.10 level; ** Correlations is significant at the 0.01 level.

Source: Own analysis in Stata

The table demonstrates that the assumption about zero covariance across the dimensions does not hold as power distance is negatively correlated with individualism and positively correlated with uncertainty avoidance. Moreover, there is also a significant negative correlation between individualism and uncertainty avoidance. Hence, the Kogut and Singh index (1988) would give inconclusive results, which is why we argue that Kandogan's modified Mahalanobis distance is more appropriate.

Mathematically, the original model of the Mahalanobis distance (1936) between two vectors x_i and x_j is calculated as the following:

Equation 4: Mahalanobis Distance

$$MD_{(X_iX_j)} = \sqrt{(x_i - x_j)^T} C^{-1}(x_i - x_j)$$

Where x_i and x_j denote k-dimensional vectors of X for *ith* and *jth* subjects in a population (X) and C is the covariance matrix of X. The T superscript denotes the transpose operator. The modified version advanced by Kandogan (2012) squares the original distance and divides it by the number of dimensions, hence making it comparable to the Kogut and Singh measure. This is shown mathematically below.

Equation 5: Kandogan's Modified Mahalanobis Distance

$$MM_{ij} = \frac{1}{4} \begin{bmatrix} I_i^{PDI} & - & I_j^{PDI} \\ I_i^{IDV} & - & I_j^{IDV} \\ I_i^{MAS} & - & I_j^{MAS} \\ I_i^{UAI} & - & I_j^{UAI} \end{bmatrix}^T \begin{bmatrix} c_{11} & c_{12} & c_{13} & c_{14} \\ c_{21} & c_{22} & c_{23} & c_{24} \\ c_{31} & c_{32} & c_{33} & c_{34} \\ c_{41} & c_{42} & c_{43} & c_{44} \end{bmatrix} \begin{bmatrix} I_i^{PDI} & - & I_j^{PDI} \\ I_i^{IDV} & - & I_j^{IDV} \\ I_i^{MAS} & - & I_j^{MAS} \\ I_i^{UAI} & - & I_j^{UAI} \end{bmatrix}$$

The measure has similar functional form as the Kogut and Singh index, but recognises the non-zero covariance between the different dimensions (Kandogan, 2012). In conclusion, the modified Mahalanobis distance measure accounts for the variance between the cultural dimensions and the covariance between them, while at the same time maintaining the basis for comparison with the Kogut and Singh index (ibid).

3.4.3 Geographic Distance

The great-circle distance can be found by using the Haversine formula. This formula uses the longitudes and latitudes of the two points in examination, and expresses the shortest distance over the earth's surface, with the assumption that the earth is geometry whole round, i.e. spherical (Kifana and Abdurhman, 2012; Aybar and Ficici, 2009). Mathematically, the formula can be expressed as:

Equation 6: Haversine Formula

d = R.c

Where

$$R = \text{raduis of the earth (average} = 6,371 \text{km})$$

$$\Delta lat = lat_2 - lat_1$$

$$\Delta \text{long} = \text{long}_2 - \text{long}_1$$

$$a = \sin^2 \left(\frac{\Delta \text{lat}}{2}\right) + \cos(\text{lat}_1) \cdot \cos(\text{lat}_2) \cdot \sin^2 \left(\frac{\Delta \text{long}}{2}\right)$$

$$c = 2 \cdot \text{atan} 2 \left(\sqrt{a} \cdot \sqrt{(1-a)}\right)$$

3.4.4 Empirical Model

We have employed different methods to test the hypotheses. To answer the first hypothesis where we propose that MNEs are more likely to locate their foreign subsidiaries within global cities or in a metropolitan area than in other locations, we made a frequency table. This table is based on the coding of cities and the manual measurement performed, and provides information regarding the number of subsidiaries in each global city classification. Additionally, we also created an illustration of the 20 countries with most subsidiaries.

The remaining hypotheses, however, concerns LOF and subsidiary industry, and therefore require a different approach to be examined. As our dependent variable is nominal in nature, i.e. having more than one category, we used a multinomial logistic regression to test the hypotheses (UCLA: Statistical Consulting Group, 2016c). The multinomial logistic regression model estimates k-1 models, where k is the number of levels of the dependent variable. Our dependent variable, subsidiary location, is categorical with three categories, namely within global city, metropolitan area, and periphery. Accordingly, we chose to use "global city" as the baseline category, and test within global cities relative to the metropolitan area, and within global cities relative to the periphery. To test the null hypothesis that the coefficients of the predictors are equal to zero, we applied significance levels (α) of 0.10, 0.05 and 0.01 to assess the p-values. Moreover, Table 11 displays the expected signs of the parameters included in the hypotheses.

Variable	Hypothesis	Expected signs		Sources
		Periphery vs global city	Metropolitan vs global city	
Subsidiary location		Dependent var	riable	LexisNexis
Distribution of subsidiaries	H1	N/A	N/A	LexisNexis and Google Maps
Regulatory distance (RD)	H2	-	+/-	WEF
Normative distance (ND)	H2	-	+/-	"
Cognitive distance (CD)	H2	-	+/-	Hofstede
Global integration	Н3	+	+	Fortanier, Muller, & van Tulder
Local responsiveness	H4	-	-	"
Interactions				
Mixed pressures*RD	H5	-	+/-	Fortanier, Muller, & van Tulder and WEF
Mixed pressures*ND	H5	-	+/-	"
Mixed pressures*CD	H5	-	+/-	"

Table 11: Expected signs of hypotheses tested with the multinomial logistic models

In terms of evaluating the goodness of fit of the logistic models, there is not a single adequate measure. Although Stata 14 automatically reports McFadden pseudo R^2 when running multinomial logistic regressions, pseudo R^2 cannot be interpreted individually or compared across datasets as they are only valid and justifiable in assessing multiple models, which predicts the same outcome on the same dataset. One of the reasons for this limitation is the difficulty of assessing the values of this measure. Multiple pseudo R^2 has been proposed and the different pseudo R^2 can obtain different values and hence evaluate the model against very different standards (UCLA: Statistical Consulting Group, 2016d). Consequently, we will use a combination of other indicators, such as individual coefficients' significance and sign of coefficients, to enable a discussion of the quality of the overall model.

3.5 Assessment of Research Quality

Validity and reliability are one of the main psychometric characteristics of measuring instruments, and should therefore receive attention. The former terminology refers to how well the data represent the phenomena for which they stand, i.e. it denotes the extent to which we measure what we claim to measure (Punch, 1998). Without assessing the construct validity, the researchers are prone to rejecting or accepting the hypotheses due to excessive measurement error (Bagozzi, Yi, and Phillips, 1991). The appropriateness of the measures used in this study has been discussed in the sections where it has been considered relevant. We have adopted a critical mind-set when it comes to choice of methodology and references. On a general basis, we have based our approach on widely used and accepted theories and methods. Thus, we argue that our measures are appropriate for this study.

Reliability refers to the stability or the consistency of the measure (Ghauri and Grønhaug, 2010), and is also referred to as replicability. A measurement that is reliable will provide consistent results and thus add validity (Kothari, 2004). The essence is that a researcher should be able to replicate an earlier study, and by using the same research design one should arrive at the same findings (Saunders, Lewis, and Thornhill, 2016). Our dataset concerning MNE and the location of their subsidiaries has been manually processed and the estimates are made to the best of judgement by the researchers, hence, minor faults may be present. This might provide inconsistent results compared to a second retry by us or other researchers. Due
to these reasons, we acknowledge that the research is exposed to impaired reliability. Moreover, it is important to accentuate that this research is based on secondary data, meaning that the information has been collected by other researcher and for other purposes. Therefore, we acknowledge the fact that the data and the information applied in this research might have been biased by the primary researcher's method of collecting, verifying and publishing.

However, as suggested by Saunders, Lewis, and Thornhill (2016), one can make a quick assessment of the reliability and validity by looking at the source of the data and therefore evaluating the authority or the reputation of the source. Data from large and well-known organizations are expected to be trustworthy. Although we have presented potential drawbacks with our research, a general and overall assessment based on the purpose and scope of this research suggests that the source of our core data, LexisNexis, should be considered valid and reliable. Moreover, WEF is independent, impartial and not tied to any special interests (Schwab and Sala-i-Martín, 2015). Also, Hofstede Centre who offers valuable tools in visualizing cultural differences and their impact is based on rigorous research (Hofstede, Hofstede, Minkov, 2010).

4. Findings

This chapter will present the results obtained through the econometric approximation. The overall object of the chapter is to determine if we can find support for the hypotheses. First, we will disclose the findings on institutional distance by presenting the results from the factor analysis concerning the regulatory and normative institutions, and the modified Mahalanobis distance results with reference to cultural distance. The second section examines the distribution of subsidiaries across countries and the different global city classifications. The third section uncovers the descriptive statistics and the correlation of all variables included. The fourth section discloses the results from the multinomial logistic models by systematically discussing each individual hypothesis. The last two sections discuss the robustness of the model and provide a summary of the primary findings.

4.1 Liability of Foreignness

As emphasized in previous chapters, our aim is to examine the connection between subsidiary location and the LOF, which is driven by regulatory, normative, and cognitive institutional distances. Hence, to measure the implications of the LOF, we constructed measurements for the three drivers. Moreover, as clarified in chapter 3, the regulatory and normative distances between the home and host countries were constructed through factor analyses, while the cognitive distance was measured by applying Kandogan's modified Mahalanobis distance measure. The primary findings will be disclosed in the forthcoming sections, however, a full overview of the factor analyses concerning regulatory and normative institutions can be found in Appendix 2 and 3, respectively.

4.1.1 Regulatory and Normative Institutions

Before conducting the factor analyses, we constructed a correlation matrix of all the indicators involved in regulatory and normative institutions to see if there was ground to perform the analyses. In this context, having a set of highly correlated variables imply that one underlying variable (i.e. factor) can measure the joint variations in response to the latent variables regulatory and normative institutions (Mulaik, 2010). As we can see from Appendix 4, the

two matrices give evidence of high correlation between the eight indicators for the normative institutions, as well as the nine indicators for the regulatory institutions.

Regulatory Institutions

The factor analysis concerning regulatory institutions gave evidence that a one-factor solution is appropriate. Firstly, by applying Kaiser's Criteria, i.e. only keeping factors with eigenvalue ≥ 1 (Torres-Reyna, 2016), we found evidence that only one factor should be retained. The retained factor has an eigenvalue of 7.772, implying that the factor accounts for the most variance. Additionally, by looking at the proportion of the factor, it is evident that the factor explains the majority of the total variance in the variables, as much as 96.2%. Moreover, both Cattell's Scree Criterion and the PA gave evidence that it is appropriate to keep only one factor. Based on the three heuristics rules of thumb, we can conclude that a one-factor solution is appropriate.

Next, calculating the factor loadings, we found that all the variables have strong relevance in terms of defining the factor, with the lowest factor loading being 0.883 as seen in Table 12. The uniqueness of the variables describes the variance that is "unique" for that specific variable, i.e. not shared with any of the other variables. Hence, the greater uniqueness of the variable, the lower relevance it has in the factor model (Torres-Reyna, 2016). As seen from Table 12, "property rights" has the highest relevance in defining the factors dimensionality and thereby the lowest uniqueness.

Variable	Factor 1	Uniqueness
Propterty rights	0.966	0.068
Intellectual property rights	0.948	0.101
Judical independence	0.937	0.122
Favoritism in decisions of government officials	0.915	0.164
Efficiency of legal framework in settling disputes	0.955	0.089
Transparency of government policy making	0.960	0.078
Reliability of police services	0.901	0.189
Effectiveness of anti-monopoly policy	0.896	0.197
Efficiency of legal framework in challenging regulations	0.883	0.220

Table 12: Factor Loading for Factor 1 Concerning Regulatory Institutions

As mentioned in chapter 3, we applied Cronbach alpha to assess the internal consistency of the test. The alpha coefficient for the nine items is 0.977 - above the threshold of 0.7, suggesting a high internal consistency between the items (UCLA: Statistical Consulting Group, 2016b). In conclusion, we are able to confirm that a one-factor solution is appropriate to address the regulatory institutions.

Normative Institutions

Similar to the regulatory dimension, we are able to confirm that retaining one factor is appropriate. Factor 1 has an eigenvalue of 5.669, while the second largest factor has an eigenvalue of 0.481. Hence, Kaiser's Criteria suggest a one-factor solution. Additionally, Cattell's Scree Criterion gives evidence that it is appropriate to retain only one factor. Interpreting the eigenvalues from the PA, we see that the eigenvalue of the second factor is very close to the eigenvalue from the PA. Hence, the PA does not provide clear answer on how many factors to retain. However, both Kaiser's Criteria and Cattell's Scree Criterion provided evidence that one factor should be retained. Therefore, we emphasized on these two suggestions and retained only one factor.

As seen from Table 13, all the variables have high factor loadings, indicating that they all have high relevance in explaining the factor. The alpha coefficient for the eight items is 0.943, implying a high internal consistency among the items that address the normative institutions.

Variable	Factor 1	Uniqueness
Ethical behaviour of firms	0.920	0.155
Strength of auditing and reporting standards	0.832	0.309
Degree of customer orientation	0.817	0.333
Buyer sophistication	0.855	0.270
Cooperation in labour-employer relations	0.845	0.286
Pay and productivity	0.527	0.723
Reliance on professional management	0.944	0.108
Willingness to delegate authority	0.923	0.148

Table 13: Factor Loadings for Factor 1 Concerning Normative Institutions

Regulatory and Normative Distances

As described in the methodology chapter, the eight and nine indicators concerning the normative and regulative institutions were calculated by taking a four-year average, and compiling these variables into one factor. Doing so gives each country one score on the regulative institution and one score on the normative institution. By combining these two scores, we were able to construct a visualisation that enables a simplified interpretation of the results.

Illustration 6: Distribution of Subsidiaries by Country - Regulatory and Normative Institutions



Illustration 6 shows the composition of the country scores for regulatory and normative institutions. The regulatory institution scores are positioned on the X-axis and range from 1.97 to 5.98, while the scores from the normative institution are positioned on the Y-axis and range from 3.21 to 5.70. As evident, the score range for the two dimensions are different. This might indicate that the normative practices for the countries included are similar to a larger

extent compared to the regulatory institutions. Additionally, the illustration portrays a very clear pattern between the regulatory and normative institutions - the higher score assigned to a country in terms of regulatory institution, the higher score assigned in terms of normative institution, and vice versa. This corresponds to the belief that countries with strong regulatory institutions also hold higher normative institutions.

Not surprisingly, highly developed countries such as Switzerland, Sweden, Singapore and New Zealand, are positioned in the upper right corner, implying high scores on both regulatory and normative institutions. In contrast, developing countries such as Venezuela, Serbia and Ukraine are positioned in the lower left corner with low scores on both institutional dimensions. Moreover, three of our home countries, namely Brazil, India and China, are positioned close to the centre of the diagram with rather similar scores. Russia, on the other hand, stands out with lower scores for both regulatory and normative institutions. Consequently, this means that Brazil, India, and China face fairly similar distances to the host countries in our sample, i.e. equidistant to the most developed and developing countries. Contrary, Russia experiences larger regulatory and normative distance to developed host countries, and similarly smaller distance to developing host countries.

4.1.2 Cognitive Institutions

As described in the methodology chapter, we applied Kandogan's modified Mahalanobis distance measure to assess the cognitive distance from the four home countries to the host countries in our sample. Table 14 provides an overview of the results from this measure by reporting the six countries with the smallest and largest distance from each BRIC country.

	Brazil		Russia		India		China	
ce	Croatia	0,07	Romania	0,17	Philippines	0,21	Hong Kong	0,14
stan	Turkey	0,07	Ukraine	0,22	Nigeria	0,34	Kenya	0,33
dis	Morocco	0,10	Serbia	0,43	Malaysia	0,39	Indonesia	0,46
lest	Bulgaria	0,12	France	0,53	Morocco	0,51	Nigeria	0,48
mal	Egypt	0,14	U.A.E	0,56	South Africa	0,62	Singapore	0,50
S	Czech Republic	0,22	Croatia	0,73	Honduras	0,71	Vietnam	0,54
	Brazil		Russia		India		China	
ŝ	Brazil Israel	2,42	Russia Ireland	4,79	India Portugal	3,04	China Norway	4,37
tance	Brazil Israel Singapore	2,42 2,81	Russia Ireland Singapore	4,79 5,26	India Portugal Denmark	3,04 3,11	China Norway Netherlands	4,37 4,44
distance	Brazil Israel Singapore Sweden	2,42 2,81 3,03	Russia Ireland Singapore Trinidad & Tobago	4,79 5,26 5,41	India Portugal Denmark Trinidad & Tobago	3,04 3,11 3,28	China Norway Netherlands Austria	4,37 4,44 4,60
gest distance	Brazil Israel Singapore Sweden Denmark	2,42 2,81 3,03 3,13	Russia Ireland Singapore Trinidad & Tobago Denmark	4,79 5,26 5,41 5,45	India Portugal Denmark Trinidad & Tobago Japan	3,04 3,11 3,28 3,63	China Norway Netherlands Austria Latvia	4,37 4,44 4,60 4,61
argest distance	Brazil Israel Singapore Sweden Denmark Austria	2,42 2,81 3,03 3,13 3,43	Russia Ireland Singapore Trinidad & Tobago Denmark Israel	4,79 5,26 5,41 5,45 5,57	India Portugal Denmark Trinidad & Tobago Japan Israel	3,04 3,11 3,28 3,63 5,09	China Norway Netherlands Austria Latvia Belgium	4,37 4,44 4,60 4,61 4,66

Table 14: Kandogan's Modified Mahalanobis Distance from BRIC Countries

In contrast to the countries with shortest distance to the BRIC countries, a pattern emerges when considering the countries with largest cognitive distance from our home countries. Israel and Austria are listed among the top six countries in terms of having the largest cognitive distance relative to the BRIC countries. Additionally, Denmark is also listed in this category when it comes to Brazil, Russia and India. Subsequently, we can assume that there is larger variety when it comes to countries being considered as cognitively close, as opposed to countries considered as being cognitively distant from the BRIC countries. Moreover, Russia stands out in terms of having very large cognitive distances to several countries. As seen from the table, the distance between Russia and their most distant countries, is fairly larger compared to distance values for Brazil, India and China. Consequently, this implies that the beliefs and values shared by the people in Russia differ from the people in the host countries. In contrast, Brazil stands out by being relatively close to their host countries in terms of cognitively when compared to Russia, India and China.

Another interesting feature that can be extracted from the table is that the BRIC countries do not perceive the US as very close in terms of sharing the same beliefs and values. Yet, the US is the country holding the largest share of subsidiaries from all four countries. Hence, there might be other factors or locational features within the US that overrules the importance of the cognitive institution between the country and the BRIC countries.

4.2 Subsidiary Location Distribution

The first hypothesis proposes that an MNE is more likely to locate its foreign subsidiary within a global city or in the metropolitan area surrounding the city, as opposed to other locations. As mentioned in section 3.4.4, we created a frequency table to illustrate the subsidiary location distribution and determine whether there is support for this hypothesis. Table 15 provides an overview of the subsidiaries by location.

Subsidiaries	α cities, n=45	%	β cities, n=77	%	γ cities, n=59	%	High sufficiency, n=41	%	Sufficiency, n=81	%	Total, n=303	%
City	439	30%	155	11%	46	3%	18	1%	24	2%	682	47%
Metro	277	19%	128	9%	46	3%	24	2%	24	2%	499	35%
Periphery	98	7%	58	4%	29	2%	16	1%	24	2%	225	16%
No global city											35	2%
Total world											1.441	100%

Table 15: Distribution of subsidiaries

As we can see from Table 15, the number of subsidiaries located within the 10 kilometres boundaries of global cities is 682 or 47% of total subsidiaries. Additionally, 35% of the subsidiaries are located in the metropolitan area. The remaining 16% are located in "all other locations", i.e. all possible sites outside the 60 kilometres circle of global cities, including cities that do not carry the characteristics of global cities.

Having the GaWC (2014) roster of global cities in mind (ref. Appendix 1), we see that 30% and 19% of the total subsidiaries are located, respectively within the city centre and in the metropolitan area of alpha cities. This means that 49% of the observations in our sample are situated in alpha cities, despite the fact that only 45 of the total 303 cities listed in the roster are classified as alpha cities. In comparison, 20% of the subsidiaries are located and distributed in the city and metropolitan area of the 77 beta cities, and 6% of the subsidiaries are found in the city and metropolitan area of the 59 gamma cities. Furthermore, a total of 3% and 4% are located in the same areas in, respectively high sufficiency and sufficiency cities. Based on the information in the table, we argue that there is support for hypothesis 1.

Furthermore, as the MNEs in our sample prefer to locate their subsidiaries in global cities, it is reasonable to argue that global cities are related to MNE location strategy. Additionally, it appears that the inner city circle and the metropolitan area of alpha global cities are the most attractive areas to station the subsidiaries.

Furthermore, in order to observe the distribution of the subsidiaries with regards to the countries in our sample, we created an illustration showing the 20 host countries with highest share of subsidiaries from the BRIC countries. This is demonstrated in Illustration 7.



Illustration 7: Distribution of Subsidiaries by Country and Classification

Illustration 7 reports the geographical distribution of subsidiaries and visualises the proportion of subsidiaries located in the periphery, metropolitan area and within a global city. A list of all the countries in our sample, and the distribution of where the subsidiaries are located can be found in Appendix 5. As displayed in Illustration 7, 252 of the subsidiaries are located in the

US - 53% more subsidiaries than in U.K, which is the second most popular destination for MNEs from BRIC. This indicates that MNEs from the BRIC countries view the US as a highly attractive site for their subsidiary operations. Furthermore, it is evident that developed countries are preferred over developing and emerging markets. It is not until country number 14 (China) and onwards, that emerging economies and less developed countries appear.

If we interpret the distribution of subsidiaries based on city location (periphery, metro or global city), we see that the share of subsidiaries located in the periphery is lower than the metropolitan area and within global cities for the 20 countries graphed. Assessing Appendix 5, we see that this pattern is also evident for the rest of the countries in our sample. Additionally, while the share of subsidiaries located in the metropolitan area in the US and UK is larger than the two other categories, this pattern is not the case for the remaining countries. In these countries the global city is the dominant location category. This is especially visible when looking at the countries with fewer subsidiaries. In some countries, for example Indonesia and Chile, all the subsidiaries are located in the global city. This also complies with the frequency table where approximately 82% of the subsidiaries are located in global cities or the metropolitan area of global cities. This might indicate that developed countries possess sufficient locational characteristics that extend the inner city, while developing countries only possess locational advantages within the cities.

In conclusion, and in accordance with the information found in the frequency table, the illustration highlights that a significant portion of the subsidiaries are located either within the global city or the metropolitan area surrounding the city, whereas the periphery area is perceived as being less attractive. Hence, we argue that there is support for hypothesis 1.

4.3 Multinomial Logistic Regression Model

The final sample that formed the basis for the multinomial logistic models, and applied to test hypothesis 2 to 5 consisted of 1,327 subsidiaries from 310 MNEs operating in 73 countries. However, before carrying out the models, we performed descriptive statistics to explore if any pattern emerged from the data. This was done to simplify the information in a sensible matter

and to describe the basic features of the data. Table 16 displays a full overview of all the variables with associated means, standard deviations and correlations.

						Cor	relation	s			
Variable	μ	Std. Dev.	1.	2.	3.	4.	5.	6.	7.	8.	9.
1. Subsidiary location	1.32	0.73	-								
2. Regulative distance	1.03	0.56	-0.00	-							
3. Normative distance	0.75	0.39	-0.03	0.87*	-						
4. Cognitive distance	1.74	1.07	-0.10*	0.18*	0.22*	-					
5. Geographic distance (000 km)	7.34	3.62	-0.12*	-0.25*	-0.15*	0.09*	-				
6. Economic development	-33.39	17.42	0.04	-0.41*	-0.60*	-0.00	0.00	-			
7. Integration pressures	0.25	0.43	-0.08*	-0.15*	-0.14*	0.07*	0.05	0.03	-		
8. Responsiveness pressures	0.18	.038	0.02	0.02	0.06*	-0.01	0.05	-0.08*	-0.27*	-	
9. Mixed pressures	0.06	0.24	-0.04	-0.07*	-0.06*	-0.07*	0.08*	0.01	-0.15*	-0.12*	-

Table 16: Descriptive Statistics and Correlation Coefficients of the Variables in the Model

*Significance at p-value < 0.05 level

As seen from Table 16, the standard deviation of the cognitive distance measure is fairly high compared to the other two institutional distance measures, indicating higher dispersion in the observations (UCLA: Statistical Consulting Group, 2016e). This suggests that, collectively, the BRIC countries have greater cognitive differences from the host countries compared to regulative and normative differences. The industry pressure variables (variable 7, 8 and 9) are all dummy variables addressing the probability that the particular industry will be observed in the data.

Evident from the correlation matrix, the dependent variable is not highly correlated with any of the predictor variables. However, we find evidence of high pairwise correlation between regulatory and normative distances, at 0.87, which was expected due to the results in Illustration 6. Likewise, economic development is correlated with normative distance, at - 0.60. High pairwise correlation can result in several problems, including (i) affecting the coefficients' significance, (ii) estimates of the coefficient can become unstable, and (iii) standard errors of the coefficient can get largely inflated (UCLA: Statistical Consulting Group, 2016f). To examine if the high correlation among the predictor variables should be of concern, we estimated the variance inflation factors (VIF) - a diagnostic for multicollinearity.

VIF estimates how much the variance of the coefficients is "inflated" because of linear dependence with other predictors (ibid).

Model 1		Model 2		Model 3	
Variable	VIF	Variable	VIF	Variable	VIF
Normative Distance	6.68	Normative Distance	1.86	Normative Distance	-
Regulatory Distance	5.11	Regulatory Distance	-	Regulatory Distance	1.42
Economic Distance	1.84	Economic Distance	1.68	Economic Distance	1.25
Integration Pressures	1.17	Integration Pressures	1.17	Integration Pressures	1.16
Geographic Distance (000 km)	1.13	Cognitive Distance	1.13	Responsiveness Pressures	1.13
Cognitive Distance	1.13	Responsiveness Pressures	1.12	Geographic Distance (000 km)	1.12
Responsiveness Pressures	1.13	Mixed Pressures	1.07	Cognitive Distance	1.08
Mixed Pressures	1.07	Geographic Distance (000 km)	1.07	Mixed Pressures	1.07
Mean VIF	2.41	Mean VIF	1.30	Mean VIF	1.18

Table 17: Variance Inflation Factors for Model 1, 2, and 3

Several rules of thumbs, such as 'the rule of 5', 'rule of 10', have appeared in the literature to indicate excessive or serious multicollinearity (e.g. Menard, 2002). However, O'Brien (2007) demonstrated that the threshold values associated with VIF must be interpreted in the context of other factors. He emphasises that focusing predominantly on multicollinearity and, for example, eliminating one or more of the independent variables that are highly correlated with other independent variables, can lead researchers to do more harm than good. The consequences of this solution is that by "dropping X_j from the equation means that the ith regression coefficient no longer represents the relationship between the Y and X_i controlling for X_j and any other independent variables in the model. The model being tested has shifted, and this often means that the theory being tested by the model has changed" (O'Brien, 2007, p. 683).

As seen in Model 1 from Table 17, the VIF for normative and regulatory institution is, respectively, 6.68 and 5.11. This means that if we relied on the threshold values introduced in the literature, we would end up with inconclusive solutions to the 'problem'. However, following the suggestion of O'Brien, we chose to evaluate how the correlations impact the overall model before deciding on a solution. Table 18 shows the predictor coefficient estimates for three models, where Model 1 includes both regulatory and normative distance, Model 2 excludes the regulatory distance, and Model 3 excludes the normative distance. As

illustrated in Table 18, there is a considerable change in the coefficient estimates between the three models. In particular, the estimates of the normative distance has a significant change from Model 1 when to Model 2, changing from 0.051 to 0.123 (periphery relative to global city), and from 0.401 to 0.076 (metro relative to global city).

	Model 1		Mod Main e	lel 2 effects	Mod	lel 3
	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city
Regulatory distance	0.049	-0.233	-	-	0.077	-0.023
Normative distance	0.051	0.401	0.123	0.076	-	-
Cognitive distance	0.226	0.098	0.225	0.103	0.228	0.111
Geographic distance (000 km)	0.053	0.095	0.053	0.099	0.053	0.097
Economic distance	0.004	-0.022	0.005	-0.023	0.004	-0.024
Integration pressures	0.341	0.664	0.339	0.670	0.340	0.656
Responsiveness pressures	-0.325	0.490	-0.327	0.498	-0.325	0.495
Mixed pressures	0.220	0.991	0.220	0.997	0.221	0.988
Constant	-1.893	-2.265	-1.879	-2.360	-1.898	-2.313

Table 18: Difference in Estimates of Multinomial Logistic Models of Global City Location

As discussed, one of the problems with collinearity is that the coefficient estimates can become unstable, which we believe might be the case in the abovementioned models. Hence, we performed VIF tests on Model 2 and 3 to see how the value of the variables alters. From Table 17 we can see that the VIF values are much lower, compared to the values we obtained by including both variables in the same regression model. Taking all three models into consideration, we argue that computing two separate models, namely Model 2 and Model 3, is the best solution to alleviate the problem of collinearity and assess the effect of institutional distance on subsidiary location. Moreover, to examine hypothesis 3 through 5, we will use Model 2, which disregards regulatory distance. The argumentation for this is that the regulatory pillar is the easiest to interpret and comprehend since it is formalised in laws and regulations (Kostova and Zaheer, 1999). Concurrently, the normative distance between home and host countries are considerably more challenging to understand, and should therefore be included to portray a true picture of the LOF.

4.4 Multinomial Logistic Regression Results

Table 19 reports the results from the multinomial logistic regression. As implied from the table, we estimated the logistical probability that MNEs from the BRIC countries would locate their subsidiaries in either a metropolitan area or in a peripheral area as opposed to within a global city. Using "global city" as the baseline category enabled us to interpret the parameter estimates relative to this referent group. The interpretation of the model is that "for a unit change in the predictor variable, the logit of outcome *m* relative to the referent group is expected to change by its respective parameter estimate given the variables in the model are held constant" (UCLA: Statistical Consulting Group, 2016c). Negative coefficient estimates indicate that the subsidiary is more likely to be located within the global city as opposed to the peripheral or metropolitan area. In the case of positive coefficient estimates, the model indicates that the subsidiary is more likely to be located in the periphery or the metropolitan area relative to the global city. The results are for the 'total' definition of global cities, and include alpha, beta, gamma, high sufficiency, and sufficiency cities. Models 1 and 2 show the main effects for periphery and metropolitan area versus a global city, while models 3 and 4 report the results when the interaction variables are included.

Model	1	2	3	4	Η
Number of $obs = 1,327$					
Log Likelihood =	-1,2	76.714	-1,27	73.069	
Pseudo R2 =	0.0)499	0.0)526	
	Main	effects	Including	interactions	
	Periphery vs	Metro vs	Periphery vs	Metro vs	
	Global City	Global city	Global City	Global city	
Institutional Distance					
Regulatory distance	-	-	-	-	
Normative distance	0.123	0.076	0.144	0.023	H2
Cognitive distance	0.225***	0.103	0.242***	0.123*	H2
Control variables					
Geographic distance (000 km)	0.053**	0.099***	0.050**	0.098***	
Economic distance	0.005	-0.023***	0.004	-0.023***	
Industry Pressures					
Integration pressures	0.339*	0.670***	0.344*	0.660***	H3
Responsiveness pressures	-0.327	0.498***	-0.330	0.497***	H4
Mixed pressures	0.220	0.997***	1.685**	1.301*	
Interactions					
Mixed pressures * Regulatory distance			-	-	
Mixed pressures * Normative distance			-1.052	0.598	H5
Mixed pressures * Cognitive distance			-0.634	-0.497	H5
Constant	-1.879***	-2.360***	-1.932***	-2.346***	

Table 19: Multinomial Logistic Regression Models of Global City Location

* Significance at p < 0.10; ** Significance at p < 0.05; *** Significance at p < 0.001

4.4.1 Global Cities and the Liability of Foreignness

Hypothesis 2 proposes that MNEs are more likely to locate their foreign subsidiaries within a global city when the institutional distance is large. Looking on how regulatory distance influences the location choice of subsidiaries, it is evident from Appendix 6 that the coefficients for both periphery versus global city and metropolitan area versus global city are statistically insignificant. Additionally, due to the different signs of the coefficients, the results might be inconclusive. Model 1 indicates that it is more likely that a subsidiary is located in the periphery as opposed to within a global city (β = 0.077), while model 2 indicates that a subsidiary is more likely to be located within in the global city as opposed to the metropolitan area surrounding the city (β = -0.023). Hence, we cannot conclude that larger regulatory institutional difference between home and host countries would lead MNEs to locate their subsidiaries within a global city.

The next institutional feature related to LOF, normative distance, looks at how the location choice of a subsidiary is affected by normative differences between home and host country. As seen in Table 19, the coefficients in both Model 1 and 2 are insignificant. By looking at the signs of the coefficients, we can observe that the results are contradictory to hypothesis 2. There is an indication that MNEs from the BRICs might prefer to locate their foreign subsidiaries outside a global city, i.e. in the periphery (β = 0.123) or in the metropolitan area (β = 0.076) as the normative distance between the home and host country increases. This suggests that work norms and habits do not have a significant influence when deciding the subsidiary location. Additionally, the last institutional feature, cognitive distance, also conveys unanticipated results. In contrast to the abovementioned institutional features, the relative probability that MNEs from the BRIC countries will locate their subsidiaries in the peripheral area relative to within a global city, is statistically significant (β = 0.225; p-value < 0.001). Hence, as cognitive distance increases, MNEs will seek outside the global city.

In conclusion, the institutional pillars pertaining the LOF, namely regulatory, normative, and cognitive distances, do not provide support for hypothesis 2. Although nearly all the coefficients concerning the three institutional distances are insignificant, the results indicate that larger institutional distance between the home and host countries might increase the relative probability that the subsidiary will be located outside a global city, i.e. in the metropolitan area or in the periphery. In other words, this would indicate that the characteristics assigned to global cities, namely cosmopolitanism, advanced producer services, and interconnectedness, are not appealing enough for MNEs from the BRIC countries. Concurrently, the unexpected findings can also be assigned to the underlying indicators used to portray the institutional pillars, how the distance measures are derived, or large differences among the home countries includes. Whether the behaviour of MNEs from the BRIC countries is actually contrasting to MNEs from previous research, or if the findings are unreliable due to the underlying methods applied, is difficult to assess based on these models.

4.4.2 Subsidiary Industry and Integration Pressures

Hypothesis 3 takes into account the subsidiary industry, and suggests that subsidiaries operating within R&D-intensive industries under high pressures for global integration are

more prone to locate outside a global city. The industries identified in this category are automotive, chemicals, computers and related, electronic equipment, machinery, and other transport. As seen from Table 19 there is support for this hypothesis as subsidiaries operating in industries under high pressures for global integration are more prone to be located in the periphery area relative to a global city (β = 0.339; p-value < 0.10). Likewise, subsidiaries from these industries are more likely to locate in the metropolitan area than global cities (β = 0.670; p-value < 0.001). Thus, our findings suggest that these industries seek locations that are distant from global cities to avoid the risk of, for example, knowledge spillovers. Therefore, the results indicate that the characteristics and advantages of global cities does not offset the additional costs of locating within the global city, and as such propel R&D-intensive industries under high pressures for global integration away from these areas.

4.4.3 Subsidiary Industry and Responsiveness Pressures

In contrast to hypothesis 3 which covers R&D-intensive industries under pressure for global integration, hypothesis 4 concerns subsidiaries operating within demand driven industries dependent on marketing capabilities. This hypothesis proposes that subsidiaries operating within advertising-intensive industries under high pressures for local responsiveness are more likely to locate in global cities. As discussed in section 3.2.2 under subsidiary industry, the industries identified in this category are retail, telecommunications and wholesale.

Consistent with the hypothesis, Model 1 in Table 19 might indicate that subsidiaries operating within industries under high responsiveness pressures might be more prone to be located in a global city that in the peripheral area (β = -0.327). At the same time, these pressures does not influence the relative probability of subsidiaries being located in the metropolitan area versus within the global city (β = 0.498; p < 0.001). As the coefficient in Model 1 is insignificant as opposed to the coefficient in Model 2, we emphasize the latter. Hence, we suggest that subsidiaries under these pressures might not be attracted to global cities. Conclusively, we fail to find support this hypothesis.

4.4.4 Mixed Pressures and the Liability of Foreignness

Hypothesis 5 combines the pressures for global integration and local responsiveness, and addresses subsidiaries operating in industries marked by high pressures for both, i.e. mixed pressures. This means that the strategic location decision is more complex than in the previous hypotheses. Nevertheless, we propose that subsidiaries are more likely to locate within the global city when the institutional distance is large in these settings. Although pharmaceutical is the only industry identified in this category, this is not of concern given the large amount of observations from this industry. To test hypothesis 5, we added interactions to expand the understanding of the relationship between industries marked by mixed pressures and institutional distance.

The coefficient of the main variables of mixed pressures indicate the relative change in the likelihood of location when the institutional distance variables are equal to zero, that is, when locating in countries that are exactly similar to the respective BRIC countries. With respect to this hypothesis, we find only partial support for the notion that large institutional distance increases the relative probability of subsidiaries in the pharmaceutical industry to locate within a global city. The lack of full support is due statistically insignificant coefficient estimates.

Model 3 and 4 in Appendix 6 reports the results for regulatory distance. Here we can see that when the institutional distance variables are equal to zero, the subsidiaries are more likely to be located in the periphery (β = 2.012; p-value < 0.05) and metropolitan area (β = 1.333; p-value < 0.10) as opposed to within a global city. Additionally, as the regulatory distance increases, the relative probability of subsidiaries under mixed pressures being located within a global city versus the peripheral area increases (β = -1.228), while the relative probability of subsidiaries being located in global cities versus the metropolitan decreases (β = 0.395).

Moving on to the effects of normative and cognitive differences, Table 19 reports similar results as the regulatory distance; when the institutional distance variables are equal to zero, the subsidiaries are more likely to be located in the periphery (β = 1.685; p-value < 0.05) and metropolitan area (β = 1.301; p-value < 0.10) as opposed to within a global city. Furthermore, as the normative distance increases the subsidiaries operating in the pharmaceutical industry

are more likely to be located in global cities versus the peripheral area (β = -1.052), but more prone to be located in the metropolitan area than in global cities (β = 0.598). As for cognitive distances' effect on the location of subsidiaries in pharmaceutical, subsidiaries are more prone to be located within global cities over both the periphery (β = -0.634) and the metropolitan area (β = -0.497).

Thus, the relative probability of subsidiaries in the pharmaceutical industry locating outside a global city when there is no institutional distance between home and host countries is positive and statistically significant. However, when expanding the understanding of the relation between location strategy and institutional distance, we see that these subsidiaries are more likely to locate within global cities over the peripheral areas as the institutional distance increases. Although the coefficient in the interactions are not statistically significant, the consistency in the negative signs of the regulatory, normative, and cognitive distance interaction variables in Model 3 strengthens the argument that there might be partial support for the notion that the institutional features pertaining LOF are reflected in the location pattern of industries under mixed pressures.

4.4.5 Supplementary Effects

As displayed in Table 19, the two control variables also have an effect on the choice of subsidiary location. As seen from the table, the larger geographic distance, the more likely it is that MNEs will locate their subsidiaries outside the global city, either in the periphery (β = 0.053; p-value < 0.005), or in the metropolitan area (β = 0.099; p-value < 0.001). This indicates that larger geographic separation between the countries of interest increases the relative probability of locating subsidiaries outside the global city. Moreover, by addressing the economic distance, another picture emerges. The model reports that a unit increase in the economic distance is associated with a decrease in the relative probability of the subsidiary being located in the metropolitan area versus a global city (β = -0.023; p-value < 0.001). This indicates that larger economic distance between the home and host countries make MNEs more likely to locate their subsidiaries within a global city. By addressing the two control variables, the findings indicate that larger geographic distance seems to increase the likelihood of subsidiaries being located within global cities.

Furthermore, the constants in the four models reported in Table 19 are the multinomial logit estimate when all the predictor variables are zero. As seen from the model, the constant in all four models are negative and significant (p-value < 0.001). However, due to the different scale of the variables, the constants do not have a natural interpretation. While the industry pressure dummies can take the value zero and enable interpretation of the 'other industries', it is unlikely that the remaining predictors will take on the value zero. For the institutional distance and economic distance variables a value of zero would mean that the home and host countries have the same score. Additionally, geographic distance cannot take the value zero. Consequently, given the scale of the variables, we are not able to provide a copious interpretation of the constants (UCLA: Statistical Consulting Group, 2016c).

4.5 Robustness of the Model

In an empirical study like this, a common practise is to carry out a robustness check, i.e. examine how the coefficients act when the regression specification is modified by adding or removing predictor variables. If the coefficients are "robust", i.e. they do not change much, this is normally understood as evidence for structural validity (Lu and White, 2013). Thus, to evaluate our model, we conducted robustness tests.

First, as indicated in Illustration 7, the US holds the largest number of subsidiaries. Due to the considerable share of subsidiaries, we ran a regression excluding the 252 subsidiaries located in the US to see if the subsidiaries located there have a significant influence on the findings. As seen in Appendix 7, the results from the new models are quite similar to the original models. In other words, the results still indicate that subsidiaries are more prone to be located outside the global city as the institutional distance between home and host countries increases.

Furthermore, as inferred by the findings, Russia stands out in a number of dimensions compared to the other home countries. For example, as seen in Illustration 6, Russia obtains a considerable lower score on both the regulative and normative institutions. In addition, the country is perceived to be more cognitive distant from a number of host countries as opposed to Brazil, India, and China. Consequently, we found it necessary to perform multinomial

logistic regression models where Russia was excluded, implying that the 94 subsidiaries from Russia were removed from the dataset.

Model	1	2	3	4
	Main effects		Including i	nteractions
	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city
Institutional Distance - Normative model				
Regulatory distance	-	-	-	-
Normative distance	-0.243**	-0.190	-0.182	-0.262
Cognitive distance	0.255**	0.100	0.281**	0.121*
Institutional Distance - Regulatory model				
Regulatory distance	-0.063	-0.159	-0.011	-0.195
Interactions - Normative model				
Mixed pressures * Regulatory distance			-	-
Mixed pressures * Normative distance			-0.964	0.782
Mixed pressures * Cognitive distance			-0.686	-0.495
Interactions - Regulatory model				
Mixed pressures * Regulatory distance			-1.219	0.510

Table 20: Changes in the Multinomial Logistic Regressions When Excluding Russia

** Significance at p-value < 0.005; * Significance at p-value < 0.10

Table 20 reports the most notable findings from the revised models - both for the regulatory and normative model. The complete revised models without Russia can be found in Appendix 8. Mostly, there are only minor changes in the results from the primary model. However, two notable changes, namely in the regulatory and normative distances, must be highlighted.

First, both the coefficients concerning regulatory distance in Model 1 and 2 are negative in the revised models. Although not statistically significant, the new coefficient estimates still propose a new interpretation of the regulatory distance's effect on subsidiary location. That is, the MNE is more likely to locate its foreign subsidiary within a global city as opposed to the periphery (β = -0.063) when regulatory distance is present. Additionally, the coefficient addressing the relative probability of locating in the metropolitan region as opposed to within a global city has increased in magnitude (from β = -0.023 to β = -0.159). This further

strengthens our assumption that increases in the regulatory distance between home and host countries make MNEs favour global cities over the metropolitan area or the periphery.

Second, the coefficient of normative distance has become negative and significant in Model 1 (β = -0.243; p-value < 0.05). Thus, the revised model suggests that the MNE is more likely to locate its foreign subsidiary in a global city as opposed to the peripheral area when the normative distance between home and host country increases. Interestingly, this might suggest that regulatory and normative distances have different influence on the location behaviour of MNEs from Russia as opposed to MNEs from Brazil, India, and China (BIC).

In contrast to the coefficients of the regulatory and normative distances, the cognitive distance measure does not change considerably when excluding Russia. Therefore, the findings of cognitive distance are most likely not due to the insignificance of cultural differences, but rather the method used to measure the cognitive distance between countries. Furthermore, while the influence of regulatory and normative distance variables has a different interpretation on subsidiary location when excluding Russia, the exclusion did not alter the results decisively for the interactions. This indicates that Russia does not have a significant number of subsidiaries operating in the pharmaceutical industry.

The new findings suggest that our study would have observed a higher propensity for subsidiaries to be located in a global city if Russia had not been included as a home country. It also confirms our assumption portrayed in section 4.1 - Russia is an outlier compared to the other home countries, and might have a destructive impact on our findings. Consequently, we fail to find support for robust coefficients in terms of the regulative and normative institutions. Due to these discoveries, we find it more appropriate to emphasise the estimates and findings on institutional distance from the multinomial logistic regression models that excludes Russia. Thus, the discussion concerning the institutional dimensions in the subsequent chapter will be based on the output incorporating MNEs from BIC.

4.6 Summary of Findings

The frequency table in Table 15 and Illustration 7 supports the notion in Hypothesis 1, that MNEs from the BRIC countries are more likely to locate their foreign subsidiaries within global cities or in the metropolitan area surrounding the global cities than in the peripheral area.

Moreover, in section 4.3 we elaborated on the variables included in the multinomial logistic regression and how they interact with each other. As anticipated, there was high correlation between regulatory and normative institutions - a relationship also apparent in Illustration 6 where we combined regulatory and normative institutions to see the distribution of subsidiaries by country. As a consequence, a model excluding regulatory distance was chosen as the primary model to answer the remaining hypotheses.

While we were not able to confirm hypothesis 2 in section 4.4.1, the robustness tests provided a new interpretation of the regulatory and normative distance variables. The unexpected findings can believably be attributed to Russia as these observations are outliers affecting the results. At the same time, the observations from Russia do not have a significant effect on cognitive distance, leading to a perception that this might be due to the method used to measure cognitive distance between countries. In conclusion, we found partial support for hypothesis 2.

Moreover, we could confirm that R&D-intensive industries under high pressures for global integration are likely to locate outside global cities. However, we failed to find support for the notion that advertising-intensive industries under high pressures for local responsiveness are more prone to locate within global cities. Lastly, with regard to industries marked by high pressures for both global integration and local responsiveness, we were able to say that there is an indication that the hypothesis holds due to the consistency in the signs of the coefficients in Model 3.

Table 21 portrays a simple overview of the five hypotheses and whether they hold or not following the findings in this chapter. As elucidated, we only found full support for two out of five hypotheses. Concurrently, there is also partial support for hypothesis 4 and 5. Hence, our

results provide evidence of a complex relationship between MNE location strategy and LOF associated with international operations in global cities. The results will be placed into a wider theoretical and practical context in the next chapter.

Table 21: Summary of Findings

	Hypothesis	Result
H1	An MNE is more likely to locate its foreign subsidiary within global cities or in a metropolitan area than in other locations.	1
H2	An MNE is more likely to locate its foreign subsidiary in a global city when the institutional distance is large.	Partial support
H3	An MNE is more likely to locate its foreign subsidiary outside a global city if the subsidiary operates within a highly R&D-intensive industry under pressure for global integration.	1
H4	An MNE is more likely to locate its foreign subsidiary within a global city if the subsidiary operates within a highly advertising-intensive industry under pressure for local responsiveness.	×
Н5	Subsidiaries operating within industries marked by high pressures for both global integration and local responsiveness, are more likely to be located within global cities when the institutional distance is large.	Partial support

5. Discussion

This study has empirically examined the relation between MNE location strategy, global cities, and LOF. While the previous chapters has outlined and defined the three sub-questions concerning the characteristics of global cities, the components of LOF, and how we can construct valid measures to capture these components, the objective of this chapter is to bring forward a discussion of the findings in a wider theoretical context. Based on the literature presented in chapter 2, the following sections aim to answer the overall problem statement by questioning how the LOF can influence subsidiary location strategy in a global cities serve as both centripetal and centrifugal forces to MNEs choice of location. The second section addresses the effects of LOF on MNE location strategy, and provides justification for the findings in this study. Ought to be mentioned and as specified in the previous chapter, the revised models where Russia is excluded as a home country forms the basis for this section. Lastly, the third section addresses the influence of subsidiary industry on the location choice.

5.1 The Spread of MNEs from BRIC

The BRIC countries have long been seen as attractive destinations by foreign capital due to their low labour cost, large consumer market, and growth potential (Ranjan and Agrawal, 2011). However, the economic liberalisation and fundamental development in foreign trade regimes of the BRIC countries has not only intrigued significant FDI inflows to these countries, but also provoked these countries to invest overseas and expand their global footprints (Holtbrügge and Kreppel, 2012; Sauvant, Maschek, and McAllister, 2010). This is also evident by the large number of foreign subsidiaries in our sample. A pattern emerges when considering MNE location strategy, as the majority of the subsidiaries in our sample are located within global cities (47%) or in the metropolitan area surrounding the global cities (35%). Our results are also consistent with the findings of Mehlsen and Wernicke (2016) and Goerzen, Asmussen, and Nielsen (2013). This amplifies the notion that global cities are important when considering location behaviour of MNEs (Sassen, 2004; Nachum and Wymbs, 2005; Goerzen, Asmussen, and Nielsen, 2013). Being able to gain insight into the location strategy of MNEs is eminent as MNEs can play a major role in the development and

evolution of contemporary economic location configuration (Nachum, 2010; Beaverstock, Smith, and Taylor, 1999).

Some researchers hold the belief that the globalised economy is becoming more similar and less differentiated due to technological changes (e.g. O'Brien, 1992), implying that we increasingly observe greater similarity and greater homogeneity between people in different parts of the world (Friedman, 2005). However, Sassen (1991), a pioneer for the explanation of global city emergence, in questioning the dominant representation of the global economy as 'placeless', argued that instead new types of spatial concentrations have been emerging in the past couple of decades. As such, our findings strengthen Sassen's arguments that the perspective of a placeless world economy is erroneous. The perception that location is important - even for highly globalised sectors such as finance, is to a great extent reflected in the localisation pattern of MNEs from the BRIC countries. MNEs need a global supply of business services based on high information velocity to support their foreign operations (Arzaghi and Henderson, 2008). Thus, even when MNEs locate their operations in the suburbs, the globally integrated organisations require central places where the work gets done (Sassen, 2000). Global cities act as such central, strategic places where the resources necessary for global economic activity are deeply embedded in place (ibid).

The implication of our findings in relation to the preceding discussion brings attention to the importance of considering sub-national levels when analysing the strategic location behaviour of MNEs (Goerzen, Asmussen, and Nielsen, 2013). By analysing MNE location behaviour on the sub-national level, the inequities of the geographies and how they find value added will be exposed (Brown et al., 2010). Since MNEs are the dominant players in globalisation by circulating knowledge and technologies (McCann, 2008), the collocation of MNEs in and around global cities will have an influence on the evolution and development of these places, and in turn on the overall process of globalisation (Goerzen, Asmussen, and Nielsen, 2013). This further highlights the importance of studying the internationalisation of MNEs from the BRIC countries as this can differ from developed countries. Thus, the relationship between the evolving strategies of MNEs, the changing geography of the world economy and globalisation is of great importance, and can be the next 'big question' (Buckley and Ghauri, 2004).

5.1.1 Attributes of Global Cities

The growing number of both MNEs and global cities highlights the importance of examining and understanding the locational attributes of the cities that attract foreign MNEs. Our findings illustrate that MNEs from the BRIC countries are present in multiple countries with very distinctive characteristics. As such, this study reinforces the assumption that firms originating from the BRIC countries possess specific strengths and desires that enable them to seek an internationalisation strategy by not only investing in their neighbouring countries, but also in developed economies (Holtbrügge and Kreppel, 2012). Our results highlight the MNEs preference of locating in developed countries, with U.S., U.K and Netherlands being the most preferred countries. Arguably, MNEs from BRIC might have higher motivation to pursue resources that are different from those acquired in their home countries, such as access to technology, management know-how and brand names (ibid). Moreover, developed countries also have strong third-party enforcement mechanisms, such as laws, courts and regulatory agencies. This underpin their strong and formalised institutional structure (Eden and Miller, 2004), which can make foreign operations less unpredictable.

Furthermore, analysing the location behaviour of MNEs on the sub-national level can provide valuable information about the forces that attract or drive subsidiaries away from certain areas. Here, we find evidence that MNEs from the BRIC countries, to a large extent, tend to seek central points in the world economy. As discussed earlier, global cities are central, strategic places with specific characteristics, and serve as hubs of global integration (Sassen, 2001). According to Nachum (2010, p. 715) "global cities differ from other locations in that they host large numbers of financial and business services firms, which serve the needs of typically global and complex businesses".

Geographically, core processes has tended to concentrate, while peripheral processes has tended to segregate. At the simplest level, these mechanisms construct contrary outcomes, and can be used to assess the differences of geography (Brown et al., 2010). As highlighted in the former chapters, global cities are believed to possess numerous centripetal forces that tend to pull population and production into agglomerations. However, it is equally important to point at the unattractive features of global cities, i.e. the centrifugal forces that tend to break such agglomerations up (Audirac, 2005; Krugman and Elizondo, 1996). That is, not all aspects of

global cities may be seen as appealing when considering MNE location strategy. 16% of the subsidiaries in our sample are located in the peripheral area, implying that these units may not benefit from the features of global cities. Indeed, the costs and inconvenience of, for example, large-scale production facilities are important considerations when determining the MNE location strategy, and can also explain why certain MNEs are more prone to locate subsidiaries in the periphery.

Brown et al. (2010) argue that all global product flows consist of core-formation processes which are vital to exert control over the commodity chain, and that these chains cannot be initiated and preserved without global cities no matter where they are located. In simple form, global cities form critical nodes as they provide the core inputs required by all production chains. The scholars further argue that the commodity flow divisions transfer value from cities at all nodes, which in turn results in further flows of profits to the cities. This notion can also be traced back to Sassen's (2001) argumentation - cities are centres for both management and the world economy. Our findings are consistent with these perceptions, and highlights MNEs need of having a relation to global cities, such as possessing a subsidiary located in a global city. On an overall basis our results suggest that the advantages of global cities are enough to offset the drawbacks, as 82% of the subsidiaries in our sample are located within a city or the metropolitan area surrounding the city. Following previous research, the concentration of MNEs in and around global cities is likely to be linked to the key attributes that define global cities. The cosmopolitan environment is regarded as more diverse and accepting compared to other regions, the high levels of advanced producer services intensify knowledge and learning of MNEs, and the high degree of interconnectedness to local and global markets provides robust physical and informal infrastructure (Warf, 2015; Goerzen, Asmussen, and Nielsen, 2013). Arguably, these attributes can be perceived as the impetus behind MNEs preference for locating in global cities.

5.2 MNE Location Strategy and the Liability of Foreignness

The distinct nature and characteristics of global cities is likely to affect the advantages of foreign firms (Nachum, 2010), and can help alleviate the detrimental effects of the LOF caused by institutional distance. Firstly, the unfamiliarity hazard arising from firms' lack of

experience and knowledge of the host country can be reduced by the existence of advanced producer services. These services enable enhanced learning and support, provide advice and expedite the information process for foreign subsidiaries (Eden and Miller, 2004; Mehlsen and Wernicke, 2016). Secondly, the discrimination hazards challenging foreign firms in achieving external legitimacy can be mitigated in a cosmopolitan environment due to the high level of diversity, openness and acceptance found in global cities (Warf, 2015). Lastly, foreign firms might face great uncertainty in terms of political instability and economic fluctuations, as well as difficulties of managing employees at distance. However, these relational hazards can be mitigated in global cities as a result of high levels of interconnectedness, which eases the transfer of capital, people, goods and information (Goerzen, Asmussen, and Nielsen, 2013).

Previous research has found support in the hypothesised relation between institutional distance and MNE location strategy. For example, Xu, Pan, and Beamish (2004) studied the effect of regulative and normative distances on MNE ownership and expatriate strategies. They found that larger regulative and normative distance is associated with smaller presence of expatriates due to difficulties in establishing external legitimacy for subunits in host countries. In a similar vein, Mehlsen and Wernicke (2016) conceptualised institutional distance as regulatory and normative differences, and concluded that subsidiaries are more likely to be located in global cities than in the periphery when institutional distance is large. In the same study, the scholars used cultural distance as a moderator, and found that cultural distance has an impact on the preference for global cities versus the peripheral area. While our study does not fully support the latter notion, we find partial support for the notion that subsidiaries are more likely to locate within a global city as the regulatory and normative distance increases.

Cognitive distance proxied by cultural distance as a construct has received great acceptance in international business (Shenkar, 2001). However, our findings do not support the notion that large cognitive distances between home and host countries lead MNEs from the BIC countries to locate their subsidiaries in global cities. The unexpected results might be explained by the conceptual construct of cultural distance. Shenkar (2001), in his critical review, outlined the theoretical and methodological challenges by applying the Kogut and Singh (1988) index

based on Hofstede's data to quantify culture. He stressed that the 'hidden assumptions' could be the root to many conflicting findings. One of the assumptions receiving considerable attention is the 'illusion of stability' indicating that culture is stable over time, which Shenkar (2001) stresses is only an illusion as cultures will gradually evolve. Hofstede's data on national culture was gathered between 1967 and 1969, and again between 1971 and 1973. Thus, using 40 or 50 years old data in the study of international strategic decisions for the BIC countries can be problematic as these countries have experienced extensive growth the past two decades, and are progressively changing (Sauvant, Maschek, and McAllister, 2010). As the dynamic nature of the BIC countries make them distinct, the strategic behaviour cannot be predicted precisely by using a stable and "static" measure on cultural distance (Xu, Pan, and Beamish 2004). According to Shenkar (2001, p. 519) "complex, intangible and subtle, culture has been notoriously difficult to conceptualise and scale. Establishing a measure gauging the "distance" between cultures has understandably presented an even greater challenge". Similarly, in their review of 180 articles and chapters using Hofstede's cultural values for empirical research, Kirkman, Lowe, and Gibson (2006, p. 313) concluded that "in many areas, Hofstede-inspired research is fragmented, redundant, and overly reliant on certain levels of analysis and direction of effects". Thus, cognitive distance proxied by cultural distance as a construct should be applied and interpreted with caution. As such, we focus on the regulatory and normative institutional distance measures to avoid the risk of including and interpreting erroneous coefficient estimates.

Consistent with empirical study concerning developed countries, our findings indicate that MNEs from the BIC countries prefer to locate within global cities when the regulatory and normative distance increases. However, the normative perspective on the preference for global cities over the peripheral area is the only variable showing significant effect. The fact that the normative distance construct on periphery versus global city is significant might suggest that MNEs from the BIC countries consider the social beliefs possessed by individuals in the particular home country as challenging to understand as these are often embedded deep in the culture. Thus, to overcome LOF, the MNEs seek closer to global cities. The regulatory differences, on the other hand, are easier to understand as these are codified and implemented in routines (Eden and Miller, 2002), which might explains why this pillar is not significant.

While we have emphasised that this discussion is based on the revised models without Russia, it is also of interest to look at how and why the models change when Russia is included. As stated earlier, when Russia is included, high regulatory and normative differences indicate that MNEs prefer to locate outside global cities. However, another picture emerges when Russia is excluded. This suggests that there are differences in the location behaviour of the BRIC countries when institutional distance is present. The findings might also suggest that the Russian MNEs locate their subsidiaries in countries where they are somewhat familiar with the norms and habits of the individuals, as well as the setting, monitoring, and enforcement of rules in the country. Therefore, MNEs are not reliant on the global city characteristics to the same extent because LOF may not be highly present in these locations. However, the findings could also suggest that the Russian MNEs view regulatory and normative differences as an opportunity - and not so much as a liability.

On a general note, our study highlights the complex relation between institutional distance and firm location strategy. They suggest that MNEs from the BIC countries might try to alleviate the regulatory and normative disadvantages by positioning themselves within global cities, and exploit the benefits that reduce the disadvantages and additional costs associated with distance. This underpins the notion of Nachum (2003), that strategic location positioning might make firms able to manipulate the strength and the persistence of the LOF. Ought to be mentioned, LOF does not necessarily apply to all foreign activity a firm undertakes. Instead, LOF is likely to vary in line with the different advantages a firm possess, and in the different settings these can be exploited. Therefore, there is need for cautious evaluation of the specific context of foreign expansion, and the extent to which LOF is expected to be encountered there. Consequently, one might argue that it is necessary to investigate the LOF on a firmlevel basis to draw inferences about the MNEs specific location strategy.

5.3 Subsidiary Industry and Location Strategy

As proposed in hypothesis 3 to 5, we believe that subsidiary industry has an impact on the choice of location. In more detail, R&D-intensive industries under high pressures for global integration are believed to be located outside the global city, while highly advertising-

intensive industries under pressure for local responsiveness are believed to be more likely to locate in global cities. Industries facing pressure for both global integration and local responsiveness are believed to pull towards global cities when the institutional distance is large.

The notion that high global integration pressures drive foreign subsidiaries away from global cities is a fundamental assumption of MNE theory in the international business literature. For example, Alcácer and Chung (2007) found that technologically advanced firms tend to avoid areas with industrial activity to distance themselves from competition and rivalry, and as such protect their competitive advantages. According to our findings, this also applies for MNEs from the BRIC countries. This further strengthens the notion that R&D-intensive industries might put more emphasis on the additional costs of locating within a global city compared to the potential advantages. Especially, large-scale R&D and production facilities require space, and the costs and inconveniences of being located within a global city are decisive factors in the choice of locating outside these areas.

Turning the attention to advertising-intensive industries under high pressure for local responsiveness, our empirical study found significant evidence that MNEs seek the metropolitan area over global cities. Moreover, we found an indication for the notion that these industries favour global cities over the peripheral area. The former finding is inconsistent with other studies which have used developed countries as home countries. We therefore suggest that location behaviour of such industries might be different for MNEs from the BRIC countries compared to MNEs from developed countries. There are two underlying reasons that might clarify the discrepancy in the results between our study and the findings of previous scholars.

First, the function of each subsidiary has an important implication on the location choice. However, due to the delimitations of this study, we are not able to say what kind of subsidiary is located where. Yet, relying on the findings of Cuervo-Cazzura (2007), that firms from developing countries seeking technological advantages in the host country are more likely to begin their multi-nationalisation in developed countries. Contrary, firms from developing countries seeking to access new markets abroad are more likely to establish foreign subsidiaries in developing countries to obtain access to a country's abundant resources. As such, this would imply that emerging market MNEs are hesitant to locate costly production and R&D-facilities in developing countries with less sophisticated innovation systems, underdeveloped capital markets, and fewer and less developed suppliers (ibid). Conversely, emerging market MNEs are more likely to internationalise advertising-intensive industries in developing countries. This might make it easier to locate in the metropolitan area as the MNE might have more knowledge about the requirements and preferences of customers in that country as they are geographically closer. Thus, the MNEs would be more prone to locate outside global cities as they might have the knowledge and experience to assume more risks.

Second, the evidence for locating in the metropolitan area over the global city when the pressures for local responsiveness are high is statistically significant. This might suggest that we need to take into account the blurred delineation of the boundaries between the global city and the metropolitan area surrounding it. That is, the metropolitan area might possess global city characteristics, which implies that these areas can enjoy some of the same benefits as the global cities. The benefits of a global city, or in other words, the centripetal forces that attract production into global cities, can broadly be categorised as the natural advantages such as access to markets and labour force. This indicates that the high levels of interconnectedness, cosmopolitanism and advanced producer services found in global cities (Goerzen, Asmussen, and Nielsen, 2013) can, to some extent, be transferred, and therefore apply for the metropolitan area surrounding the global city. This will in turn mitigate the hazards that give rise to LOF, namely the unfamiliarity, discriminatory, and relational hazards.

Lastly, according to our findings, the location of subsidiaries with mixed pressures is not significantly affected by the dimensions of institutional distance, albeit there is an indication that MNEs faced by high dual pressures are more likely to locate their subsidiaries in a global city over the peripheral area when the regulatory and normative distances increase. According to Eden and Miller (2004) the conflicting pressures for local responsiveness and global integration becomes stronger as the institutional distance increases. The essence behind this is that as the institutional distance increases, the more difficult it will be for the MNE to build external legitimacy (Kostova and Zaheer, 1999), thus increasing the pressure for local responsiveness (Doz, 1980; Prahalad and Doz, 1987). At the same time, the larger the

institutional distance between home and host country, practicing a global integration strategy becomes difficult as it will be more problematic to transfer strategic routines between the parent firm and its subsidiaries (Kostova and Roth, 2002). Thus, when these conflicting forces are present, the MNEs might choose to locate the subsidiary in global cities to alleviate the difficulties of building external legitimacy and transferring strategic routines. The high levels of interconnectedness, cosmopolitanism and advanced producer services found in global cities will ease the processes and make them more manageable.

In summation, our findings contribute to an enhanced understanding of the implications of foreignness in international competition. Depending on the industry under examination, global cities possess both appealing and dis-enchanting peculiarities. The findings might also illustrate that the practices of subsidiary industries under mixed pressures require different strategic responses to alleviate the liability of the unknown.

6. Limitations and Future Research

This chapter addresses the potential limitations of the study. While we want to provide fertile avenues for future research, it is equally important to emphasize how the findings could have been different given alternative approaches to both theoretical framework and methodology.

One potential limitation is our focus on the commonalities between global cities, and not the inequalities between them. However, global cities may be distinct in their industrial traditions, which further impact their attractiveness to firms from various sectors (Goerzen, Asmussen, and Nielsen, 2013). This might suggests that there are other characteristics besides cosmopolitan environments, advanced producer services, and interconnectedness that attract certain firms to specific cities. Additionally, this study focused on two levels - headquarters and subsidiaries. Nevertheless, we acknowledge that the operations an MNE undertakes may be embedded in other layers of relationships. This implies that we may have not been able to capture the complexity of subsidiary network on the global, regional and local levels (ibid). Thus, we acknowledge that there might be other particularities that influence MNE location strategy besides the variables defined in this study. These factors are left for future studies to explore.

Additionally, the delineation of global city boundaries might have an impact on our findings. While we have followed the approach of Goerzen, Asmussen, and Nilsen (2013), and included the metropolitan area in addition to inner city and the periphery, the delineation of cities and the differences between the categories may not be so distinct in nature. That is, the global cities attributes might exceed the 10 kilometre boundaries applied in this study. This could imply that being located in the metropolitan area can enable foreign subsidiaries to benefit from the urban life found in the inner city. Hence, applying other criteria in determining the delineation of the inner city, metropolitan area, and the periphery can perhaps provide different results. However, an improved understanding of the delineation of cities is beyond the scope of this study, but can be a fruitful area for future researchers.

Moreover, as emphasized in the methodology and discussion chapter, Russia has large influence on the institutional distance construct. This accentuates the importance of considering the disparities between MNEs from different countries, and suggests that emerging markets or the BRIC countries should perhaps not be considered as a homogenous group. Nachum (2003) also stresses that LOF tend to differ in line with the type of advantages the MNE possess. Therefore, there is a need for careful assessment of the individual circumstances of foreign expansion and development to obtain a more thorough understanding of MNE location strategy. Thus, establishing the external validity of the findings reported in this study by addressing other emerging markets is an important task for future research.

Lastly, in the study of location strategies of MNEs from BRIC and other emerging markets, it is important to continuously incorporate updated information about the internationalisation of these firms. This is vital due to the accelerating growth of these economies, including the continuing liberalisation of FDI regimes worldwide. The increasing globalisation can in turn have an influence on the dynamics of cities and the surrounding areas. Scott (2001b) notes that large cities all over the world continue to increase in size, and his view attaches importance of understanding the dynamic process of city transformation. He further stresses that "selected urbanized areas in a number of less-developed countries are likely eventually to accede as dynamic nodes to the expanding mosaic of global city-regions, just as places like Seoul, Taipei, Hong Kong, Singapore, Mexico City, Sao Paulo, and others, have done, and are doing, before them" (Scott, 2001b, p. 823). This notion highlights the need for continuously updated studies of global cities and the influence they have on the location behaviour of MNEs.
7. Conclusion

This study has investigated how LOF can influence the propensity of MNEs to locate their foreign subsidiaries in global cities. The concepts of global cities, LOF, and MNE location strategy have previously been empirically tested by considering MNEs from developed countries, but similar research from the perspective of MNEs from the BRIC countries has been unexplored - until now. To explore the research gap in the contemporary literature, this study was based on the following research question: "*How can the liability of foreignness influence subsidiary location strategy in a global city associated with the international operations of MNEs?*" To provide concluding remarks on the main findings in this study we will answer the four sub-questions in short.

The first question aimed to identify the characteristics of global cities. By combining the existing literature on this topic, we identified three attributes that differentiate global cities from other cities, namely cosmopolitan environment, advanced producer services, and interconnectedness. Although the increased globalisation has resulted in a growing perception that geography is less important and that the world is 'placeless' and 'flat', our study argue that location is still a central question in international business research. Arguably, we suggest that global cities possess appealing characteristics that increases the tendency of MNEs from the BRIC countries to locate in global cities. The justification for this is that 82% of the subsidiaries in our sample are located within a global city or in the metropolitan area surrounding the city.

Sub-question two and three aimed to uncover and construct valid measures of the components of LOF. Along with the economic cost inflicted on foreign firms, LOF has been identified as the driver behind 'the cost of doing business abroad', and thus, considered as the core strategic issue for MNE managers. The term can be decomposed into unfamiliarity, relational, and discriminatory hazards, and is driven by the institutional distance between countries. By conceptualising LOF as regulatory, normative, and cognitive institutions, we aimed to construct valid measures to capture the components of LOF.

The fourth sub-question investigated how the properties of global cities can reduce the impact of the LOF. On a general note, our findings suggest that regulatory and normative distances can make MNEs from the BIC countries more prone to locate subsidiaries within a global city or the area surrounding the city. Thus, we suggest that MNEs from the BIC countries are driven by similar motivations as multinationals from developed countries. When incorporating the effects of industries, our findings indicate that subsidiaries operating under pressure for global integration are more likely to locate outside the global city. This is also in compliance with the location behaviour of MNEs from developed countries. Moreover, industries under pressure for responsiveness seem to be attracted to global cities over the peripheral area. Yet, the same industries prefer the metropolitan area over global cities, which might indicate that the location behaviour of MNEs from the BRIC countries under responsiveness pressures might be somewhat different from developed countries. In addition, our study indicates that industries operating under mixed pressures are more likely to locate in the global city when the regulatory and normative distance between home and host countries increases. Arguably, we propose that an increase in regulatory or normative distance can motivate MNEs to favour global cities, as these cities possess attributes capable of reducing the LOF. Our findings highlight the possibility of different preferences among industries.

In summation, the application of a global city perspective has enabled us to gain insight into the behaviour and modern economic location configuration of MNEs from the BRIC countries. Furthermore, the study has also managed to identify the motives behind MNEs tendency to seek global cities. According to our findings, the global city attributes are found appealing by MNEs from the BRIC countries, as these sites have the ability to reduce the LOF inflicted on MNEs. Our findings do to a large extent support previous empirical research investigating location strategies from the perspective of developed countries. Yet, this study also highlights the importance of not considering the BRIC countries as a homogenous group but rather to comprehend the individual differences both on the national and firm level. Conclusively, this study contributes to a more nuanced understanding of MNEs in the geographic space. The findings have important implications for the way multinationals compete in foreign markets, and can also provide valuable insight for scholars and policymakers concerning the factors that attract and repel MNE activity.

8. References

Abrahamson, M., 2004. *Global cities*. New York: Oxford University Press.

Alcacer, J. and Chung, W., 2007. Location strategies and knowledge spillovers. *Management Science*, 53(5), pp.760-776.

Almeida, P., 1996. Knowledge sourcing by foreign multinationals: patent citation analysis in the US semiconductor industry. *Strategic management journal*, *17*(S2), pp.155-165.

Amal, M., Baffour Awuah, G., Raboch, H., and Andersson, S., 2013. Differences and similarities of the internationalization processes of multinational companies from developed and emerging countries. *European Business Review*, 25(5), pp.411-428.

Anderson, E. and Gatignon, H., 1986. Modes of foreign entry: A transaction cost analysis and propositions. *Journal of International Business Studies*, pp.1-26.

Arzaghi, M. and Henderson, J.V., 2008. Networking off madison avenue. *The Review of Economic Studies*, 75(4), pp.1011-1038.

Asmussen, C.G., 2009. Local, regional, or global? Quantifying MNE geographic scope. *Journal of International Business Studies*, 40(7), pp.1192-1205.

Audirac, I., 2005. Information technology and urban form: challenges to smart growth. *International Regional Science Review*, 28(2), pp.119-145.

Aybar, B. and Ficici, A., 2009. Cross-border acquisitions and firm value: An analysis of emerging-market multinationals. *Journal of International Business Studies*, 40(8), pp.1317-1338.

Bagozzi, R.P., Yi, Y., and Phillips, L.W., 1991. Assessing construct validity in organizational research. *Administrative Science Quarterly*, pp.421-458.

BBC, 2016. *Hong Kong territory profile*. [online] Available at: http://www.bbc.com/news/world-asia-pacific-16517764> [Accessed February 15]

BDO International, 2006. *International Financial Reporting Bulletin*. [pdf] Avaliable at: http://www.bdointernational.com/Services/Audit/IFRS/IFR-Bulletins-2011/IFRB%202006/IFRB-2006-04.pdf> [Accessed 22 Mars 2016]

Beaverstock, J.V., Smith, R.G. and Taylor, P.J., 1999. A roster of world cities. *Cities*, 16(6), pp.445-458.

Berry, H., Guillén, M.F. and Zhou, N., 2010. An institutional approach to cross-national distance. *Journal of International Business Studies*, 41(9), pp.1460-1480.

Beugelsdijk, S. and Mudambi, R., 2013. MNEs as border-crossing multi-location enterprises: The role of discontinuities in geographic space. *Journal of International Business Studies*, 44(5), pp.413-426.

Beugelsdijk, S., McCann, P. and Mudambi, R., 2010. Introduction: Place, space and organization—economic geography and the multinational enterprise. *Journal of Economic Geography*, 10(4), pp.485-493.

Brown, E., Derudder, B., Parnreiter, C., Pelupessy, W., Taylor, P.J. and Witlox, F., 2010. World City Networks and Global Commodity Chains: towards a world-systems' integration. *Global Networks*, 10(1), pp.12-34.

Buckley, P.J. and Ghauri, P.N., 2004. Globalisation, economic geography and the strategy of multinational enterprises. *Journal of International Business Studies*, 35(2), pp.81-98.

Campa, J., & Guille'n, M. F. 1999. The internalization of exports: Firm- and location-specific factors in a middle-income country. *Management Science*, 45(11): 1463–1478.

Cantwell, J., 2009. Location and the multinational enterprise. *Journal of International Business Studies*, 40(1), pp.35-41.

Cornish, R., 2007. *Statistics: 3.3 Factor analysis.* [pdf] Mathematics Learning Support Centre. Available at:

<http://www.lboro.ac.uk/media/wwwlboroacuk/content/mlsc/downloads/3.3_Factoranalysis.p df> [Accessed 01 May 2016]

Cuervo-Cazurra, A., 2007. Sequence of value-added activities in the multinationalization of developing country firms. *Journal of international Management*, 13(6), pp.258-277.

Cuervo-Cazurra, A., 2012. Extending theory by analyzing developing country multinational companies: Solving the Goldilocks debate. *Global Strategy Journal*, 2(3), pp.153-167.

Deng, P., 2012. The Internationalization of Chinese Firms: A Critical Review and Future Research*. *International Journal of Management Reviews*, 14(4), pp.408-427.

DiMaggio, P., and Powell, W., 1983. The Iron Cage Revisited: Institutional isomorphism and collective rationality in organizational fields. *American Sociological Review*, 48(2), 147-160.

Doz, Y., 1980. Strategic management in multinational companies. *Sloan Management Review*, 21(2), 27–46.

Drogendijk, R. and Slangen, A., 2006. Hofstede, Schwartz, or managerial perceptions? The effects of different cultural distance measures on establishment mode choices by multinational enterprises. *International Business Review*, 15(4), pp.361-380.

Eden, L. and Miller, S.R., 2004. Distance matters: Liability of foreignness, institutional distance and ownership strategy. *Advances in International Management*, 16(187-221).

Eden, L. and Molot, M.A., 2002. Insiders, outsiders and host country bargains. *Journal of International Management*, 8(4), pp.359-388.

Florida, R., 2004. America's looming creativity crisis. *Harvard Business Review*, 82(10), pp.122-136.

Fortanier, F., Muller, A. and van Tulder, R., 2007. Internationalization and performance: the moderating role of strategic fit. *Research in Global Strategic Management*, 13, pp.177-200.

Friedman, T.L., 2005. *It's a flat world, after all*. The New York Times [online] 03. April 2005. Available at: ">http://www.nytimes.com/2005/04/03/magazine/its-a-flat-world-after-all.html?_r=0> [Accessed 01 May 2016]

Friedmann, J., 1986. The world city hypothesis. *Development and Change*, 17(1), pp.69-83.

Frost, T.S., 2001. The geographic sources of foreign subsidiaries' innovations. *Strategic Management Journal*, 22(2), pp.101-123.

Fujita, M. and Thisse, J.F., 1996. Economics of agglomeration. *Journal of the Japanese and International Economies*, 10(4), pp.339-378.

Gammeltoft, P., 2008. Emerging multinationals: outward FDI from the BRICS countries. *International Journal of Technology and Globalisation*, 4(1), pp.5-22.

GaWC, 2014. *The world according to GaWC 2012*. [online] Globalization and World cities Research Network. Available at: http://www.lboro.ac.uk/gawc/world2012t.html [Accessed 01 May 2016]

GaWC, 2016. *The World According to GaWC*. [online] Globalization and World Cities Research Network. Available at: http://www.lboro.ac.uk/gawc/gawcworlds.html [Accessed 01 February 2016]

Ghauri, P. and Grønhaug, K. 2010. Research methods in business studies. 4th ed. Harlow: Financial Times Prentice Hall.

Ghemawat, P., 2007. Redefining global strategy: Crossing borders in a world where differences still matter. *Boston: Harvard Business School Publishing*, pp.40-64.

Goerzen, A., Asmussen, C. G., and Nielsen, B. B. 2013. Global cities and multinational enterprise location strategy. *Journal of International Business Studies*, 44, pp. 427-450.

Gordon, I.R. and McCann, P., 2000. Industrial clusters: complexes, agglomeration and/or social networks?. *Urban studies*, 37(3), pp.513-532.

Gripsrud, G., Olsson, U.H., and Silkoset, R. 2010. *Metode og dataanalyse Metode og dataanalyse*. 2nd ed. Kristiansand: Høyskoleforl.

Hales, M., Peña, A. M., Peterson, E., and Gott, J., 2015. *Global Cities 2015: The Race Accelerates*. [pdf] A.T. Kearney. Available at: https://www.atkearney.com/documents/10192/5911137/Global+Cities+201+-+The+Race+Accelerates.pdf/7b239156-86ac-4bc6-8f30-048925997ac4> [Accessed 01 May 2016]

Harvey, D. 1990. *The Condition of Postmodernity: An enquiry into the origins of cultural change*. Basil Blackwell Inc, Cambridge

Hennart, J.F., 2012. Emerging market multinationals and the theory of the multinational enterprise. *Global Strategy Journal*, 2(3), pp.168-187.

Hofstede, G. and Bond, M.H., 1988. The Confucius connection: From cultural roots to economic growth. *Organizational Dynamics*, 16(4), pp.5-21.

Hofstede, G., Hofstede, G.J., Minkov, M. 2010. *Cultures and Organizations: Software of the Mind.* Revised and Expanded 3rd ed. New York: McGraw-Hill

Holtbrügge, D. and Kreppel, H., 2012. Determinants of outward foreign direct investment from BRIC countries: an explorative study. *International Journal of Emerging Markets*, 7(1), pp.4-30.

House, R.J., Hanges, P.J., Javidan, M., Dorfman, P.W. and Gupta, V. eds., 2004. *Culture, leadership, and organizations: The GLOBE study of 62 societies*. Sage publications.

Hymer, S.H., 1960. The International Operations of National Firms: A Study of Direct Investment Phd Thesis. *Massachusetts Institute of Technology, Cambridge*.

Jacobs, J., 1969. The economy of cities. New York: Vintage.

Jacobs, J., 1984. Cities and the wealth of nations. New York: Random House.

Jacobs, J., 2000. The nature of economics. New York: Vintage.

Jazeel, T., 2007. review essay: Spectres of tolerance: living together beyond cosmopolitanism Cosmopolitanism: ethics in a world of strangers. By Kwame Anthony Appiah. London: Allen Lane, an imprint of Penguin Books. 2006. 209 pp.£ 16.99 cloth. ISBN 0 713 99941 1. After empire melancholia or convivial culture? By Paul Gilroy. London and New York: Routledge. 2004. 200 pp.£ 15.99 paper. ISBN 0 415 34308 9. After the cosmopolitan? Multicultural cities and the future of racism. By Michael Keith. London and New York. *Cultural Geographies*, 14(4), pp.617-624.

Jepperson, R.L., 1991. Institutions, institutional effects, and institutionalism. *The New Institutionalism in Organizational Analysis*, *6*, pp.143-163.

Kandogan, Y., 2012. An improvement to Kogut and Singh measure of cultural distance considering the relationship among different dimensions of culture. *Research in International Business and Finance*, 26(2), pp.196-203.

Kifana, B.D. and Abdurohman, M., 2012. Great Circle Distance Methode for Improving Operational Control System Based on GPS Tracking System. *International Journal on Computer Science and Engineering (IJCSE)*, 4(04), pp.647-662.

Kirkman, B.L., Lowe, K.B. and Gibson, C.B., 2006. A quarter century of culture's consequences: A review of empirical research incorporating Hofstede's cultural values framework. *Journal of International Business Studies*, 37(3), pp.285-320.

Kogut, B. and Singh, H., 1988. The effect of national culture on the choice of entry mode. *Journal of International Business Studies*, pp.411-432.

Kostova, T. and Zaheer, S., 1999. Organizational legitimacy under conditions of complexity: The case of the multinational enterprise. *Academy of Management Review*, 24(1), pp.64-81.

Kostova, T., 1999. Transnational transfer of strategic organizational practices: A contextual perspective. *Academy of Management Review*, 24(2), pp.308-324.

Kostova, T., and Roth, K., 2002. Adoption of an organizational practice by subsidiaries of multinational corporations: Institutional and relational effects. *Academy of Management Journal*, 43(1), 215–233.

Kothari, C.R., 2004. *Research Methodology: Methods and techniques (second revised edition)*. [e-book] New Age International. Available at: ">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Methods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Nethods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._Kothari_Research_Methodology_Nethods_and_Techniques_2009.pdf?sequence=1>">http://202.74.245.22:8080/xmlui/bitstream/handle/123456789/45/C.R._kothari_Research_Methodology_Nethods_and_Techniques_2009.pdf">http://202.74.245/Research_R

Krugman, P. and Elizondo, R.L., 1996. Trade policy and the third world metropolis. *Journal of development Economics*, 49(1), pp.137-150.

Krugman, P., 1994. Urban concentration: the role of increasing returns and transport costs. *The World Bank Economic Review*, 8(suppl 1), pp.241-263.

Ledesma, R.D. and Valero-Mora, P., 2007. Determining the number of factors to retain in EFA: An easy-to-use computer program for carrying out parallel analysis. *Practical Assessment, Research & Evaluation*, 12(2), pp.1-11.

LexisNexis, 2013. *Corporate affiliations*. [online] Available at: [Accessed on 01 February 2016].

Lorenzen, M., and Mudambi, R., 2013. Clusters, Connectivity and Catch-up: Bollywood and Bangalore in the Global Economy. *Journal of Economic Geography*, 13(3), pp. 501-534.

Lu, X. and White, H., 2014. Robustness checks and robustness tests in applied economics. *Journal of Econometrics*, 178, pp.194-206.

Malhotra, N., Birks, D., and Wills, P., 2012. *Marketing research: An applied approach*. 4th ed. London: Pearson Education

Mapchart, 2016. [online] Mapchart.net. Availiable at: http://mapchart.net/detworld.html [Accessed 20 April 2016]

Marshall, A. 1930. *Principles of economics: An introductory volume*, 8th ed. London: Palgrave Macmillan.

Mathur, S. and Dasgupta, M., 2013. BRICS trade policies, institutions and areas of deepening cooperation. *New Delhi: Centre for WTO Studies*.

Mayer, T. and Zignago, S., 2011. *Notes on CEPII's distances measures: the GeoDist database*. [pdf] Munich Personal RePEc Archive. Available at: https://mpra.ub.uni-muenchen.de/36347/2/MPRA_paper_36347.pdf> [Accessed 21 March 2016]

McCann, P., 2008. Globalization and economic geography: the world is curved, not flat. *Cambridge Journal of Regions, Economy and Society*, 1(3), pp. 351-370.

Mehlsen, K. and Wernicke, G., 2016. Global cities and liability of foreignness. *European Journal of International Management*, 10(1), pp.78-94.

Menard, S., 2002. Applied Logistic Regression Analysis, 2nd ed. SAGE Publications.

Merchant H., Tung, R., and Verbeke, A., 2012. The tenuous link between cultural distance and international strategy: navigating the assumptions of cross-cultural research. In: A. Verbeke and H. Merchant, eds. 2012. *Handbook of Research on International Strategic Management*. Cheltenham: Edward Elgar. Ch. 16

Mezias, J.M., 2002a. Identifying liabilities of foreignness and strategies to minimize their effects: The case of labor lawsuit judgments in the United States. *Strategic Management Journal*, 23(3), pp.229-244.

Mezias, J.M., 2002b. How to identify liabilities of foreignness and assess their effects on multinational corporations. *Journal of International Management*, 8(3), pp.265-282.

Mulaik, S. 2010. *Foundations of factor analysis*, 2.nd ed., Chapman & Hall/CRC statistics in the social and behavioral sciences series. Boca Raton: Chapman & Hall/CRC.

Mwemezi, J.J. and Huang, Y., 2011. Optimal facility location on spherical surfaces: algorithm and application. *Logistics Research Center, Shanghai Maritime University*.

Nachum, L. and Wymbs, C., 2005. Product differentiation, external economies and MNE location choices: M&As in global cities. *Journal of International Business Studies*, pp.415-434.

Nachum, L., 2003. Liability of foreignness in global competition? Financial service affiliates in the city of London. *Strategic Management Journal*, 24(12), pp.1187-1208.

Nachum, L., 2010. When is foreignness an asset or a liability? Explaining the performance differential between foreign and local firms. *Journal of Management*. 36(3), pp. 714-739

North, D.C. 1991. Institutions. *The Journal of Economic Perspectives*, 5(1), pp. 97-112.

O'Brien, R., 1992. *Global Financial Integration: The end of geography*. New York: Council on Foreign Relations Press.

O'Brien, R.M., 2007. A caution regarding rules of thumb for variance inflation factors. *Quality & Quantity*, 41(5), pp.673-690.

Petersen, B. and Pedersen, T., 2002. Coping with liability of foreignness: Different learning engagements of entrant firms. *Journal of International Management*, 8(3), pp.339-350.

Porter, M. 1998. *Clusters and the new economics of competition*. Harvard Business Review, [online] Available at: https://hbr.org/1998/11/clusters-and-the-new-economics-of-competition> [Accessed 02 May 2016]

Pradhan, J.P., 2011. Emerging multinationals: A comparison of Chinese and Indian outward foreign direct investment. *Institutions and Economies*, 3(1), pp.113-148.

Prahalad, C. K., and Doz, Y., 1987. *The multinational mission: Balancing local demands and global vision*. New York: Free Press.

Punch, K.F., 1998. *Introduction to Social Research: Quantitative and qualitative methods*. London: SAGE Publication.

Ranjan, V. and Agrawal, G., 2011. FDI inflow determinants in BRIC countries: a panel data analysis. *International Business Research*, 4(4), p.255.

Sassen, S. 1991. *The global city: New York, London, Tokyo*. Princeton, NJ: Princeton University Press.

Sassen, S. 1994. Cities in a World Economy. Thousand Oaks, CA: Pine Forge/Sage.

Sassen, S. 2000. The Global City: Strategic Site/New Frontier. *American Studies*, 41(2/3), pp.79–95.

Sassen, S., 2001. Global cities and global city-regions: a comparison. Global city-regions: Trends. In A. Scott ed. *Global City-Regions: Trends, Theory, Policy*, Oxford: Oxford University Press, pp.78-95.

Sassen, S., 2004. Global City: Introducing a Concept, The Brown J. World Aff., 11, p.27.

Saunders, M., Lewis, P., Thornhill, A., 2016. *Research methods for business students*. 7th ed. Harlow: Pearson.Education Limited.

Sauvant, K.P., 2005. New sources of FDI: the BRICs-outward FDI from Brazil, Russia, India and China. *J. World Investment & Trade*, 6, p.639.

Sauvant, K.P., Maschek, W.A., and McAllister, G., 2010. Foreign direct investment by emerging market multinational enterprises, the impact of the financial crisis and recession, and challenges ahead. In K.P. Sauvant, G. McAllister, and W.A. Maschek, eds. 2010. *Foreign Direct Investments from Emerging Markets*. Palgrave Macmillan US. Ch.1.

Schwab, K. and Sala-i-Martín, X., 2015. *Insight Report: The Global Competitiveness Report* 2015–2016. [pdf] Geneva: World Economic Forum. Available at: http://www3.weforum.org/docs/gcr/2015-2016/Global_Competitiveness_Report_2015-2016.pdf [Accessed 01 May 2016]

Schwartz, S.H., 1994. *Beyond individualism/collectivism: New cultural dimensions of values.* Sage Publications, Inc.

Scott, A. 2001a. Global city-regions: Trends, theory, policy. Oxford: Oxford University Press.

Scott, A.J., 2001b. Globalization and the rise of city-regions. *European Planning Studies*, 9(7), pp.813-826.

Shenkar, O., 2001. Cultural distance revisited: Towards a more rigorous conceptualization and measurement of cultural differences. *Journal of International Business Studies*, pp.519-535.

Simonoff, J.S., 2012. Smoothing methods in statistics. Springer Science & Business Media.

Storper, M. and Venables, A.J., 2004. Buzz: face-to-face contact and the urban economy. *Journal of Economic Geography*, 4(4), pp.351-370.

Tavakol, M. and Dennick, R., 2011. Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2, p.53.

Taylor, P.J., 2013. *Extraordinary cities: Millennia of moral syndromes, world-systems and city/state relations*. Edward Elgar Publishing.

The Economist Intelligence Unit, 2012. *Hot spots: Benchmarking global city competitiveness*. [pdf] The Economist Intelligence Unit. Available at:

<http://www.citigroup.com/citi/citiforcities/pdfs/eiu_hotspots_2012.pdf> [Accessed 02 May 2016]

The United States Census Bureau, 2016a. 2012 NAICS Definition. [online] Available at: http://www.census.gov/cgi-

bin/sssd/naics/naicsrch?chart_code=54&search=2012%20NAICS%20Search> [Accessed 21 February 2016]

The United States Census Bureau, 2016b. *Frequently Asked Questions* (FAQs). [online] Available at: ">http://www.census.gov/eos/www/naics/faqs/faqs.html#q1> [Accessed 21 March 2016]

The World Bank Group, 2016. *GNI per capita, PPP*. [online] Available at: http://data.worldbank.org/indicator/NY.GNP.PCAP.PP.CD [Accessed 09 April 2016]

Torres-Reyna, O., 2016. *Getting started in factor analysis (using Stata 10)*. Princeton University. [pdf] Available at: https://www.princeton.edu/~otorres/Factor.pdf> [Accessed 30 March 2016]

UCLA: Statistical Consulting Group, 2016a. *Stata Annotated Output: Factor Analysis*. [online] Availiable at: http://www.ats.ucla.edu/stat/stata/output/fa_output.htm> [Accessed 1 April 2016]

UCLA: Statistical Consulting Group, 2016b. *SPSS FAQ: What does Cronbach's alpha mean?* [online] Available at: http://www.ats.ucla.edu/stat/spss/faq/alpha.html [Accessed 10 April 2016]

UCLA: Statistical Consulting Group, 2016c. *Stata Data Analysis Examples: Multinomial Logistic Regression*. [online] Available at: http://www.ats.ucla.edu/stat/stata/dae/mlogit.htm [Accessed 10 April 2016]

UCLA: Statistical Consulting Group, 2016d. *FAQ: What are pseudo R-square's?* [online] Available at: http://www.ats.ucla.edu/stat/mult_pkg/faq/general/Psuedo_RSquareds.htm [Accessed 12 April 2016]

UCLA: Statistical Consulting Group, 2016e. *Annotated SPSS Output: Descriptive Statistics*. [online] Available at: http://www.ats.ucla.edu/stat/spss/output/descriptives.htm> [Accessed 19 April 2016]

UCLA: Statistical Consulting Group, 2016f. *Stata Web Books; Regression with Stata; Chapter 2 - Regression Diagnostics*. [online] Available at: <http://www.ats.ucla.edu/stat/stata/webbooks/reg/chapter2/statareg2.htm> [Accessed 12 April 2016] van Hoorn, A. and Maseland, R., 2014. Is distance the same across cultures? A measurementequivalence perspective on the cultural distance paradox. *Multinational Enterprises, Markets, and Institutional Diversity: Progress in International Business Research*, 9, pp.207-227.

Vertovec, S. and Cohen, R., 2002. *Conceiving cosmopolitanism: Theory, context and practice*. Oxford University Press on Demand.

Warf, B., 2015. Global cities, cosmopolitanism, and geographies of tolerance. *Urban Geography*, 36(6), pp.927-946.

Xu, D. and Shenkar, O., 2002. Note: Institutional distance and the multinational enterprise. *Academy of Management review*, 27(4), pp.608-618.

Xu, D., Pan, Y. and Beamish, P.W., 2004. The effect of regulative and normative distances on MNE ownership and expatriate strategies. *MIR: Management International Review*, pp.285-307.

Yang, X., Jiang, Y., Kang, R., and Ke, Y., 2009. A comparative analysis of the internationalization of Chinese and Japanese firms. *Asia Pacific Journal of Management*, 26(1), pp.141-162.

Yeganeh, H., 2014. A Weighted, Mahalanobian, and Asymmetrical Approach to Calculating National Cultural Distance. *Journal of International Management*, 20(4), pp.436-463.

Yip, G.S., 1995. *Instructor's Manual: Total Global Strategy: Managing for Worldwide Competitive Advantage*. Prentice Hall.

Zaheer, S. and Mosakowski, E., 1997. The dynamics of the liability of foreignness: A global study of survival in financial services. *Strategic Management Journal*, 18(6), pp.439-463.

Zaheer, S., 1995. Overcoming the liability of foreignness. *Academy of Management Journal*, 38(2), pp.341-363.

Zaheer, S., 2002. The liability of foreignness, redux: A commentary. *Journal of International Management*, 8(3), pp.351-358.

Zaheer, S., Schomaker, M.S. and Nachum, L., 2012. Distance without direction: Restoring credibility to a much-loved construct. *Journal of International Business Studies*, 43(1), pp.18-27.

Zucker, L.G., 1983. Organizations as institutions. *Research in the Sociology of Organizations*, 2(1), pp.1-47.

9. Appendices

Appendix 1: Roster of Global Cities

Appendix 2: Factor Analysis – Regulatory Institutions

Appendix 3: Factor Analysis - Normative Institutions

Appendix 4: Correlation matrices for Regulatory and Normative Institutions

Appendix 5: Distribution of Subsidiaries by Country and Classification

Appendix 6: Multinomial Logistic Regression Models – Regulatory Models

Appendix 7: Robustness Test 1

Appendix 8: Robustness Test 2

Alpha World Cities (<i>n=45</i>)				Beta World Cities (n=77)			Gamma World Cities (n=59)			
Alpha ++ (<i>n</i> =2)	Alpha + (<i>n</i> =8)	Alpha (n=13)	Alpha - (<i>n</i> =22)	Beta + $(n=24)$	Beta (<i>n</i> =18)	Beta - (<i>n</i> =35)		Gamma + (<i>n=19</i>)	Gamma (n=18)	Gamma - (<i>n</i> =22)
London	Hong Kong	Chicago	Seul	Bangalore	Ho Chi Minh City	Guatemala City	Denver	Zagreb	Glasgow	Nantes
New York	Paris	Mumbai	Johannesburg	Lisbon	Bogota	Lyon	Perth	Lahore	San Juan	Tianjin
	Singapore	Milan	Buenos Aires	Copenhagen	Auckland	Panama City	Calcutta	St Petersburg	Marsheille	Accra
	Shanghai	Moscow	Vienna	Santiago	Montevideo	San Jose	San Diego	Jeddah	Guadalajara	Algiers
	Tokyo	Sao Paulo	San Francisco	Guangzhou	Caracas	Bratislava	Amman	Durban	Leeds	Gothenburg
	Beijing	Frankfurt	Istanbul	Rome	Riyadh	Minneapolis	Antwerp	Santo Domingo	Baku	Porto
	Sydney	Toronto	Jakarta	Cairo	Vancouver	tunis	Manama	St Louis	Vilnius	Columbus
	Dubai	Los Angeles	Zurich	Dallas	Chennai	Nairobi	Birmingham	Islamabad	Tallinn	Utrecht
		Madrid	Warsaw	Hamburg	Manchester	Cleveland	Nicosia	Guayaquil	Raleigh	Orlando
		Mexico City	Washington	Düsseldorf	Oslo	Lagos	Quito	Baltimore	Ankara	Ahmedabad
		Amsterdam	Melbourne	Athens	Brisbane	Abu Dhabi	Rotterdam	San Salvador	Belfast	Asuncion
		Kuala Lumpur	New Delhi	Manila	Helsinki	Seattle	Belgrade	Cologne	San Jose (Ca)	Kansas City
		Brussels	Miami	Montreal	Karachi	Hanoi	Monterrey	Phoenix	Colombo	Seville
			Barcelona	Philadelphia	Doha	Sofia	Almaty	Adelaide	Valencia (Sp.)	Turin
			Bangkok	Tel Aviv	Casablanca	Riga	Shenzhen	Bristol	Cincinnatti	Dar Es Salaam
			Boston	Lima	Stuttgart	Port Lous	Kuwait City	Charlotte	Milwaukee	Portland
			Dublin	Budapest	Rio De Janeiro	Detroit	Hyderabad	Georgetown	Muscat	Krakow
			Taipei	Berlin	Geneva	Calgary		Osaka	Ljubljana	Managua
			Munich	Cape Town				Tampa		Pune
			Stockholm	Luxembourg						Leipzig
			Prague	Houston						Malmö
			Atlanta	Kiev						La Paz
				Bucharest						
				Beirut						

Appendix 1 (1): Roster of Global Cities

Source: GaWC (2014)

(2): Con. Roster of Global Cities

Cities in the 'global city formation process'

High Sufficiency (n=41)			Sufficiency (<i>n</i> =84)						
Southhampton	Curitiba	Hangzhou	Florence	Liverpool	Port of Spain	Cali	Windhoek	Macao	
Indianapolis	The Hague	Poznan	Pretoria	Jacksonville	Penang	Greensboro	Dammam	Fukuoka	
Porto Alegre	Hartford	Wellington	Toulouse	Puebla	Memphis	Genoa	Christchurch	Sheffield	
Strasbourg	Wroclaw	Ottawa	Arhus	Kaohsiung	Aberdeen	Medellin	Recife	Izmir	
Gaborone	Edmonton	Dakar	San Antonio	Minsk	Abuja	Santa Cruz	Tashkent	Nottingham	
Chengdu	Lausanne	Queretaro	Bremen	Linz	Hannover	Montpellier	Hamilton	Des Moines	
Richmond	Dhaka	Dresden	Nashville	Tbilisi	Surabaya	Cordoba	Reykjavik	Campinas	
Pittsburgh	Nürnberg	Newcastle	Bologna	Las Vegas	Bern	Wuhan	Naples	Chisinau	
Tijuana	Lusaka	Skopje	Canberra	Maputo	Halifax	Graz	Tulsa	Haifa	
Austin	Kampala	Nanjing	Nagoya	Harare	Ciudad Juarez	Jerusalem	Ludwigshafen	Madison	
Qingdao	Bilbao	Tirana	Sacramento	Cardiff	Alexandria	New Orleans	Kingston	Yerevan	
Nassau	Douala	Chongqing	Providence	Xiamen	Bordeaux	Rochester (NY)	Brasilia	Cebu	
Tegucigalpa	Abidjan	Belo Horizonte	Luanda	Birmingham (US)	Phnom Penh	Nice	Johor Bahru	Labuan	
Lille	Salt Lake City		Dalian	Leon	Winnipeg	Pusan	Xi'An	Salvador	

Source: GaWC (2014)

Appendix 2 (1): Factor Analysis - Regulatory Institutions

Stata 14 Output

Factor Analysis Regulatory Institutions							
Factor analys	is	Number of obs		=	73		
Method: prine	cipal factors	Retained factors		=	1		
Rotation: (un	rotated)	Number of param	eters	=	9		
Factor	Eigenvalue	Difference	Proportion	Cu	mulative		
Factor 1	7.77239	7.51528	0.9615	().9615		
Factor 2	0.25711	0.17021	0.0318	().9933		
Factor 3	0.08690	0.03238	0.0107	1	1.0040		
Factor 4	0.05451	0.02152	0.0067	1	1.0108		
Factor 5	0.03299	0.03945	0.0041	1	1.0149		
Factor 6	-0.00646	0.01544	-0.0008	1	1.0141		
Factor 7	-0.02190	0.01527	-0.0027	1	1.0114		
Factor 8	-0.03717	0.01747	-0.0046	1	1.0068		
Factor 9	-0.05465	•	-0.0068	1	0000		

LR test: independent vs. saturated: chi2(36) = 1146.59 Prob>chi2 = 0.0000

Parallel Analysis

PA - Parallel Analysis for Factor Analysis - N= 73

PA Eigenvalues Averaged Over 10 Replications

	FA	PA	Dif
1.	7.772386	.650744	7.121642
2.	.2571066	.4743381	2172314
3.	.0868979	.3272119	240314
4.	.0545136	.172518	1180044
5.	.0329888	.0448093	0118205
6.	0064591	0663201	.059861
7.	0219001	1381674	.1162673
8.	0371747	2371452	.1999706
9.	0546484	3291986	.2745501

Cronbach Alpha

Test scale = mean (unstandardize	ed items)	
Average interitem covariance	=	.864704
Number of items in the scale	=	9
Scale reliability coefficienct	=	0.9773

(2): Con. Factor Analysis - Regulatory Institutions

Stata 14 Output



Cattell's Scree Criterion - Scree plot of eigenvalues after factor



Appendix 3 (1): Factor Analysis - Normative Institutions

Stata 14 Output

Factor Analysis Normative Institutions								
Factor analysis		Number of obs		=	73			
Method: pr	incipal factors	Retained factors		=	1			
Rotation: (u	unrotated)	Number of paran	neters	=	8			
Factor	Eigenvalue	Difference	Proportion	Cumulati	ve			
Factor 1	5.66965	5.18819	0.9396	0.9396				
Factor 2	0.48145	0.40754	0.0798	1.0194				
Factor 3	0.07391	0.05043	0.0122	10316				
Factor 4	0.02349	0.00839	0.0039	10355				
Factor 5	0.01510	0.05432	0.0025	10380				
Factor 6	-0.03922	0.03720	-0.0065	10315				
Factor 7	-0.07642	0.03720	-0.0127	10188				
Factor 8	-0.11363	•	-0.0188	10000				

LR test: independent vs. Saturated: chi2 (28) = 609.01 Prob>chi2 = 0.0000

Parallel Analysis

PA - Parallel analysis for Factor Analysis - N= 73 PA Eigenvalues Averaged Over 10 Replications

	FA	PA	Dif
1.	5.669648	.6180556	5.051592
2.	.4814546	.4323355	.0491191
3.	.0739148	.2597378	1858229
4.	.0234854	.1240902	1006048
5.	.0151002	.0290088	0139086
6.	0392231	1283166	.0890935
7.	0764222	2137547	.1373324
8.	1136259	3259709	.212345

Cronbach Alpha

Test scale = mean (unstandardi	zed items)	
Average interitem covariance	=	0.4015264
Number of items in the scale	=	8
Scale reliability coefficienct	=	0.9431

(2): Con. Factor Analysis - Normative Institutions Stata 14 Output



Cattell's Scree Criterion - Scree plot of eigenvalues after factor



Correlations - Regulatory Institutions									
	1.01	1.02	1.06	1.07	1.1	1.11	1.12	1.16	6.03
1.01	-								
1.02	0.956*	-							
1.06	0.910*	0.899*	-						
1.07	0.845*	0.839*	0.862*	-					
1.1	0.885*	0.860*	0.895*	0.877*	-				
1.11	0.901*	0.860*	0.907*	0.877*	0.979*	-			
1.12	0.862*	0.832*	0.807*	0.853*	0.885*	0.895*	-		
1.16	0.895*	0.891*	0.845*	0.847*	0.788*	0.793*	0.776*	-	
6.03	0.867*	0.858*	0.808*	0.791*	0.846*	0.842*	0.764*	0.804*	-
		Corr	elations -	Normati	ve Institu	utions			
	1.17	1.18	6.15	6.16	7.01	7.07	11.09	7.06	
1.17	-								
1.18	0.832*	-							
6.15	0.731*	0.630*	-						
6.16	0.797*	0.693*	0.726*	-					
7.01	0.751*	0.623*	0.745*	0.699*	-				
7.07	0.392*	0.310*	0.525*	0.479*	0.600*	-			
11.09	0.885*	0.851*	0.716*	0.818*	0.730*	0.441*	-		
7.06	0.855*	0.776*	0.741*	0.765*	0.790*	0.388*	0.910*	-	

Appendix 4: Correlation matrices for Regulatory and Normative Institutions



Appendix 5 (1): Distribution of Subsidiaries by Country and Classification

3,5 3 2,5 2 1,5 1 0,5 0 ■ Periphery ■ Metro ■ City

(2): Con. Distribution of Subsidiaries by Country and Classification

(3): Countries with no global city

Countries with no global city	# Subsidiaries
Malta	5
Jamaica	3
Virgin Islands (British)	3
Cayman Islands	2
Costa Rica	2
Mongolia	2
Nepal	2
Yemen	2
Barbados	1
Bermuda	1
Bosnia & Herzegovina	1
Brunei Darussalam	1
Fiji	1
Guernsey	1
Guinea	1
Isle of Man	1
Liechtenstein	1
Myanmar	1
New Caledonia	1
Solomon Islands	1
Vanuatu	1

Model	1	2	3	4	н
Number of $obs = 1327$					
Log likelihood =	-1,27	6.674	-1,272	2.886	
Pseudo R2 =	0.0)50	0.0	53	
	Main	effects	Including in	teractions	
	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city	
Institutional Distance					
Regulatory distance	0.077	-0.023	0.097	-0.052	H2
Normative distance	-	-	-	-	
Cognitive distance	0.228***	0.111*	0.244***	0.130**	H2
Control variables					
Geographic distance (000 km)	0.053***	0.097***	0.051**	0.096***	
Economic distance	0.004	-0.024***	0.003	-0.024***	
Industry Pressures					
Integration pressures	0.340*	0.656***	0.346*	0.648***	H3
Responsiveness pressures	-0.325	0.495***	-0.326	0.493***	H4
Mixed pressures	0.221	0.988***	2.012**	1.333*	
Interactions					
Mixed pressures * Regulatory dista	ance		-1.228	0.395	H5
Mixed pressures * Normative dista	ance		-	-	
Mixed pressures * Cognitive distant	nce		-0.614	-0.496	H5
Constant	-1.898***	-2.313***	-1.958***	-2.306***	

Appendix 6: Multinomial Logistic Regression Models - Regulatory Models

* Significance at p < 0.10; ** Significance at p < 0.05; *** Significance at p < 0.001

Appendix 7 (1): Robustness Test 1

Excluding Subsidiaries in the United States - Normative model

Model	1	2	3	4	Η
Number of $obs = 1,075$					
Log likelihood =	-1,025	5.188	-1,022	2.195	
Pseudo R2 =	0.03	85	0.04	413	
	Main ej	ffects	Including in	nteractions	
	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city	
Institutional Distance					
Regulatory distance	-	-	-	-	H2
Normative distance	0.019	0.189	0.048	0.130	H2
Cognitive distance	0.281***	0.0993	0.297***	0.121*	H2
Control variables					
Geographic distance (000 km)	0.025	0.061**	0.021	0.061**	
Economic distance	0.008	-0.016**	0.008	-0.016**	
Industry Pressures					
Integration pressures	0.156	0.717***	0.163	0.706***	H3
Responsiveness pressures	-0.426	0.571**	-0.428	0.568**	H4
Mixed pressures	0.144	1.034***	1.601*	1.406**	
Interactions					
Mixed pressures * Regulatory dis	stance		-	-	
Mixed pressures * Normative dis	tance		-1.235	0.539	H5
Mixed pressures * Cognitive dist	ance		-0.589	-0.498	H5
Constant	-1.643***	-2.109***	-1.691***	-2.113***	

* Significance at p < 0.10; ** Significance at p < 0.05; *** Significance at p < 0.001

(2): Robustness Test 1

Excluding subsidiaries in the United States - Regulatory model

Model	1	2	3	4	Η
Number of $obs = 1,0/5$				o	
Log likelihood Pseudo R2 =	-1,024	-1,024.021		-1,020.628	
	0.03	0.0396			
	Main e	Main effects		Including interactions	
	Periphery vs Global City	Metro vs Global city	Periphery va Global City	Metro vs Global city	
Institutional Distance					
Regulatory distance	0.173	0.278*	0.188	0.235	H2
Normative distance	-	-	-	-	H2
Cognitive distance	0.264**	.088	0.280***	0.109	H2
Control variables					
Geographic distance (000 km)	0.025	0.060**	0.023	0.060**	
Economic distance	0.011*	-0.014**	0.010*	-0.014**	
Industry Pressures					
Integration pressures	0.194	0.751***	0.200	0.738***	H3
Responsiveness pressures	-0.413	0.584**	-0.416	0.580	H4
Mixed pressures	0.176	1.064***	1.861*	1.180**	
Interactions					
Mixed pressures * Regulatory distance			-1.123	0.570	
Mixed pressures * Normative distance		-	-	H5	
Mixed pressures * Cognitive distance		-0.575	-0.478	H5	
Constant	-1 720***	-7 195***	• -1 780***	-2 179***	

Appendix 8 (1): Robustness Test 2

Excluding Russia as home country - Normative model

Model	1	2	3	4	Η
Number of obs $= 1,233$					
Log likelihood =	-1,183.391		-1,179.967		
Pseudo R2 =	0.0459		0.0487		
	Main effects		Including interactions		
	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city	
Institutional Distance					
Regulatory distance	-	-	-	-	
Normative distance	-0.243**	-0.190	-0.182	-0.262	H2
Cognitive distance	0.255**	0.100	0.281**	0.121*	H2
Control variables					
Geographic distance (000 km)	0.072	0.106***	0.068**	0.105***	
Economic distance	-0.004	-0.027***	-0.005	-0.027***	
Industry Pressures					
Integration pressures	0.395**	0.625***	0.398**	0.614***	H3
Responsiveness pressures	-0.306	0.377**	-0.304	0.375*	H4
Mixed pressures	0.283	0.958***	1.771*	1.135	
Interactions					
Mixed pressures * Regulatory distance			-	-	
Mixed pressures * Normative distance			-0.964	0.782	H5
Mixed pressures * Cognitive distance			-0.686	-0.495	H5
Constant	-2.183***	-2.3018**	[:] -2.255***	-2.277***	

* Significance at p < 0,10; ** Significance at p < 0,05; *** Significance at p < 0,001

(2): Robustness Test 2

Excluding Russia as home country - Regulatory model

Model	1	2	3	4	Η
Number of $obs = 1,233$	1 102	005	1 170	A.E. A	
Log likelihood =	-1,183.285		-1,179.454		
Pseudo R2 =	0.0460		0.0491		
	Main effects		Including interactions		
	Periphery vs Global City	Metro vs Global city	Periphery vs Global City	Metro vs Global city	
Institutional Distance					
Regulatory distance	-0.063	-0.159	-0.011	-0.195	H2
Normative distance	-	-	-	-	
Cognitive distance	0.249**	0.097	0.276**	0.116*	H2
Control variables					
Geographic distance (000 km)	0.072**	0.102***	.068**	0.101***	
Economic distance	-0.002	-0.026***	-0.002	-0.026***	
Industry Pressures					
Integration pressures	0.407	0.621***	0.411**	0.611***	H3
Responsiveness pressures	-0.301**	0.371**	-0.296	0.368**	H4
Mixed pressures	0.291	0.953***	2.128**	1.176	
Interactions					
Mixed pressures * Regulatory distance			-1.219	0.510	H5
Mixed pressures * Normative distance			-	-	
Mixed pressures * Cognitive distance		-0.651	-0.484	H5	
Constant	-2.204***	-2.228***	-2.294***	-2.215***	

* Significance at p < 0,10; ** Significance at p < 0,05; *** Significance at p < 0,001